

Education in Bolivia

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A PRELIMINARY SECTOR ASSESSMENT

The U.S. AID Mission to Bolivia
July 1975

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INTRODUCTION

In its Development Assistance Program (DAP) for Fiscal Year 1975, which was submitted in November, 1973, the Mission identified the Education Sector as one in which it proposed to focus its efforts during the period FY 1974 through FY 1977. The DAP proposed that within that focus AID continue to support the administrative reform program of the Ministry of Education through a loan in FY 1974 and tentatively concluded that in future years AID's activities in education should be expanded to include programs directed at the improvement and expansion of education for the rural population. The DAP also reported that the Ministry of Education was conducting a Diagnóstico of the Education Sector which, together with the National Education Plan to be based on its conclusions, would permit the Mission to prepare a Sector Assessment on which AID could base its judgments concerning the type of programs best suited for future work in education in Bolivia.

The Ministry of Education has completed the draft Diagnóstico which essentially is a description of the problems facing public education in Bolivia. The Ministry is now in the process of formulating the National Education Plan including decisions on the priorities which should be given to work on the various problems facing education-- which it will present to the various interested public and private organizations within a month or two. Thereafter the proposed Plan will be given publicity and be the subject of considerable public discussion. The aim is to have a formally adopted, Government-wide endorsed National Education Plan by December 1974.

Concurrently with the Ministry's final work in completing the Diagnóstico the Mission has been working on the preparation of a Sector Assessment. We decided not to wait for the completion of the Ministry's work because we thought that in trying to prepare our Assessment we should be most likely to identify important, continuing gaps in knowledge and problems which were not yet being analysed. We also thought that the results of our own work would be useful to the Ministry in its analysis and in the discussions which it will hold upon the publication of its Diagnóstico. This paper is the result of our efforts.

This Sector Assessment must be considered preliminary for several reasons:

First, since the Government has not yet formally adopted its National Education Plan we are not yet in a position definitively to adopt a sector strategy which would be supportive of the Plan.

Second, this Assessment does not adequately treat several important topics-- such as university level education, the actual and potential role of non-formal educational activities, and the question of the effect on the educational system performance of the fact that a substantial segment of the rural population speaks only Indian languages. The less than adequate attention paid to

the first two topics is the result of: (i) the Ministry's Diagnóstico having placed much more emphasis on programs for which the Ministry is responsible (such as public primary and secondary education and teacher training) than on programs for which it is not responsible; and (ii) the failure of the Mission's plans to have local institutions help us review the situation of University - level and non-formal education. The role of Indian languages in public education is one that has been sensitive for the Government, whose past policy has been to discourage their use in schools, but is one that clearly will receive increased attention in the future.

Third, since we hope to have our future programs in the sectors of agriculture, health and education reinforce each other to a significant degree, we would not want to adopt a final program strategy in education until the Assessments are complete for the other two sectors. That is expected to be achieved within two months for agriculture and by fall for health.

Fourth, the timing of the various elements of the proposed program still needs considerable refinement.

Our plan is to distribute this Preliminary Sector Assessment to relevant Government of Bolivia offices and to other assistance agencies in order to get their observations and suggestions and concurrently to conduct a more thorough analysis of the state of non-formal education activities and other aspects of the sector which are in need of further clarification.

We should hope to be able to take into account the suggestions of AID-Washington, of the other assistance agencies and of the various Government offices so that a Final Sector Assessment would be ready as soon as the Government formally adopts its National Education Plan.

In the meantime, we think that there is sufficient basis for reaching at least tentative decisions concerning future programs. Although the Government has not yet formally adopted a National Education Plan it seems unlikely that any such Plan would fail to take into account the major findings of the Diagnóstico which are now known. Granted that more should be known about non-formal education activities, still it is clear that no matter what the outcome of future study the Ministry will be a key channel in working on any future non-formal programs and that the need for improving the formal education system in rural areas will be of major importance. Then too, all the information that has been developed during the preparation of this Preliminary Sector Assessment has tended to confirm our original views as to where AID should be placing its emphasis in education, and the Ministry of Education strongly agrees with those views.

U.S. AID Mission to Bolivia

May 20, 1974

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PART I- THE NATIONAL SETTING

A Geography and Population

Bolivia's area of 419,470 square miles approximates that of Utah, Colorado, New Mexico and Arizona combined. Its population was estimated in 1972 to be 5,194,900. Fifth in area of the ten South American republics (a little smaller than Colombia), it exceeds in population only the far smaller Paraguay and Uruguay.

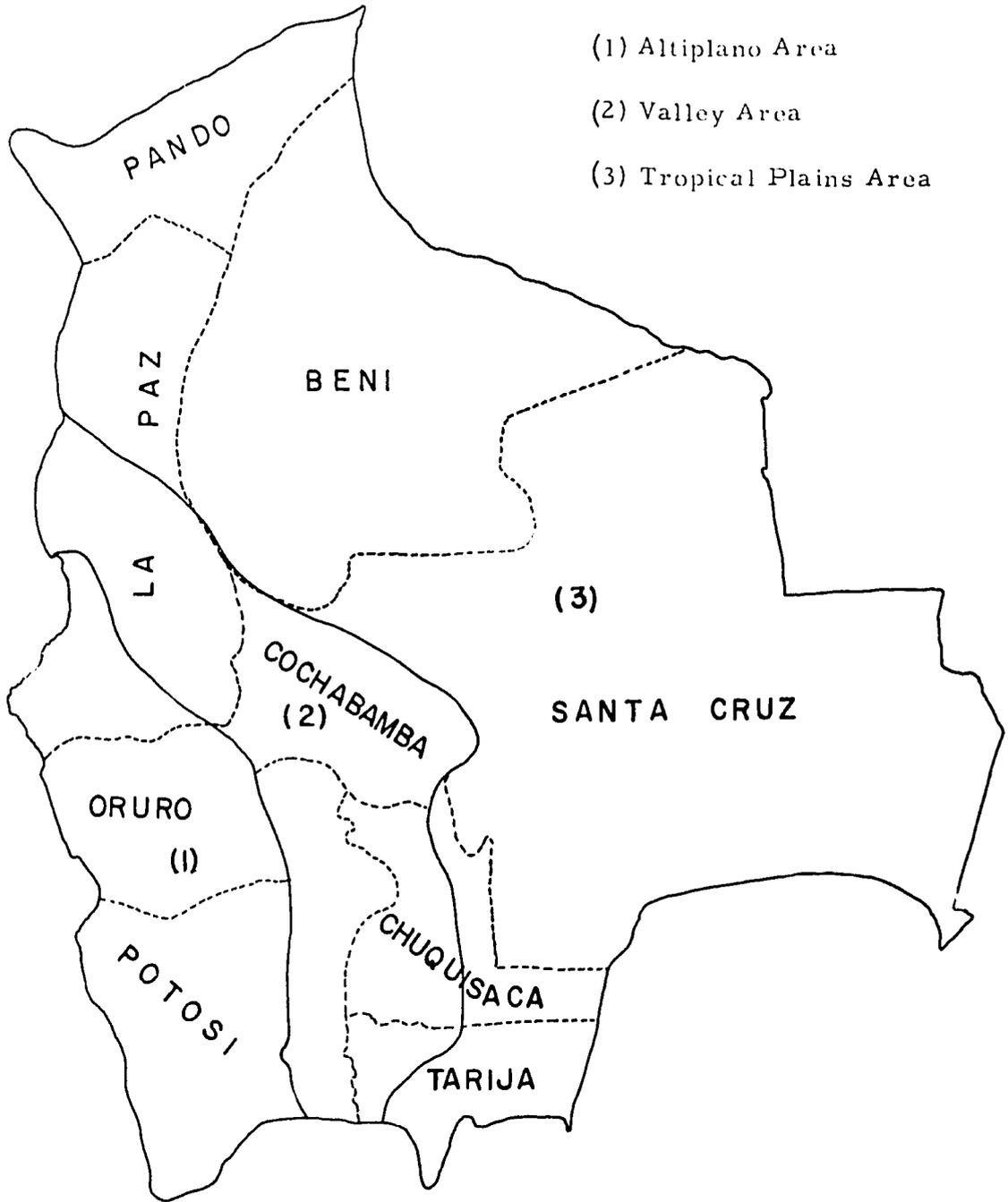
Structurally the land is divided into three main regions, a high plateau (the Altiplano) and its surrounding Andean rimlands, the eastern slopes of the Andes and the broad eastern plains. Within each main division subregions are distinguished, accounted for mainly by differing amounts of rainfall and the effects of relief and vegetation but also by local structural variations. The country is entirely in the tropical zone, but the extreme spread in altitude - from about 300 feet to over 21,000 feet above sea level - produces a wide variation in climate from the continuous moist heat of the Amazonian rain forest to the perpetual snow of the Andes. The regions of the country are shown on the accompanying map.

Bolivia has a population density of only 12 persons per square mile. Population distribution is very uneven. The highlands areas have always been more densely peopled, but even there the southern arid portion of the Altiplano supports less than 2 persons per square mile. The rest of the highlands, including the eastern Andean slopes, has a density of over 30 persons per square mile, with greater concentrations in the vicinity of Lake Titicaca and Cochabamba. The eastern plains, except for a small area around Santa Cruz, have a density of less than 2 per square mile. An estimated 54% of the population live on the Altiplano, 32% in the valleys and 14% in the eastern plains. Table 1-2 presents the regional characteristics of the population. Population by school age group and by Department are shown in Table 1-3.

La Paz, with over 580,000 people, is the only large city. Cochabamba, the second city, has 163,000. Santa Cruz, the most rapidly growing city has 128,000. Oruro with 103,000 is the only other city with more than 100,000 people. Overall about 30% of the population live in the urban centers of more than 2,000 each and the remaining 70% live in rural areas.

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TABLE I - I Map of the Regions of Bolivia



Departmental boundaries indicated with dotted lines

TABLE I - 2 Regional Characteristics of Bolivia

<u>Region</u>	<u>Ethnic Group</u>	<u>Area</u> Km ² (000)	%	<u>Population (1972)</u>	
				<u>Total</u> (000)	%
Altiplano	Aymara and Spanish Speaking	160	14	2,813.5	54
Valleys	Quechua and Spanish Speaking	256	23	1,649.0	32
Eastern	Spanish Speaking Guarani and others	690	63	732.5	14
		<u>1,100</u>	<u>100</u>	<u>5,195.0</u>	<u>100</u>

Source: Ministry of Education data

TABLE I - 3 Population Estimate by Department and Age Group, 1973

<u>Department</u>	<u>Total</u>	<u>Ages 6-14</u>	<u>Ages 15-19</u>
La Paz	1,674,600	310,470	142,340
Potosí	943,600	170,490	80,210
Cochabamba	866,100	160,570	73,620
Santa Cruz	505,200	93,660	42,940
Chuquisaca	499,500	92,610	42,460
Oruro	371,300	68,840	31,560
Tarija	223,900	41,510	19,030
Beni	211,500	39,210	17,980
Pando	35,000	6,490	2,980
Total	<u>5,330,700</u>	<u>988,310</u>	<u>453,110</u>

Source: Ministry of Education data.

B. Cultural Characteristics

Ethnically the population is sharply divided by cultural and language groups. Approximately 35% of the population speak Spanish as their native language. These people live primarily in the urban areas and in the eastern plains. Another 34% speak Quechua, the language of the ancient Incas. The Quechua-speaking people live primarily in the Valleys, in the central and southern parts of the country. The third largest group are the Aymara, 23% of the population. They are the descendents of the pre-Inca group which developed the Tiahuanaco civilization in Bolivia a thousand years ago. They live in the La Paz and western Altiplano areas of the country, their ancestral lands, where they have maintained their ethnic integrity throughout Inca and Spanish conquest. The remaining 7% of the population belong to 23 other language groups. They live principally in the eastern part of the country and the northern Amazon valley area. The attachment of the highland Indians to their respective home lands has acted as a strong deterrent to the need, long felt by Bolivian governments, to colonize and exploit the more fertile parts of the lowland areas.

The country has not attracted a large number of immigrants in the past century. The census of 1950 listed 4,740 speakers of Portuguese (mostly from Brazil), 3,599 German speakers (including Mennonites) and 2,500 who speak other European languages including English. Since 1950, one colony of Japanese (1,500) and three colonies of Okinawans (totalling over 3,000) have been attracted to settle in the Santa Cruz area

The population of modern Bolivia draws its ethnic origins from two major components: the linguistically and culturally diverse native Indian groups and the white Spanish speakers who, in the mid-sixteenth century, imposed their rule upon the area and its peoples. From the earliest days of colonial rule, interbreeding between Spaniards and Indians produced a distinct group of mestizos or persons of mixed blood. As the population of mestizos grew, its members developed an increasingly strong sense of social identity and by the middle of the seventeenth century they constituted a third recognizable ethnic grouping. In spite of more than four centuries of contact, these disparate ethnic elements have not been welded into a single people with one language and a strong sense of nationality.

The minority of Spanish-speaking persons of predominantly European cultural orientation have traditionally dominated national politics, society and the economy; they are commonly called blancos. The mestizo group are called cholos, a term which implies an unspecified degree of Indian racial heritage. (Since the 1952 Revolution, the Indians have been called campesinos)

Great contrasts in physical environment between the eastern lowlands and the Andean highlands of what is today Bolivia have always been reflected in sharp contrasts between the ethnic histories of the two areas. When the Spaniards arrived in the highlands, they encountered a relatively dense population of sedentary agriculturalists, predominantly speakers of Quecha or Aymara. These people had achieved a high degree of technological efficiency and sociopolitical organization, and had been united under the rule of the powerful Incan Empire. In the sparsely-settled lowland, by contrast, the Spaniards found a population of culturally varied peoples speaking several dozen languages. None of the lowland groups had achieved the high level of technology and organization characteristic of the highlanders.

The conquest of the Inca highlands was achieved with a minimum of physical combat. The invaders captured control of the highly centralized imperial government. Local units, left without leadership, then capitulated readily. The lowlanders, on the other hand, more mobile and generally oblivious to the Inca-imposed traditions of obedience to central authority, most often mounted a fierce resistance to the white intruders. In consequence, most of the lowland native groups rapidly became extinct, by extermination and dispersal.

The social order imposed by the Spaniards was structured around a rigid system of ethnically-based castes. Spaniards held all key positions of power and authority. The Indians were relegated to a subservient status as peasants, forced laborers and payers of tribute. The mestizos rapidly came to assume a middle position in this social scheme, serving as artisans, small merchants, local officials and overseers of Indian labor.

The social, economic and political changes which have taken place since the 1952 Revolution largely have destroyed the bases of that ethnic caste system. Agrarian reform has brought the return of control over farm lands to the Indians. Constitutional reforms have given the Indians at least a potential voice in national politics. Rural educational programs to some degree have spread the knowledge of Spanish and increased literacy among the previously monolingual and illiterate Quechua and Aymara speakers.

It is clear that, as the traditional caste-based social structure disappears, the cultural and linguistic barriers which have divided the Bolivian population into isolated ethnic segments will tend to fade. However, this process will be slow. The ethnic groupings around which colonial society was structured continue to be clearly defined and they probably will persist for some time.

The cultural diversity of Bolivia has made education difficult from the beginning. Indians groups have resisted being absorbed into the Spanish - speaking culture. This has created special problems for the national school system which, since its beginnings, has strived to be monolingual. Teachers in the predominantly Indian -speaking areas have to adapt their methods and language if they are to communicate with non-Spanish speaking children. These children, in turn, undergo the double difficulty of not only adapting to a school system based on a different culture but of learning to read and communicate in a foreign language from their first days in school. These cultural differences and ensuing conflicts undoubtedly have contributed to the high drop-out rate in rural primary schools.

C. The Economy

Few nations of South America have been endowed with greater natural wealth than Bolivia and none has surpassed it in poverty. "A beggar sitting on a throne of gold" has been a metaphor used by Bolivians to describe this paradox.

Silver, gold, tin, zinc, antimony, tungsten, lead, copper and a variety of other valuable minerals occur in the highlands. Petroleum, natural gas and hydroelectric resources are plentiful. Fertile valleys and wide - plains provide good soil and climate for rice, corn, sugar, cacao and Brazil nuts. Even the Altiplano produces barley, potatoes, quinoa and wheat. Two-fifths of the country is covered with forests rich in timber, fibers and natural rubber. There are extensive pastures for cattle in the valleys and on the plains and for sheep and llama in the highlands. The lakes and rivers can provide ample quantities of fish.

Notwithstanding the natural richness, most of the relatively small population of 5 million has barely adequate food, shelter and clothing. The annual per capita income is about \$240, next above that of Haiti, the lowest in Latin America. The gross domestic product is about \$ 1 billion per year and has been growing at a rate of 5.3% per year in the past decade. With a population increase estimated at 2.6%, the annual growth in gross domestic product per capita has averaged 2.7%.

Agriculture expanded at an annual rate of only about 2% in the past decade, much less than the general level of growth of some 5%; consequently, its share of the gross domestic product dropped from 29% in 1960 to 17% in 1971. Two-thirds of Bolivia's labor force are engaged in this sector at an estimated per capita income of less than \$50. Thus, despite an ambitious agrarian reform program, initiated after the 1952 Revolution, most of the rural popula -

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tion is still living in poverty and remains outside the money economy.

Agriculture's poor performance is a consequence of the continued reliance for the basic food supply on the Altiplano, where infertile soil, harsh climate, inadequate transportation and marketing infrastructure, limited credit and extension facilities, together with extensive illiteracy, hamper development efforts. Although the per capita gross domestic product of the lowlands is three times that of the Altiplano, this income differential has not stimulated largescale migration to these areas. Colonization efforts in the lowlands have been less successful than expected. Nevertheless, the lowlands, especially in the Department of Santa Cruz, have rapidly expanded their production of cotton, beef, rice, sugar and coffee, thereby contributing to greater national self-sufficiency in foodstuffs and to increased foreign exchange earnings.

Manufacturing has remained a fairly constant proportion of the gross domestic product at about 13%. Petroleum refining has been the most dynamic sub-sector, accounting for about 20% of all manufacturing. The structure of manufacturing is changing slowly from handicrafts to industrial goods, but small internal markets, lack of purchasing power and inadequate infrastructure and human resources have inhibited a more rapid growth.

The mining sector continues to be Bolivia's major source of foreign exchange. Mineral sales account for 80% of exports, but this sector's payroll of 67,000 represents only 3% of the labor force. Total mineral exports in 1972 were \$ 174 million and are expected to increase in value significantly as world mineral prices rise. Oil production, and especially the foreign exchange earnings from this source, are also rising. The value in 1972 of petroleum and natural gas exports was \$ 41 million.

Since 1971 Bolivia has conducted a partially successful monetary devaluation, achieved an improved fiscal situation, revitalized private sector activity and attracted new injections of external capital from the international financial community.

As a result, real per capita gross domestic product growth in the past two years probably has exceeded 3.5% per year. Furthermore the country's prospects for continued growth are good. As an exporter of metals, petroleum, natural gas and agricultural products in world demand such as cotton, beef and sugar, the economy should be able to increase its foreign exchange earnings and improve its fiscal position in the years ahead.

The inability of the Bolivian economy to "take off" has had an adverse effect on Bolivian education. With its severely limited resources, the educational system has attempted to keep up with the demands for basic educa-

tion. This demand has been so great in relation to resources that little has been left to improve the quality of the system. The educational system has yielded to constant pressure to hire more and more teachers for whom alternative employment is scarce. As a result, an inordinately high proportion of the public educational budget has been used to pay salaries, leaving little for instructional materials, facilities construction and maintenance. Public education in Bolivia has sometimes been referred to as a hiring hall rather than as a productive educational system.

D. Employment and Education

The last census was taken twenty-four year ago and there has been no program of sample surveys, therefore the size of the Bolivian labor force can only be roughly estimated. The IBRD, using Ministry of Planning figures, estimated in 1972 that both the population and labor force had been growing at 2.6% annually, and that the labor force constituted about 47% of the population. The Ministry of Planning - Ohio State "Human Resource Development Plan" - projected in 1969 that the labor force participation rate would decline to 41% by 1972. Assuming that the rate is between 41 and 47%, the labor force in 1974 is probably between 2.2 and 2.6 million out of an estimated population of almost 5.5 million.

Data on employment and unemployment are scarce and unreliable. Several studies in the mid-1960's estimated unemployment nationally at around 5%, most of it in urban areas. However, more recent estimates by the World Bank placed unemployment at about 14% in 1965 and about 16% in 1970.

The lack of large urban slums tends to confirm the view that unemployment in Bolivia may not be as severe as in many other developing countries. This might be explained by the low population density in Bolivia, the availability of agricultural land as a result of the agrarian reform which began in 1952, and the different ethnic patterns existing in urban and rural areas. These three factors appear to have dampened the rural-urban migration that is typical to other developing countries.

More importantly perhaps, open unemployment is lessened by massive underemployment. The Mission has estimated that unemployment and disguised unemployment together total about 28% of the labor force. The presence of underemployment is confirmed by the extremely low average output per worker in rural areas, the large supply of low cost domestic servants, and by observation of the extraordinarily large number of street merchants and small shopkeepers in urban areas who have almost no inventories and whose sales are extremely low.

The agriculture sector continues to absorb by far the largest percentage of workers, about two-thirds of total employment. Mining, although im-

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portant for economic reasons, absorbs a relatively small quantity of labor. The sectoral composition of employment for the years 1967 and 1970 are shown in the following Table.

TABLE I - 4 Estimated Employment by Sector of Economic Activity 1965, 1967 and 1970.

(Empl. in thousands)

	1965		1967		1970	
	Empl.	%	Empl.	%	Empl.	%
Agriculture	1, 169	67.2	1,205	66.0	1,285	67.0
Mining & Petroleum	63	3.6	55	3.0	67	3.3
Manufacturing	139	8.0	145	8.0	167	8.5
Construction	34	2.0	40	2.2	38	1.8
Electricity, gas water & sanitation	)	)	5	0.3))
Commerce	)	)	100	5.5))
Banking, insurance and other financial institutions	)334	19.2	10	0.6	) 375	19.4
Transport, warehousing and communications	)	)	50	2.8))
Services	)	)	200	11.0))
Totals	<u>1,739</u>	<u>100.0</u>	<u>1,810</u>	<u>100.0</u>	<u>1,932</u>	<u>100.0</u>

Sources: For 1967 data: "National Plan for Human Resource Development, 1969-90"; Ministry of Planning and Coordination, GOB, and Center for Human Resource Research, Ohio State University; April - 1969. For 1965 and 1970 data, IBRD, "Current Economic Prospects for Bolivia", Aug. 16, 1972, based on figures from the GOB Ministry of Planning.

Note: Although the 1967 figures appear to be slightly inconsistent with the 1965 and 1970 figures, they are included because the same

source was used in later calculations. The figures shown in Volume 13 of the Diagnosis, also based on CONEPLAN data, are not entirely consistent with either of the sources used here. The Diagnosis figures suggest agriculture employment had fallen by 1970 to 961,200 or 56.1% of 1,712,700 employed workers.

Dividing the output (GDP) in each sector by the number of workers in that sector gives us an estimate of output/worker by sector. Output/worker does not indicate returns or income/worker since there are obviously returns to other factors of production. Nevertheless, keeping in mind that the relatively high capitalization and profits in mining sharply decrease income/worker relative to GDP/worker in that sector, the estimates then give a general idea of the relative income/worker in various sectors. As in other developing countries, the income level of those working in or dependent upon agriculture is much below the national average.

TABLE I - 5 Estimated Output by Sector and by Worker, 1970.

Sector	<u>GDP</u> \$ millions	<u>Employment</u> (000)	<u>GDP/Worker</u>	<u>GDP/Cap a/</u>
Agriculture	168.8	1.285	\$ 131.	\$ 54
Mining & Quarrying	118.3	67	1,766	724
Manufacturing	104.5	167	601	246
Construction	39.3	38	1,034	424
Services	<u>416.3</u>	<u>375</u>	<u>1,110</u>	<u>455</u>
Totals	847.2	1,932	Av. \$ 437	Av. \$ 179

a/ Assumes .41 labor force participation rate applies among population dependent on each sector.

Source: IBRD Report based on GOB Ministry of Planning and Mission calculations.

Employment in each sector is obviously composed of many occupational categories. The only available information on the occupational breakdown of the labor forces is based on the 1967 sample survey adjusted and published in 1969 by the Ministry of Planning/Ohio State Team. Their estimates of employment in major occupational categories are shown in the following Table:

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TABLE I - 6 Estimated Employment by Occupational Group - 1967

Occupational Group	<u>Employment</u>	<u>%</u>
I. Professionals, technicians, and related workers	51,300	2.8
II. Legislators, public officials and manager	14,850	0.8
III. Administrative personnel and related workers	59,150	3.3
IV. Merchants and salesmen	87,300	4.8
V. Service Workers	116,500	6.4
VI. Cattlemen, farmers, fishermen, foresters, & hunters	1,198,600	66.3
VII. Production and related workers, operators of transportation equipment, and unskilled non-agricultural laborers.	262,300	14.5
VIII. Military	<u>20,000</u>	<u>1.1</u>
Total	<u>1,810,000</u>	<u>100.0</u>

Source: Ministry of Planning - Ohio State study

The same study provides the only available information on the educational attainment level of the labor force. This information was collected for a sample of about 10,000 workers in 1967. Unfortunately the survey covered only a handful of workers in farming and similar occupations (occupational group VI in Table I-6 and I-7), and the sample size of other occupational groups ranged from 2% to 5.9%. Moreover the sample in some cases may not have been representative of the group, and there appears to have been an upward bias in the responses of some individual respondents with respect to their level of educational attainment.

Because no data appears to exist on the education level of occupational Group VI, essentially the rural population engaged in agriculture, rough estimates have been made for that group.

Given that illiteracy in rural areas is estimated at 85%, it would seem that no more than 15% could possibly have completed primary education. In fact, the percentages must be much smaller.

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The number of rural children enrolled in the sixth grade in 1967 was only 4,920, about 5% of the appropriate age group. In earlier years, when the 1967 adult rural population was of sixth grade age, the enrollment percentages were far lower. Thus it is unlikely that more than 2-4% of the rural adult population (as of 1967) might have had the opportunity to complete sixth grade. Moreover, the great majority of those individuals who has reached that level are believed to have either migrated to urban areas or engaged in non-agricultural work in rural areas. (As in other developing countries, education is generally viewed as the road out of farming, not the road to a better life on the farm). It can be concluded, therefore, that no more than 3% of the agriculture labor force in 1967 had completed primary education. The number of persons working in agriculture who had post-primary education would be numerically insignificant. The following Table shows the percentage of sampled workers in six non-agricultural occupational categories and our estimates of agricultural workers falling into five categories of educational attainment.

TABLE I -7 Educational Attainment Level of a 1967 Sample of Labor Force by Occupational Category
(in percentage)

Occupation as in Table I-6	% of Labor Force	% of Group Surveyed	% No. or some Primary d/	% Compl. Primary d/ only	% Some Second	% Comp. Second only	% Some Post-Second.
I.	2.8	3.1	3.4	4.6	14.6	17.7	59.6
II.	.8	3.7	5.5	5.0	12.0	19.9	57.6
III.	3.3	5.9	6.9	9.5	35.5	29.5	18.5
IV.	4.8	.2	5.8	10.1	38.9	23.1	22.1
V ^{a/}	7.5	.4	56.6	21.3	11.4	6.4	4.3
VI.	66.3	b/	97.0 ^{c/}	3.0 ^{c/}	-	-	-
VII.	14.5	1.4	49.0	20.1	26.6	3.7	.6
	100.0						

a/ Includes group VIII, Military

b/ The sample included about .003% or .00003 of those employed in the group.

Education level are Mission estimates.

c/ See text for basis of estimation

d/ Primary defined here as 6 years.

Source: Mission estimates based on data on "National Plan for Human Resources Development in Bolivia, 1969-1980", Min. of Planning and Ohio State University, April 1969.

If the above percentages from this sample are applied to the entire 1967 labor force, we can determine estimates of the educational attainment level of the entire labor force at that time. It must be emphasized that these estimates, which are shown in the following Table, should be considered only as extremely rough estimates.

TABLE I- 8 Estimated Educational Attainment Level of the Bolivian Labor Force, 1967

	No Educa- tion or so me Prima ry	Compl. Prima- ry on ly	Some Se- cond	Compl. Se- cond - only	Some Post Se- cond.	Totals
Labor Force (000)	1,381.5	135.4	149.7	68.2	76.8	1,811.5 a/
Percentage	76.2	7.5	8.3	3.8	4.2	100.0
Cumulative %	76.2	83.7	92.0	95.8	100.0	

a/ Rounding errors cause this figure to be slightly higher than in Tables 1-4 and 1-6.

Source: Mission estimates based on sources cited in text.

While the lack of data make a rigorous analysis impossible and make any conclusions about the relationship between labor productivity and educational attainment highly speculative, the data does appear to be consistent with the theory that the level of output per worker (Table I-5) is closely linked with the level of educational attainment of the labor force (Table I-7). Both logic and the experience in other countries where educational attainment has been related to output suggest that this relationship is causative, i. e. that the low educational level causes the low-level of output. Moreover, with respect to Bolivia's non-economic goals, the low level of educational attainment in ru - ral areas also goes a long way in explaining the failure of efforts to bring the

Indian population into Bolivia's social, political and cultural mainstream.

If Bolivia's past failure to develop adequately in the economic, social, political, and cultural areas is reflected in and partially attributable to the low level of educational attainment of its adult population, then the prospects for future development in these areas should be reflected in the development of its younger human resources. More specifically, the educational attainment of the Bolivian youth now passing through the educational system should be an indicator of future development.

In an effort to view both the quantitative improvements and the continuing failures of the education system, it is useful to project the probable educational attainment of a typical age cohort now entering school and to compare that with the current adult population. These projections are made on the basis of the most recent information available on retention rates throughout the education system. Applying these retention rates to the age cohort now entering first grade implicitly assumes that enrollments in grades 2-12 will expand at the same rate as the growth rate in first grade enrollment to make room for the larger class coming through. The following Table shows the projected progression of the group entering first grade in 1971 and compares the projected enrollments with the 1971 enrollment at the corresponding grade level.

Although these projections indicate that a much higher percentage of entering children will reach any given grade level than is currently the case, there are indications that the projected enrollments are conservative. The retention rates used for projection purposes have already been attained, albeit on a smaller base enrollment. Maintaining the current retention rates with the higher initial enrollment will require that enrollments expand annually at each grade level at the percentage shown in column (a). The actual annual rate of expansion at each level between 1967-1972 is shown in column (b). In almost every case, the actual performance during those five years exceeds the growth required to achieve the projected enrollment by a considerable margin.

TABLE I - 9 Enrollment Projection of Group Entering School in 1971 based on 1971-1972 retention rates

Years Grade	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	(a) Annual % Incr. to Achieve Projected Enrollment	(b) Actual % Incr. in Enrollment 1967 - 72
1 No. %	183,186 (100.0)												--	3.2
2 No. %	133,909 (75.0)	137,355 (75.0)											2.6	4.2
3 No. %	106,983 (63.8)		114,454 (62.5)										3.4	5.2
4 No. %	78,621 (48.2)			90,464 (49.4)									4.8	6.3
5 No. %	62,633 (38.6)				77,096 (42.1)								5.3	6.3
6 No. %	55,593 (N.A.)					62,207 (36.7)							3.9	8.0
7 No. %	41,049 (N.A.)						56,403 (30.8)						5.4	5.0
8 No. %	32,909 (N.A.)							50,726 (27.7)					6.4	12.4
9 No. %	30,258 (N.A.)								53,473 ^{a/} (29.2)				7.4	16.0
10 No. %	25,252 (N.A.)									45,598 (24.9)			6.8	16.2
11 No. %	16,351 (N.A.)										37,907 (20.7)		8.8	20.1
12 No. %	12,216 (N.A.)											33,512 (18.3)	9.6	16.1

No: Number enrolled % : Number enrolled as a percentage of number starting.

a/ This figure, which is based on Ministry data which shows a larger 9th grade enrollment in 1972 than 8th grade in 1971, must be incorrect. Since we could not determine whether the 1971 8th grade figure was too low or the 1972 9th grade too high, the figures are used as reported.

Source: Mission estimates based on "Estadística Educativa, 1972", Ministry of Education.

From Table I - 9 we can divide the group entering school in 1971 (roughly speaking the 7 year-olds in that year) into the educational attainment level categories used in Tables I - 7 and I - 8. One difficulty in doing this is that we need to know the number or percentage of children who do not enter school at all. Lacking any recent census information, this number must be estimated based on data provided by the Latin America Center of Demography and the Bolivian Demographic Center (CENAFA) suggest that the number of seven year-olds in 1971 should have been in the neighborhood of 128,000 - 135,000. The larger first grade enrollment in 1971 of 183,186 thus present some obvious questions.

The fact that many students start school late is a partial explanation, particularly if the tendency to do so is diminishing. In other words, the 183,186 figure includes many "over-age" students, but it is also true that many of the appropriate-aged students did not start school and thus are not included in the enrollment figure. The two factors would tend to offset each other unless the tendency to start school late is declining.

Another partial explanation is repeating, i.e. that many first grades repeat the grade and thus inflate first grade enrollment figures each year. The data on this question which is provided by the "Diagnosis", however, suggests that only about 5-6% of first graders repeat.

A third possible explanation is that the estimate of the number of Bolivian youth is understated or the school enrollments are overstated. Even viewing these possible explanations together, it is difficult to avoid the conclusion that the size of the age cohort is unlikely to be very much larger than the first grade enrollment. In other words, it appears that virtually all Bolivian youth are at least starting school. If we therefore assume that the 183,186 that started school represent one complete age cohort, the academic attainment level of the cohort can be projected as follows:

TABLE I - 10 Projected Educational Attainment Level of An Age Cohort Entering First Grade in 1973.
(based on 1971-1972 drop-out rates)

	No Education or Some Primary a/	Completed Primary a/ only	Some Se - condary	Completed Secondary Only	Some Post Secondary	Totals
No.	115,919	10,799	22,896	33,512		183,126
%	63%	6%	13%	18%		100.0
Cum. %	63%	69%	82%	100%		

a/ Defined herein as Grades I-6 for consistency with Table I-8.

The data are not sufficient to determine how many of those who complete secondary school will receive some form of additional formal training. It is probable that over 75% continue.

It can be seen that about 31% are expected to continue beyond the 6th grade (in 1976). This compares favorably with the stock of workers in 1967 (Table I-8) of which only an estimated 16% had more than six years of education. Comparisons of this type do indicate a gradual rise in the average educational level of the labor force. Yet, it can also be seen that perhaps as much as half the labor force a decade or two hence is still likely to lack even basic literacy. Thus, although considerable progress has been made in the last decade, the qualitative and quantitative problems which plague Bolivia's system for human resource development at the present time will continue to constrain the future growth of productive employment as well as the attainment of important non-economic goals.

E Migration and Education

In Bolivia, as in all countries, there is continuing internal and external migration, although the migration rate to the cities in Bolivia is low compared to most Latin American countries. Adequate data do not exist on the relationship between the propensity to migrate and educational level. However, it has been shown that there is considerable migration by the better educated part of the population. For example, among a 1967 labor force survey, one half of those with specialized secondary or higher level education did not work in the same Department where they had received their schooling. The undocumented assumption also exists that those who migrate from rural to urban areas are better educated than their compatriots who remain behind. Such migration may lead to a lowering of educational levels in both areas since the urban average education levels are much higher than the rural levels.

Migration from Bolivia also appears to decrease the remaining population's average level of educational attainment. To the extent that this is true and inasmuch as education is highly subsidized in Bolivia, this emigration entails a net loss to those remaining. The Government Ohio State study team found in the mid-1960s that a significant portion of the labor force in many high level occupations was emigrating. This loss was particularly striking when related to the number of recent graduates in these fields. This data is summarized below.

I/ Ohio State University, Human Resources in Bolivia: Problems, Planning and Policy. La Paz, April 1971, p. 120

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TABLE I -II Number of Exit Visas issued for "Permanent" Reasons in La Paz - Bolivia to Selected Occupations in 1965; Total Employment in the same Occupations in 1967; and Total Number of Graduates in Related Fields from the Universities, 1956 through 1966.

Occupation	Number of Exit visas issued for "permanent" reasons in 1965	Estimated total employment, 1967	Number of Graduates 1956-1966	Number of Exit visas as a percentage of total employment $(2) - (3) \times 100$	Number of Exit visas as a percentage of graduates $(2) - (4) \times 100$
(1)	(2)	(3)	(4)	(5)	(6)
Architectural engineers	15	275	121	6	12
Civil engineers	40	700	199	6	20
Mining and petroleum engineers	9	400	150	2	6
Agriculture engineers	7	375	167	2	4
Physicians & surgeons	24	1,400	955	2	3
Dental surgeons, dentists and dental technicians	6	775	529	1	1
Magistrates, judges, lawyers and notaries public	33	3,600	1,419	1	2
Nurses	17	1,200	354	1	5

Source: Data on exit visas supplied by the Ministerio de Hacienda y Estadística, Dirección General de Estadística y Censos; estimated total employment based on the Ohio State manpower survey.

Note, for example, that the number of architects and civil engineers who emigrated in 1965 was over 5% of the total employment in those fields. Moreover the emigrants in that one year amounted to 12 and 20% respectively of all such graduates in those fields during the eleven year period from 1956 through 1966. The Government-Ohio State team suggested that official statistics probably understated the severity of the actual emigration of high and middle level manpower. This judgment was based on the following factors:

"First, a rather substantial percentage of ostensibly permanent emigrants declare themselves to be students. In 1965, the proportion was one out of ten. In addition, some percentage of the students who go abroad for the declared reason of further study probably do not return; many students, of course, have professional skills or develop them while studying abroad. Secondly, deans of a number of faculties, schools, and institutes reported that rather large proportions of their recent graduates had left the country to find work. According to these reports, student out-migrants vary substantially as a percentage of graduates of various schools and faculties.

In general, the reports suggest that perhaps half of the graduates of middle level technical, agricultura, and commercial institutes or schools administered by the universities may leave the country. Likewise, between 10 and 50 percent of the graduates of faculties of medicine, agronomy, and engineering may leave the country each year. Undoubtedly, many of the graduates eventually return to Bolivia. Yet, it is obvious that external migration constitutes a significant human resource problem for the country". 1/

For Policy reasons, it is important to know why individuals emigrate. To the extent that external migration is an indication of an over-supply in the labor market, and thus in the provision of certain types of education or training, the country can lessen the economic and financial losses by making appropriate adjustments in its human resource development programs. Clearly a country like Bolivia should avoid utilizing its scarce educational resources to produce more skills of a certain type than the economy can absorb. If there is no over-supply and emigration is due to higher incomes or non-economic inducements in the receiving country, the policy implications for the education sector (and possibly other sectors) would be quite different. Bolivia must do all it can to provide incentives to keep its few and costly graduates.

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The loss to society as a result of emigration is greater the more the society needs (values) the emigrants' productive services.

For lack of a better estimating device for measuring an individual's value to society, economists frequently utilize his economic productivity as measured by his salary. Given the lack of reliable data on emigrants and any data on salaries; estimating the real (economic) cost to society is extremely difficult. As a less satisfactory alternative, the minimum cost to society may be estimated as the Government's subsidy in the emigrants' education. The estimated cost per graduate at different levels are as follows:

TABLE I - 12 Estimated Education Costs, 1971

Level	Av. Cost/yr.	Cost of Compl. program	Cumulative Costs
Primary education ^{a/}	\$. 40	\$. 320	\$. 320
Secondary education ^{b/}	93	372	692
Post-sec. non univ. ^{c/}	144	504	1, 196
University educ. ^{d/}	375 ^{e/}	1, 875	2, 567

^{a/} Assumes a 8 year primary program

^{b/} Assumes a 4 year secondary program

^{c/} Assumes a 3.5 year post-secondary program

^{d/} Assumes a 5 year university program

^{e/} Does not include Post-Secondary non-university

Source: Mission estimates based on Diagnosis.

Table 1- 12 indicates that society's investment in a secondary graduate is about \$ 1,200 and at least \$ 2,500 for a university graduate. The actual costs per graduate to the society are much greater if one takes into account the large amount of funds "wasted" on those who drop-out prior to graduation. The real loss to Bolivia when a scarce university graduate emigrates probably far exceeds the public subsidy of his education.

Unfortunately data is not currently available on the number or composition of the Bolivian labor force emigrating to work in other countries. It is hoped that changes in immigration laws in some of the principal receiving countries as well as the somewhat depressed conditions in those countries in recent years many have discouraged the emigration of Bolivia's high and middle-level manpower.

F. Population Growth and Education

The relationship between education and population growth is important to a country like Bolivia with declining death rates and limited economic growth. The correlation between increased education and declining birthrates is strong. The data on accompanying Table I -13, for example, show that the number of live birth for a sample of married, urban women in Cochabamba varied from a high of 6.35 for those with no education to a low of 2.2 for those with university education.

TABLE I - 13 Average Number of live births of Married Interviewees, according to level of education and area of study.

Level of Education	LA PAZ		COCHABAMBA		SANTA CRUZ	
	Urban	Rural	Urban	Rural	Urban	Rural
TOTAL	3.61	4.45	3.95	4.17	3.70	4.06
None	4.72	4.91	6.35	4.60	6.00	5.23
Primary	3.51	3.71	4.39	3.26	3.90	3.77
Secondary	2.64	2.77	3.17	4.00	3.00	5.00
University	2.67	-	2.20	-	3.75	-
Others	2.80	2.73	2.50	4.67	2.20	2.70

Source: Luis LLano Saavedra, Demographic Aspects of Bolivia (National Center of the Family, December 1972, La Paz, Bolivia) p. 32

In the rural areas of the three Departments sampled, the average difference in number of live births between those without education and those with a primary education was 1,33 while in the urban areas this difference was 1.76. The implied effect of education on reducing population growth is tremendous.

There are now approximately one million children in the 6 to 12 age group. If they as adults were to produce at the rate given in the sample for the women with primary education, in 1990 the 6 to 12 age group would be 450,000 fewer than would be the case if they reproduced at the sample rate for woman without any education. At present levels, it would cost \$ 35 million to build classrooms for those additional children, and \$ 19 million per year to teach them (compared to a 1973 total Ministry of Education budget of \$ 35 million). These figures are only illustrative, but they demonstrate the massive impact which population growth can have on the educational system, and possibly vice versa. The potential demand for other social services is similarly large. The magnitudes of these potential impacts are too great to ignore, whatever may be the accuracy of currently available data. Rapid population growth obviously will produce significant costs.

Thus impact of more general education would seem to be a reduction in the future birth rate and possibly, depending upon medical and health factors, in the rate of population growth. If such reduction were desired, it might be that non-formal education programs of family planning or a family planning program in the formal school system would be more efficient than raising the general educational level of the population. Whatever policy objectives may be chosen, the impact of education on population is of crucial importance. In Bolivia, at present, there is a shortage of capital relative to labor and both unemployment and under-employment are high. A population policy will need to be developed together with policy - making and planning for national development, and these policies and plans will directly affect the educational system.

G. - Income Distribution and Education

The percapita income level of Bolivia is not only the second lowest of any country in the Western Hemisphere, but the distribution of that income is also more inequitable than the average for the rest of Latin America. These facts are shown in the following Table:

TABLE I- 14 Estimated Income Distribution in Bolivia and Latin America.

	Population (millions)	PERCENTAGE SHARES OF INCOME			
		Poorest 20%	Middle 60%	Top 5%	Next 15%
Latin America	244.8	4.1	37.9	31.5	26.5
Bolivia	5.2	2.5	32.5	31.5	33.5

Source: IBRD, "Current Economic Prospects for Bolivia", August, 1972

The Table shows that the richest 5% of the population receive about 31.5% of the national income while the lowest 20% receives only 2.5%.

Two aspects of the relationship between education and income can be specified. First, the effect of family or personal income on educational attainment. Second, the effect of educational attainment on an individual's future earnings.

Data demonstrate that the cost of education in Bolivia is regressive, i. e. that the cost is a higher percentage of income for poorer families than for richer ones. This is true even though public education at all levels is "free" with the exception of nominal fees. The cost are of two types: direct and opportunity.

Direct costs consist of the small enrollment fee, whatever paper, pencil, text or other materials may be supplied by the student's family; uniforms, to the extent that their use adds to the total clothing budget; ad hoc contributions requested or required of parents during the school year; and, in some cases, transportation. One study showed that these costs for students in poorer parts of La Paz average \$ 12.40 per year for primary students and \$ 18.30 per year for middle level students. The corresponding costs in other parts of the country are probably lower.

Opportunity costs reflect the use of time for education that could have been put to other gainful purposes. At the primary level, the opportunity cost varies with the location of the student, the nature of his family's work, and

the time of the year. Where gainful shepherding and farm activities are available to the student, to attend school may reduce potential family income. Growing seasons vary greatly in Bolivia but there is a uniform, nation-wide school calendar that is especially burdensome to rural families because the labor constraint is most important at planting and harvesting time. One important step which could be taken to alleviate this situation would be to decentralize decision making on the school calendar to the local level and only require that a certain number of school days be provided each year without specifying the dates. This action would go far toward reducing this regressive cost of education.

It is also known that private school attendance is heavily weighted in favor of children from higher income families. Table I- 15 indicates that one quarter of families in higher occupational groupings have their children in private schools. Although the institutional expenditures per pupil are of the same order in both the public and private school system, the relative segregation of socially advantaged pupils in private schools generates a higher level of achievement among higher income pupils than in the rest of the population. For example, for urban students, those finishing primary in 1968 in private schools were 57% of the number who began in 1963 while the comparable figure was only 48% for public school students.

TABLE I- 15 Accredited Private School Enrollment By Socio-economic Class (Percentages)

Socio-economic class	Families with children in private schools; Percentage of total each class.	Active population Percentage in each class.
	(1)	(2)
I	22.7	3.5
II	30.7	4.1
III	28.2	10.7
IV	<u>18.4</u>	<u>81.7</u>
	100.0	100.0

*Socio economic categories determined by occupation, from I (Business managers and first-level professionals) to IV (manual workers, small farmers.

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domestic personnel and unemployed)

Source: (1) Families Comisión Episcopal de Educación
La Educación Privada en Bolivia. Visión
General de su Economía. La Paz, p. 25

(2) Active Population Ministerio de Planificación y Coordinación,
Estrategia Socio-Economica del Desarrollo
Nacional, Vol. II, p. 567

Little is known about the relationship in Bolivia between education and income distribution. Some tentative relationships were noted above in the discussion of employment and education. Evidence also exists that per capita income is eight times higher for the urban population than for the rural population. School attendance and achievement are, of course, much higher in urban areas than in rural areas. Extensive international data demonstrate a strong positive correlation between higher general level of education in the population as a whole and higher gross domestic product, as well as a positive correlation between the education of individuals and their incomes. A similar correlation between higher average national education levels and more equal income distribution has not been demonstrated. Thus, while it is clear that the more education an individual has, the higher his expected income, and this is also true for a society as a whole, it is not clear that more education nationally has any significant impact on relative incomes.

PART II HISTORICAL DEVELOPMENT OF THE EDUCATIONAL SYSTEM

A. Pre-Hispanic Period

During the pre-Inca and Inca periods, in the Andean region which includes what is now Bolivia, education followed rigid social class lines. The establishment of the first school for nobles in Cuzco is attributed to the Inca Roca. In describing this school, the historian Garcilazo, reports that: "The amautas taught the nobles so that they could speak with elegance and ornament, could raise their children and govern their homes well." He also affirmed that it was not lawful to teach the sciences to children of the common people as that knowledge belonged to the wealthy men; if the common people learned such things they might rise and become haughty, and deteriorate and weaken the republic.

The learning of manual arts was reserved for the common people. The founding group of the Inca Empire taught appropriate crafts to the respective sexes, as well as high standards of practical morality. Established social greetings of that era were "Ama llulla" (Don't be a liar), "ama kella" (don't be lazy) "ama sua" (don't be a thief). Inca rule combined absolute authority in matters fundamental to its own preservation, and to the well being of the ruling group, with a significant measure of local autonomy and adjustment to local practices where nothing vital was at stake. The Inca tried to introduce the Quechua language throughout their territory. The existence of Quechua as the most widely spoken Indian language in Bolivia today is a tribute to their success.

B. Spanish Colonial Era

Educational institutions of the Spanish colonial era were under the direction of the Roman Catholic Church. Following the philosophy of Aristotle and St. Thoman Aquinas, the primary and secondary schools, established by Catholic teaching orders, mainly Jesuits, dedicated themselves to the education of a colonial elite, loyal to the Church and to the interests of the Spanish crown. Theology and moral instruction were the mainstays of the curricula, although philosophy, arts and languages were also taught. Private tutors or priests educated the children of many of the families of the ruling elite. However, both private and public instruction were accessible to men only. Education for women was considered dangerous and immoral since it tended to distract them from religious and domestic duties.

The Spanish Government favored the education of Indians as a means of disposing them favorably toward Catholicism and Spanish rule. Royal decrees of the eighteenth century urged that educational efforts be directed mainly at the male children of tribal leaders. The decrees exhorted colonial governments to establish schools for these children in order that they "may be throughly groned in our Catholic faith, in Spanish customs, politics, government and, in the Spanish language. . ." and thus become "better Christians, better taught. . (and) more friendly disposed towards - us. ." In fact, however, the education of Indians and cholos during the colonial era was limited to religious indoctrination and to apprenticeship instruction in certain crafts and occupations. Such instruction was given in convents monasteries and missions established for the specific purpose of converting Indians. Many Indians attending these institutions acquired a rudimentary knowledge of Spanish, since all of the priests and nuns spoke the Aymara or Quechua languages.

The most influential educational institution of colonial times, and the only university founded during that era, was the Royal and Pontifical University of Saint Francis Xavier of Chuquisaca (Universidad Mayor Real y Pontificia de San Francisco Xavier de Chuquisaca - now Sucre). Founded in 1623 by papal bull, San Francisco is one of the three oldest universities in Latin America. It was under the direction of the Jesuits until 1767, when that order was expelled from the colonies by royal decree. A leading center of higher education for the sons of the colonial elite, San Francisco attained particular importance after the foundation of its graduate academy of law, the Real Academia Carolina, in 1776. It was in the course of legal discussions at the Academia that graduate students and professors first questioned the sanctity of Spanish rule. Some of the arguments advocating independence from Spain were derived from the ideology of the French and American revolutions, but most of them were based on St. Tomas Aquinas' tenets on the justified deposition of the inept temporal ruler. Some leaders of these discussions were later at the helm of the movement for national independence.

C. Beginnings of Public Education

After independence was achieved in 1825, public education passed into the hands of the government. Under the influence of French enlightenment, both Simón Bolívar and José Antonio de Sucre stressed governmental responsibility in establishing and managing public education. Decrees issued under the administration of marshal Sucre (1827-29) called for the founding of primary, secondary and vocational schools in the capitals of all Departments. These decrees served as a basis for the law of January 9, 1827 which establish

D. - The Educational Law of 1872

The question whether public education was to function under the central control of the government or under the auspices of local councils was subject to much political debate throughout the last decades of the nineteenth century. The decentralizing trend was considered to be more in keeping with the principle of "freedom of instruction" which was proclaimed in the Educational Law of 1872. In accordance with the Law, departmental councils of education were charged with the financing of public elementary schools and with the supervision of every type of school, including the universities. The Law also called for public secondary schools in the capital cities of De partments, although secondary and higher education was declared to be the responsibility of private individuals and of the Catholic Church. A school of arts and a school of medicine were established, however, by the Central government. The same Law made public elementary instruction free and compulsory, although political and economic conditions and oligarchic social traditions prevented its implementation except on a minimal basis.

In 1877, as a result of shifting political forces, education was again placed under the central control of the Ministry of Public Instruction, although the principle of freedom of instruction was reiterated and the right to establish private educational institutions was recognized as long as these institutions conformed to "conditions of morality" and to constitutional qualifications.

In 1909 the first normal school was opened in Sucre, under the direction of a Belgian mission of educators invited by President Ismael Montes (1904 -09). Headed by Dr. George Rouma, the mission's main objective was to familiarize future teachers with modern teaching methods. The mission also proposed the introduction of vocational, notably agricultural, subjects in to the public school curriculum.

The influence of the Roman Catholic Church asserted itself through compulsory instruction in that faith in all schools. In an effort to challenge the Catholic influence in education, the Minister of Public Instruction in 1912 replaced the teaching of the Catholic faith with classes in nondenominational moral instruction. Because of vigorous public protest, however, the decision was modified to permit schools to offer Catholic religious instruction for 2 hours twice a week to children whose parents requested it. In 1942 Catholic doctrine again was offered as a part of the regular curriculum.

ed the general structural organization of public education. In addition to elementary schools, it called for special schools to teach vocational skills, including mining and agricultural occupations. Secondary schools were considered exclusively as university preparatory institutions, offering a curriculum of languages, history and science. Under Marshal Sucre, the need for vocational as well as academic education, for the first time, was recognized by the government. However, the decrees calling for the establishment of vocational schools were not implemented, and governmental concern with vocational and agricultural training was not revived until the 1950's.

Because of military coups and nearly constant political unrest under the successors of Marshal Sucre, progress in public education during the remainder of the century was sporadic in nature and negligible in scope. Whatever physical expansion took place in the network of schools benefited only the children of the urban upper class. Virtually the entire indigenous population was excluded from even the most rudimentary aspects of primary education. In the urban primary and secondary schools, antiquated teaching methods and highly abstract curricula prevailed. Some teachers and intellectuals proposed educational reforms based on modern concepts of pedagogy. The implementation of these proposals, however, was sporadic because of the lack of qualified teachers. The Roman Catholic Church, moreover, favored the retention of an abstract, classical curriculum and the disciplinarian approach to instruction in the private schools under its control.

Because the founding and development of institutions of higher learning enhanced national prestige as well as the personal renown of heads of state, most of the educational progress tended to limit itself to the University level. General Santa Cruz founded San Andres University in La Paz in 1830. The universities of San Simón in Cochabamba and Gabriel René Moreno in Santa Cruz were established in 1832 and 1880, respectively. The university of Tarija, "Juan Misael Saracho," was founded in 1886. The Technical University of Oruro and Tomas Frías Autonomous University in Potosi were both opened in 1892.

In 1839 the Ministry of Public Instruction was organized, and in 1845 the Organic Decree of Universities was promulgated by the Minister of Public Instruction, Tomas Frías. In addition to regulating the internal organization and curricula of the respective faculties and specifying degree requirements, the Organic Decree established some of the fundamental rules of university autonomy which are still being followed.

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E. Reforms of the 1930's

In 1930 a reform of the administrative apparatus of public education was undertaken to reduce the influence of political appointees. The quasi - autonomous National Council of Education was created to direct all public schools, supervise private ones, appoint teachers and determine their eligibility. The Council also managed educational funds and drafted annual budget proposals for public education. However, because the approval and allocation of these funds remained the responsibility of the Ministry of Public Instruction and of the central government, the Council failed to lessen the dependence of educational progress on politics.

In 1931 the first school for Indians was established in Warisata, near Lake Titicaca. Based on the traditional social organization of the Indian community, one center (núcleo) controlled several smaller school units in the remote villages. Physical facilities were constructed by community labor and material. This pattern of rural schools (núcleos escolares) was later adopted by Perú, Ecuador and Honduras. Although other núcleos were not established until the late 1940's, Bolivians take considerable pride in being the first to introduce this system of rural education in Latin America.

Following the subsequent establishment of a rural teacher training school at Warisata, fourteen other rural normal schools were organized in different parts of the country. Graduates of these schools staff rural primary schools throughout the Republic and have been influential in up grading the programs of study. Many rural schools are staffed by non-certified teachers, i. e. those who have not graduated from the rural normal schools.

In 1936 compulsory school attendance was ordered for rural children to attend schools which landlords were to provide. In 1938 compulsory school attendance was extended to the age of 14. The effect of these requirements, however, have been minimal in the absence of adequate school facilities and strong community support for the need for universal education.

Night schools were created for laborers and children of Chaco war veterans in 1936. In the same year, school "District" offices were organized for Potosí, Oruro and Santa Cruz. A Supreme Decree of November 2, 1936, called for the transfer of municipal schools to the Ministry of Education. On November 11 of the same year, the regulations of rural education were established, creating a Director General's Office to organize and conduct this section of national education.

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The section of Rural Affairs was created in the Ministry of Education in early 1937, with the mission of assuming protection of the rural dweller, studying his conditions of existence and suggesting to the government measures oriented to improve his situation. Military schooling, which in the past was limited to that provided by the National Military School (founded April 18, 1891), was increased with the organization of the Police Academy and the Military and Aviation Schools in 1937.

A system of "Unified Schools", making national education dependent on one single authority, was decreed in 1939. The same decree also introduced civics into the school curriculum, provided standards for student and teacher conduct, and established standardized examinations.

In 1943, the National Industrial School, designed to train skilled laborers, was founded in La Paz. Previously, the establishment of arts and crafts schools had been in the hands of people interested in social work, as well as religious orders, among which the Salesian Order of Don Bosco was a leader. Notwithstanding the efforts that have been made in vocational education, the problem of orienting this training to the true needs of the country persists today.

F. Post-1952 Revolution Developments

The period of government corresponding to 1952-1964 was one of strong impulse in education. Preference was given to the construction of rural schools and literacy centers in the cities. The government of Dr. Victor Paz Estensoro named a commission, made up of intellectuals and teachers, to prepare an Education Code which was published on January 20, 1955. This Code organized Bolivian education into various programs and cycles under the control of the Ministry of Education. It also spelled out teaching standards and salary systems, and it permitted the establishment of teacher unions. A series of more recent laws have added to the Education Code, culminating with the most recent Law of Bolivian Education (Supreme Decree 10704), February 2, 1973.

School enrollments expanded rapidly during the 1960's, as may be seen in the following Table.

TABLE II - 1 Trends in School Enrollments, Public and Private, Urban and Rural 1962-1970 (in thousands of students)

	<u>1962</u>	<u>1966</u>	<u>1970</u>
Total Students	559	702	881
Public Schools			
Urban	241	306	397
Rural	175	221	280
Private Schools			
Urban	108	130	147
Rural	35	45	57

Source: Bolivia en Cifras 1972.

Two new universities have been created in recent years: The Catholic University in La Paz in 1966, and the Technical University "Jose Ballivian" in Trinidad, in the northern department of the Beni, in 1968.

The continuing problem of school construction became so acute in 1970 that a special 1% tax on salaries was imposed for school construction. A decentralized agency, the National School Building Council (CONES) was established to administer these funds and to regulate school construction throughout the country, with emphasis on urban school needs.

G. Summary

The history of Bolivian education is a story of varying trends and emphases. The need for greater decentralization and for stronger rural and vocational education have been recurring themes. The educational Law of 1872 the Reforms of the 1930's and the 1952 Revolution have all stressed these points.

All recent Laws and constitutions have emphasized the universal right to access to education and the importance of education as a state function. However, the countervailing forces, favoring central control and opportunities limited to a small leadership group, can be seen to have their roots in the Spanish colonial tradition and the earlier Inca social and political institutions. In the 1970's the idea that education shall be free, compulsory and universal remains an unfulfilled aspiration for Bolivia.

PART III PRESENT STRUCTURE OF THE EDUCATIONAL SYSTEM

A. The Formal Educational System

1. - Introduction

The Ministry of Education and Culture is given responsibility "for the formulation, direction and execution of the educational policy of the country" and for "the promotion, administration and supervision of a unified and democratic" educational system, pursuant to the Law of Administrative Organization of the Executive Power (D.L. No. 10460) of September 12, 1972. The Ministry's authority extends to all primary and secondary education in Bolivia.

Below are data on the total number of primary and secondary schools for 1970. The data have not changed significantly in the past four years.

TABLE III - 1 Number of Schools, 1970

	<u>Public</u>	<u>Private</u>	<u>Total</u>
Pre-Primary and Primary			
Urban	1,078	389	1,467
Rural	5,596	1,717	7,313
Secondary			
Urban	233	135	368
Rural	41	2	43

Source: Bolivia en Cifras, 1972

Primary and secondary school enrollments in 1970 totalled 881,359. Of these, three-quarters were enrolled in public schools, one quarter in private schools. Sixty percent were in urban schools, and forty percent in rural schools. These data are presented in the following table.

TABLE III - 2 School Enrollment, 1970

	<u>Public</u>	<u>Private</u>	<u>Total</u>
Urban	<u>396,970</u>	<u>146,807</u>	<u>543,777</u>
Pre-Primary	18,561	9,365	27,926
Secondary	307,050	103,466	410,516
Girls' Professional	49,968	24,001	73,969
Commercial	1,882	496	2,378
Industrial/Vocational	1,925	1,602	3,527
Normal	901	1,852	2,753
Adult Literacy	5,933	701	6,643
Art and Music	9,594	5,324	14,918
	1,156	0	1,156
Rural	<u>280,119</u>	<u>57,463</u>	<u>337,582</u>
Pre-Primary	34,118	7,108	41,226
Primary	240,467	50,109	290,576
Secondary	1,178	197	1,375
Normal	4,356	49	4,405

Source: Bolivia en Cifras, 1972

Of the total school age population between 6 and 12 years, it is estimated that 66% are enrolled in school. For rural areas, however this estimate is only 42% and this varies widely by regions within the country. For the Department of Potosí, for example, only 30% of the rural school age population are estimated to be enrolled, while in Santa Cruz, the estimate is that 78% of the rural children are enrolled. Due to the lack of a national census since 1950, however, all of these estimates must be considered highly tentative.

2. - The Ministry of Education

The 1955 Code of Education separated responsibility for urban and rural education, respectively, between the Ministry of Education and the Ministry of Rural Affairs. This split in the structure of education was supported by the philosophy of the 1952 Revolution, and was intended to permit more emphasis on development in the rural, Indian areas. During the following years, in fact, there was a major effort to expand educational opportunities in rural areas. Nevertheless, the operation of two separate school systems created major administrative problems. In 1970, they were both assigned to the Ministry of Education. Their programs and administrative structure, however, have remained separate. As will be noted on the accompanying organization chart (Table III-3), the Ministry

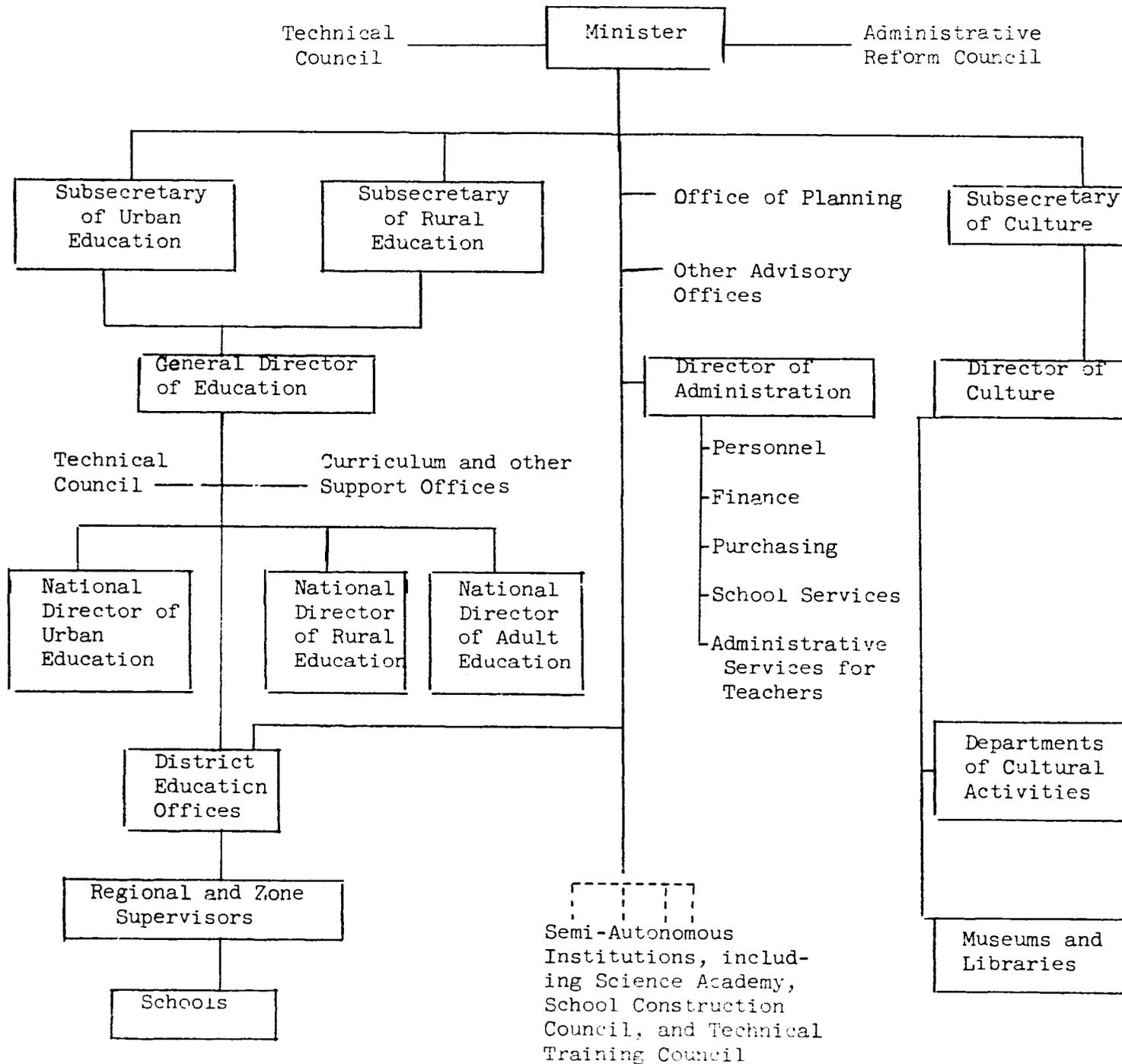


TABLE III - 3 - Organization of the Ministry of Education and Culture

today has two Sub-secretaries, one for urban education and one for rural education and, similarly, two national educational directors. In the field (district) Offices, the two systems have remained largely separate; Urban District Directors supervise urban schools and Rural District Directors supervise rural schools.

In the National Budget for 1973, the Ministry is allocated 5,015 administrative positions in addition to 36,569 teaching positions.

In 1970 there were 27,484 public school teachers in the categories indicated on the following Table.

TABLE III - 4 - Public School Teachers, 1970

	<u>Urban</u>	<u>Rural</u>
Pre - Primary and Primary	13,033	9,712
General Secondary	3,289	73
Normal Schools	187	252
Other Secondary	386	0
Literacy	<u>552</u>	<u>0</u>
Totals	17,447	10,037

Source: Bolivia en Cifras, 1972

The total budget of the Ministry for 1973 is given below.

TABLE III - 5 - Ministry of Education and Culture Budget 1973, US\$ equivalent.

	<u>1973</u>	<u>%</u>
Personal Services	\$ 32,480,000	91.0
Non-personal Services (Rent, transportation, etc)	265,000	.7
Materials and Supplies	50,000	.2
Fixed Assets	35,000	.1
Reserves	10,000	.0
Transfers (Scholarship and contribution to Universities)	3,050,000	8.0
	<u>\$ 35,690,000</u>	<u>100.0%</u>

Source: Presupuesto General del Sector Público, 1973 - Vol. 1 Administración General.

Reflecting sharply increased costs and inflation, the Ministry's budget for 1974 is the equivalent of US\$ 66.1 million.

The central administration of the Ministry includes the office of the Minister and his three Sub-secretaries for Urban Education, Rural Education and Culture. In addition, it includes an Administrative Reform Council, advisory offices, a planning office and the Administrative Directorate. These units are responsible for policy making and overall management of the educational system.

The second echelon of the Ministry attends to the general administration of the school system, headed by the General Director of Education, who is assisted by a Director of Urban Education, a Director of Rural Education and a Director of Adult Education and Literacy. The General Director also supervises offices assigned to the various educational specialties and programs, such as curriculum revision, textbook preparation, and student orientation.

For purposes of local administration, and implementation, the school system is divided into districts. There are nine urban and nine rural school districts, each headed by a district director. Each director is charged with supervising the educational program in his district. These urban and rural district offices are located in each of the nine Departmental capitals. In addition, six urban and seventeen rural regional supervisory units are placed in the larger urban provincial centers or in small but relatively accessible rural centers.

The urban district directors supervise primary and secondary schools in the Departmental and some urban provincial capitals. Private urban schools report to these directors but in quite nominal fashion. The rural district directors are responsible for all public school programs outside the Departmental and provincial capitals. Rural private schools, usually small community or missionary run centers, frequently have no formal connection to any district office.

In an urban district office, the director is assisted by a group of district supervisors. There is a supervisor for each of the major educational activities, i. e., pre-primary, primary and secondary. Supervisors are not subject matter specialists and their work is administrative rather than supervisory. District supervisors are expected, however, to work closely with school directors and teachers on instructional problems.

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The rural district director is also assisted by a team of officers. In rural education these officers are referred to as supervisors. Rural district supervisors are assigned administrative responsibility according to zones. Each district may have as many as eight supervisors for eight administrative zones. These supervisors usually speak the local Indian Language and identify well with the campesino.

Each rural supervisor supervises the school directors in his zone. The zone is divided into school nuclei; each nucleus consists of a central school offering a six year program, and fifteen to twenty sectional schools whose students advance to the central school after the third or fourth grade. The sectional schools are typically small, one room, one teacher schools.

3. - Other Government School Systems

Under the Education Code of 1955, the major state enterprises for mining and petroleum (COMIBOL and YPFB) are obligated to provide basic educational services to the dependents of their employees. The COMIBOL schools now have 52,000 students and the YPFB schools have 5,500 students. While these schools are under the nominal control of the Ministry of Education, the schools are operated and managed by the state enterprises themselves. They include pre-primary, primary, secondary, vocational and adult literacy programs.

In addition, there are many specialized formal educational programs operated by various Ministries of the government. For example: the Ministry of Defense operates service academies and a military preparatory school; the Ministry of Health, a nursing school; the Ministry of Interior, a police academy; and the National Council of Minors, specialized schools for handicapped children.

4. - School Construction

Within the Ministry of Urban Affairs and Housing, there is a National development Group (GND) for School Construction. The GND is an investigation and planning unit for school construction. It gathers information on school building needs and seeks to plan and coordinate various school construction programs. Its Executive Committee includes the Director of Educational Planning of the Ministry of Education, the National Planning (CONEPLAN) Secretariat educational representative, the General Director of Architecture of the Ministry of Urban Affairs and Housing, and the Executive Director of the National School Construction Council (CONES).

For the construction of urban schools, the principal agency is this National School Construction Council (CONES). Created in 1971, it receives an ear-marked 1% tax on salaries for the financing of school construction. In 1973 this tax produced \$b. 16.9 million pesos (US\$ 845,000) In its first three years of operation CONES constructed 42 urban schools, and at the end of 1973 it had 15 more under construction and 7 for which contract bids were being sought. In total these 64 schools have 1,107 rooms which will house over 44,000 students. The total cost is estimated at \$b. 69.3 million pesos (US\$ 3.45 million).

Rural schools are constructed by several agencies as well as by the communities themselves. The National Community Development Service is one of the principal agencies. In 1971 it helped rural community groups construct approximately 300 school buildings. About 70% of these were primary schools, the remainder were secondary schools. The completed schools are staffed by the Ministry of Education but are maintained primarily by the communities themselves. The Civic Action program of the Ministry of Defense also helps rural communities build schools. In 1971 about 70 rural schools were built under this program. \$b. 3.4 million pesos (US\$ 170,000) was budgeted by the Ministry of Defense in 1973 for this program. The Departmental Prefecturas and the Municipalities also participate in school construction, specially in the rural areas. The Catholic Church's program Faith and Happiness supports community self-help school construction activities. During the 1966-71 period 151 schools in rural areas, and in poorer urban fringe areas, were constructed with their assistance. All of these schools become the responsibility of the Ministry of Education to staff and to operate.

A professional survey of the condition of the 5,082 public school buildings in 1968 revealed that 21 were considered to be in good condition, 1,616 were in acceptable condition, 2,983 needed major repairs and renovation and 461 should be abandoned. ^{1/} Thus, at that time, 9% of the total school buildings were considered inadequate for school use and did not justify the expenditure of funds to correct their deficiencies. It is interesting to note that for the urban schools the percentage which were considered unsuitable for continued use was 22%. This situation, in general terms, continues to exist today.

5. - Private Schools

One third of urban primary students and one-fifth of rural primary students attend private schools. At the secondary level the proportion continues at one fifth for the insignificant number of rural secondary stu -

^{1/} William D. McClurkin, School Building in Bolivia - USAID, La Paz-1970

dents, but rises to one - third of urban secondary students. These schools are operated by the Catholic Church, various other churches, and by some non-church related private groups. In the principal cities, a few are sponsored by the foreign community.

In 1970 there were 204,270 private school students (146,807 in 612 urban schools and 57,463 in 1,721 rural schools at the primary and secondary level). There were 5,365 teachers in these schools distributed as shown in this Table.

TABLE III - 6 Private School Teachers, 1970

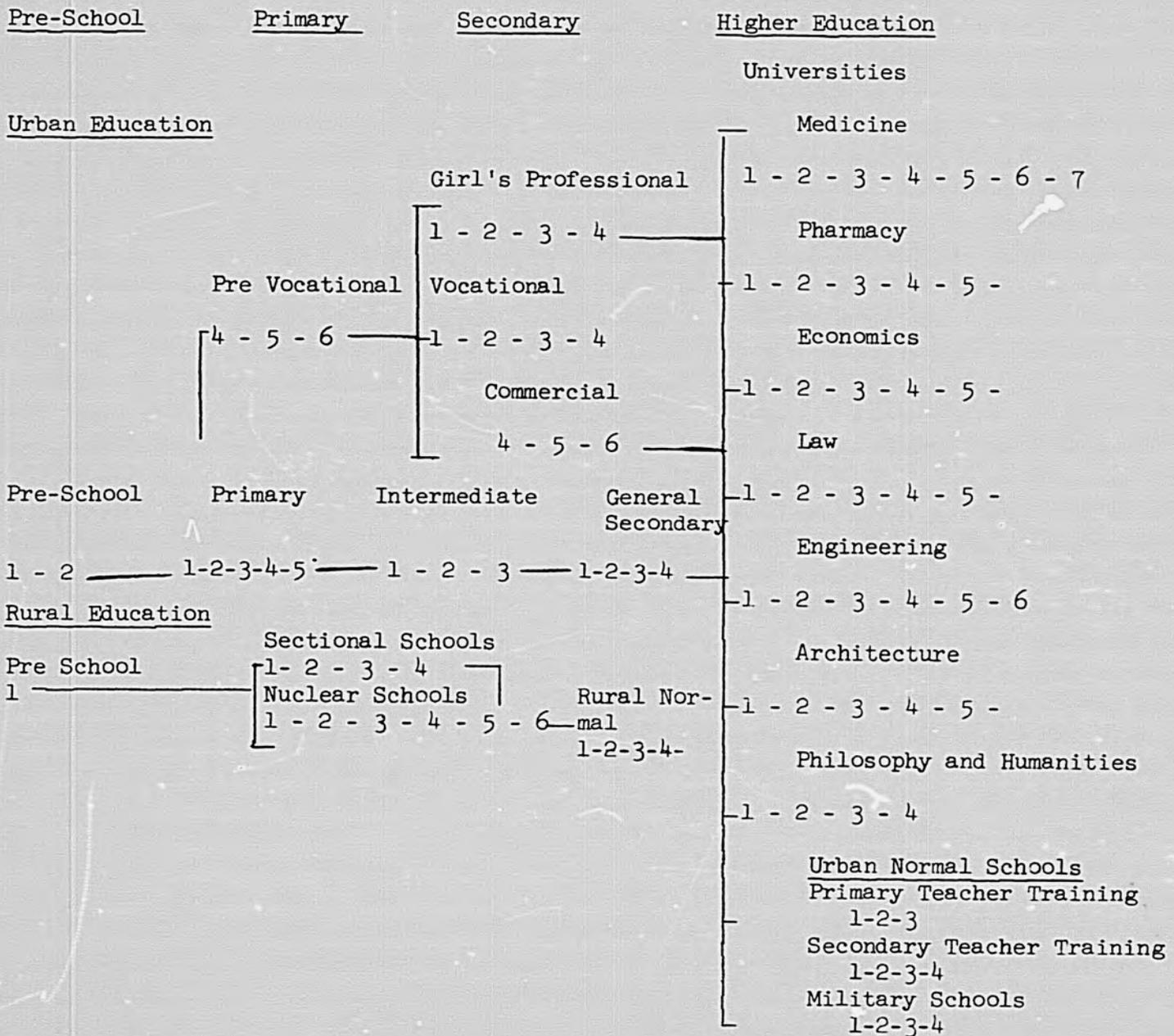
Pre-Primary	2,286	1,615
General Secondary	836	10
Normal Schools	43	15
Other Secondary	529	0
Literacy	31	0
Total	<u>3,725</u>	<u>1,640</u>

Source: Bolivia en Cifras, 1972

6. - Higher Education

At the level of post-secondary education in Bolivia, there are six urban normal schools (five public and one private), one urban post-normal and one rural post-normal school, eight public universities, one Catholic university, and the police and military academies. The public universities are located in eight of the nine Departmental capitals of the country. The first of these was established in Sucre in 1624 and the most recent in Trinidad in 1967. During the 1960's university enrollments more than doubled from 10,000 to over 20,000. Almost half of all current university enrollments are in the fields of law, economics and medicine. Few university programs are related to agriculture and other applied science fields.

In the past two years a university reform program has been initiated. It seeks to integrate the system of public universities, to avoid unnecessary duplication of faculties and programs, and to improve internal planning and administration. A national Council on Higher Education (CNES) has been created to oversee this effort. Although it is meeting resistance from some of the individual universities, this Council appears to have made some progress in rationalizing the university system and in strengthening its administration.



7. - Inter-relationships between the Formal Education Programs
 The accompanying Table III-7 shows the relationship between the formal education programs in Bolivia at various levels.

TABLE III - 7 SYSTEM OF FORMAL EDUCATION IN BOLIVIA

The Table shows the ways in which students may move from one part of the educational system in another. The principal routes for the movement of students are shown as black lines. Minor, alternative routes which may exist are not shown. It is evident that many programs either do not permit access to any further education or, at best, permit access to only a specific and limited number of further educational programs. Compared to schooling systems of many other countries, the Bolivian system is relatively rigid and inflexible. Children who fail to follow the academic track, or fail to find access to general secondary education, are effectively excluded in almost all cases from changing programs or from entering into higher education. As can be seen from the Table, this is a major problem in rural education.

B. Non-Formal Educational Activities

1. - Introduction

For purposes of this assessment, non-formal education is defined as all of those activities, outside of the normal expectation of the function of the formal educational system, which enable people to develop skills or expand their knowledge of the world around them. The broadest form of non-formal education takes place within the family as children learn social and productive roles from their peer groups have an equally pervasive influence on their development. It can be said that even for some of those who go through the formal educational influences may be of equal or greater impact on their development as individuals within society.

2. - Radio

The non-formal educational influence which probably reaches more people than any other in Bolivia is radio. There are 99 radio stations in the country, 52 in Departmental capitals and 47 in smaller cities. Of the ten more powerful stations, eight are located in La Paz. Four of these are heard throughout the country.

Virtually all stations broadcast a number of hours each day in the Indian languages and are widely listened to. An analysis of 540 hours of broadcasts reported in the Ministry of Education's Diagnóstico revealed the following break-down in type of programming:

- 35% Music: modern and folkloric
 - 10% Dramatic presentations
 - 10% News and information
- 46

9% Sports
8% Education
28% Other Types of programs.

Ten stations located in the principal cities are linked together in an educational radio system called Escuelas Radiofónicas de Bolivia (ERBOL), subsidized by the Ministry of Education, the Catholic Church and foreign donations. The primary objective of the ERBOL stations is to reach adults in the rural areas with literacy and educational programs. Over 16,000 individuals were registered in 1973 as radio students in the ERBOL programs. Of these, 3,461 were associated with the Radio School "FIDES" of La Paz. Courses were given in elementary and advanced literacy training as well as civic education, community development, health education, and critical analysis. To complement the courses, 190 volunteer teachers held periodic meetings with groups of the radio students to discuss course concepts and to evaluate results.

3. - Other Communication Media

a. Commercial Motion Picture Theaters

Commercial films are a very popular form of entertainment in urban areas of Bolivia. In 1971 over 10 million paid admissions were recorded in the country. This represents an average of once-a-month attendance by the effective movie-going population of Bolivia. The Ministry of Information produces occasional short films shown in the commercial theaters. These films emphasize civic duties and disseminate information about government programs. Commercial films are also produced within the country from time to time. These often treat social issues and are well received.

b. Newspapers

There are thirteen daily newspapers published in Bolivia. Three of these, all published in La Paz, have nation-wide circulation. Each of the three, as part of its regular editions, publishes a weekly educational and literacy supplement. These are widely read.

c. Television

At present, television reaches only the La Paz and Oruro areas. Its use for educational purposes has been considered but not implemented.

4. - Literacy Programs

It is difficult to estimate how many adults in Bolivia are illiterate. According to the 1950 census, 68,9% of those 5 years of age or over, were unable to read or write of those over 15 years of age, the percentage was 67.9%. Since the census criterion of literacy was based on the response to verbal question "Do you know how to read and write?", the percentage probably overstated the real literacy situation.

Many barriers to learning to read and write exist in Bolivia. The everyday use of Quechua and Aymará in many house-holds creates difficulties in learning Spanish. Many schools have a shortage of reading materials for use in the classroom. For these reasons, even of those children who enter school it may take four years to achieve functional literacy. If, as is estimated, only 28% to 30% of the population today completes even four years of schooling, it can be seen that illiteracy will remain a problem in Bolivia for many years to come.

Despite the obvious difficulties of organizing and conducting adult literacy programs in Bolivia, there has been a great deal of interest in these programs for many years. The 1955 Educational Code established a systematic attack on illiteracy as a priority goal. A ten-year literacy campaign was initiated in 1956. A new campaign was inaugurated in 1960 with the assistance of UNESCO. Subsequent national plans have repeated the importance of working to reduce illiteracy. As shown in Table III - 2, nearly 15,000 adults were enrolled in the formal literacy training programs in 1970. The directors of the national literacy program estimate that 116,000 adults achieved basic literacy through these programs in the 1960-69 period. They now estimate that the national illiteracy rate has been brought down to 62%.

In addition to the Government's literacy programs, a wide variety of private, informal programs are directed at this problem. As mentioned above, the ERBOL radio stations participate in this effort. Their literacy programs are of six months duration, broadcast one and one-half hours per day. To supplement the radio listening, classes of 10 to 20 students meet periodically with volunteer literacy assistants.

One of the most innovative literacy programs is operated by the Summer Institute of Linguistics. This international organization emphasizes a bilingual approach in its literacy training for non-Spanish speaking Indians. The basic assumption of the Institute's program is that non-Spanish speaking people can best become literate through two stages:

first becoming literate in their own native language and then advancing to literacy in Spanish as a second language. Having started in 1955, the Institute now has 14 language study centers and a foreign staff of 70 linguists, social workers, and support staff. One of its principal centers, operating in La Paz with a staff of 12, works only in the Aymará language. This center, in operation since 1958, publishes small bi-lingual Aymará-Spanish books for literacy training and significantly for the maintenance of literacy among those who know how to read. Three thousand of these pocket books are published by this center alone each quarter.

The research of the Institute indicates that this method is more rapid and successful than the traditional literacy training which begins immediately in Spanish.

5. - Non-Formal Military Education

In addition to the formal education offered by the military academies for the army, air force and naval forces and the advanced specialized schools for officers, the military establishment provides non-formal education to its soldiers. These programs include training in such skills as truck driving and mechanics, which are of value to the young man after he returns to civilian life, as well as literacy and basic education. Universal conscription reaches about 10,000 lower class boys in Bolivia, each year. For rural youth their 18 month to two year experience in military service is a major educational and nationalizing force. Often, rural youth for the first time become aware of the world beyond their village through their military service.

In addition to the impact on the soldiers themselves, the various types of military Civic Action programs provide a non-formal educational stimulus in the communities where they operate. These include public health information activities, community development and literacy training and school construction. In the 11 years of its existence, the Civic Action program has completed 2,500 construction projects, 1,500 of those being school buildings of various types. The Defense Ministry operates several agricultural experiment stations and developmental projects which serve to disseminate information in these fields. A "Farmers Guide" has been prepared in this program for distribution to small rural farmers. Relatively well organized and administered, the Ministry of Defense and its dependencies have influence in areas of education and development not normally associated with the armed forces of a nation.

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6. - Other Government Programs

a. - Ministry of Campesino Affairs and Agriculture

This Ministry operates a variety of programs which have a non-formal educational impact in the rural areas. The agricultural extension service operates out of Departmental capitals providing training programs in improved agricultural techniques, such as uses of new seeds and fertilizer, credit availability, and livestock information. Several agricultural regions of the country demonstrate new techniques to the farmers. These stations serve as centers for non-formal education and demonstration activities. There are 77 extension agencies and 8 major experimental stations in all, but they employ only 120 technicians, research staff and extension agents. Low budgets and Lack of mobility have consistently hampered the effectiveness of these programs. Despite major obstacles, the extension service in recent years has achieved adoption of improved varieties of potatoes in the Altiplano and Valley regions. It has also introduced new varieties of corn and quinoa, and has promoted the cultivation of wheat, soy beans, garlic, fruit and grapes. Sheep dips have been introduced and the construction of sheep shelters has been encouraged.

The Ministry of Campesino Affairs and Agriculture also supervises the National Community Development Service which has an active program in rural communities throughout the country. Its program purports to be coordinated with the Ministries of Education, Health and Public Works as well as with the Military Civic Action program and the Social Action program of the President's Office. The Community Development Service has 900 multi-purpose community workers who help organize community self-help projects and community demonstration training programs in cooperative development, crafts and skills, health and nutrition. In five training centers, the Service also operates a training program to develop the leadership skills of rural community leaders. In one-to-six month intensive courses, these centers offer training in group dynamics, cooperative management, family life and craft skills. In 1973 over 1,700 rural leaders were trained at the centers.

Another program with non-formal educational aspects, under the sponsorship of the same Ministry, is the National Colonization Institute. This Institute promotes the colonization of farm families in new areas. It has been particularly active in Santa Cruz, where it has helped resettle groups from the highlands. These efforts include the Community Development type of non-formal training for the settlers.

b. - Ministry of Labor

The labor skills training program run by the FOMO (Formación de Mano de Obra) organization is the most prominent non-formal educational program of the Ministry of Labor. Created in 1972, FOMO offers short courses of skills training in three regional training centers (La Paz, Santa Cruz and Potosí) as well as at cooperating factories and other decentralized locations. Its clientele is primarily young adults who have not acquired job skills in the formal educational system. FOMO courses in subjects such as carpentry, brick laying, mechanics, machine operation, electricity and animal husbandry reached 800 workers in 1973. This type of practical training is in great demand and FOMO is expanding its program. In 1974 an anticipated 1,600 workers will participate in their courses.

The Ministry also collaborates with the more formal building trades schools (CENPRITEC) located in La Paz, Santa Cruz and Potosí.

c. - Superior Institute of Public Administration (ISAP)

This decentralized institution of the Planning Secretariat (CONPLAN) provides in-service education and training to government employees, primarily in a variety of management topics. Over 1,000 middle level government workers have attended these courses each year. Priority has been in the past to general administration, financial management, auditing and office management skills.

However, ISAP recently acquired new teaching and library facilities, as well as an increased staff. It gradually is attracting a clientele at the upper ranks of government, expanding the scope and sophistication of its courses and seminars, and initiating efforts in research and publication.

Hence ISAP is assuming the role of a university-level school of public administration, planning, public affairs and policy studies.

d. - Ministry of Health

This Ministry is responsible for community public health training. It sponsors or assists with non-formal health education in disease and epidemic control, in nutrition, occupational health, and in family planning. Through its School of Public Health, the Ministry reaches 200 health workers per year with short courses in environmental sanitation and other public health topics.

Through Seminars for mining supervisors and labor leaders, the Institute of Occupational Health reaches a large share of the mining and industrial workers. The CENAFPA family planning center reaches an estimated 25,000 people per year through its seminars and the Mother's Clubs sponsored by the Ministry reach an equal or larger number with nutritional information. The Ministry also works with the university faculties of medicine in their community health education activities and in strengthening the university programs in these public health areas.

e. - National Council of Minors (CONAME)

This Council is responsible for special education for handicapped children. Its activities are limited to the Departmental capitals due to lack of funds and training facilities. It is estimated that the programs reach an average of 6,000 children. The emphasis is placed on training for the deaf, dumb or retarded and for children with behavior problems.

f. - University Extension Education

In addition to their regular programs, all of the universities carry on a variety of extension and community service activities. The University of San Andres in La Paz organized community service and literacy training. The University of San Simón in Cochabamba has undertaken agricultural experiment and extension work, as has the University in Santa Cruz.

g. - Museums and Libraries

The Ministry of Education (through its Directorate of Culture), municipalities and universities operate museums and libraries in the principal cities and some secondary cities. A few of these are outstanding, such as the Mint (Casa de la Moneda) in Potosí, the Museum and Library (Palacio de la Cultura) in Cochabamba, the University's Colonial Museum in Sucre, and the Tiahuanaco Museum and the National Art Museum in La Paz. Others, such as the Paleontological Museum in Tarija, the Popular Art Museum and the Casa de Murillo in La Paz, could be developed into collections of equal value. Anyone who has visited the new Anthropology Museum in Mexico City will not underestimate the non-formal educational value of such institutions and their potential value for Bolivia. Libraries, although widely distributed in Bolivia, have not as yet developed their non-formal education potential.

7. - Church and Private Social Programs

The Catholic Church is active in both formal and non-formal education throughout Bolivia. In non-formal training, the Church has been particularly effective in the organization of cooperatives. The Maryknoll order has a long history of rural leader training and community development work. The Salesianos have been active in industrial arts and vocational training, formal and non-formal.

The Union of Catholic Administrators (UNIAPAC) provides administrative skill short courses for business managers and for school directors. The international Catholic educational organization, Faith and Happiness, mentioned above in connection with its school construction activities, has other non-formal educational activities that include literacy programs, clubs, libraries and bookstores, plus self-supporting agricultural experiment stations and non-formal farm schools in the Santa Cruz, Beni and Chapare regions.

Protestant groups also have been active in community development activities which have a non-formal educational impact. The Methodists, Mormons and Mennonites have been particularly prominent in these programs.

As illustrative of private social programs, the Foster Parents' Plan may be cited. This organization, supported by donations from the U.S., Canada and Australia, has operated a social service program reaching 4,000 people in Bolivia since 1969. It offers support for needy children and non-formal education to adults in their families. Literacy, health and community development training are offered. For example, in 1973, the Plan provided literacy training for 10 groups of from 25 to 30 adult pupils in each group. Thirty-seven groups are now in operation and, from these, it is anticipated that 1,000 people will attain basic literacy in 1974. Short technical courses are also organized in fields such as carpentry, baking and weaving. Emphasis is placed on the formation of cooperatives to encourage the utilization and exploitation of these skills once they are achieved.

C. - Summary

The formal educational system is heavily weighted toward primary education, with a majority in urban schools. Secondary education with the exception of rural normal schools, is concentrated in urban areas. Academic studies are overwhelmingly followed in contrast to technical or vocational subjects. Five per-cent of the students attend schools run by the state - mining and petroleum enterprises. Private schools serve one-quarter of the students from primarily urban middle class families.

Higher education is expanding rapidly but almost half of the students are enrolled in the traditional fields of law, economics and medicine. As at the lower levels, few university programs are related to agriculture and the applied sciences.

Non-formal education exists in wide variety but has not been adequately inventoried nor systematically utilized. Radio undoubtedly reaches more Bolivians than any other communications media. It's use for educa-tional purposes are appreciated and, on a small scale, are presently being exploited. Other programs exist in literacy, agricultural, industrial and health fields but neither the Ministry of Education Diagnosis nor this Assessment has been able to evaluate their effectiveness.

PART IV - ASSESSMENT OF THE FORMAL EDUCATIONAL SYSTEM

A. Introduction and Summary

The Bolivian education system is typical of many of its counterparts in the developing world. In spite of constitutional and legal provisions making school compulsory up to the eighth grade, the pyramid of enrollments quickly narrows down from the first grade on, with the result that only 57% of the first grade entrants reach the third grade, 30% the sixth and 25% the eighth. The secondary system accepts 23% of the age cohort, and higher education 12%. Tables IV 1 and 2 illustrate these pyramids for urban and rural children.

Most striking is the huge gap in educational opportunities found between urban and rural areas. In the latter, with 70% of the total population, only 40% of first grade entrants reach the third grade, and some 5% continue beyond five years. In effect, secondary or higher education is beyond the reach of rural pupils. In the urban population some 60% continue beyond five years and 44% reach secondary school.

Four different systems share the task of educating Bolivian youth. At the elementary and secondary levels, the major provider is the Ministry of Education, which operates a highly centralized network of public schools in both the urban and rural areas. Two major public corporations, COMIBOL and YPFB, administer their own schools - the so called "decentralized" public sector of education - in areas where their manpower is concentrated. The private sector, dominated by Catholic and lay schools, caters to some 16% of urban pupils at the primary and secondary levels, with special emphasis on secondary schooling. Finally, the public universities (and one small Catholic University) provide higher education, mostly toward academic and higher - professional degrees. Terminal programs at lower levels of higher education are quite limited.

In none of the systems is the quality of education adequate, judged by the schools' inability to bring pupils from one cycle to the next or to provide the labor market with the skills it requires. The reasons for observed shortcomings were explored in detail during the past two years, as part of a major evaluation effort of the planning unit of the Education Ministry. The resulting set of reports, presented as a Diagnosis of Bolivian education, was an important source of documentation for the present assessment. ^{1/} The general conclusions of the Diagnosis are easily summarized.

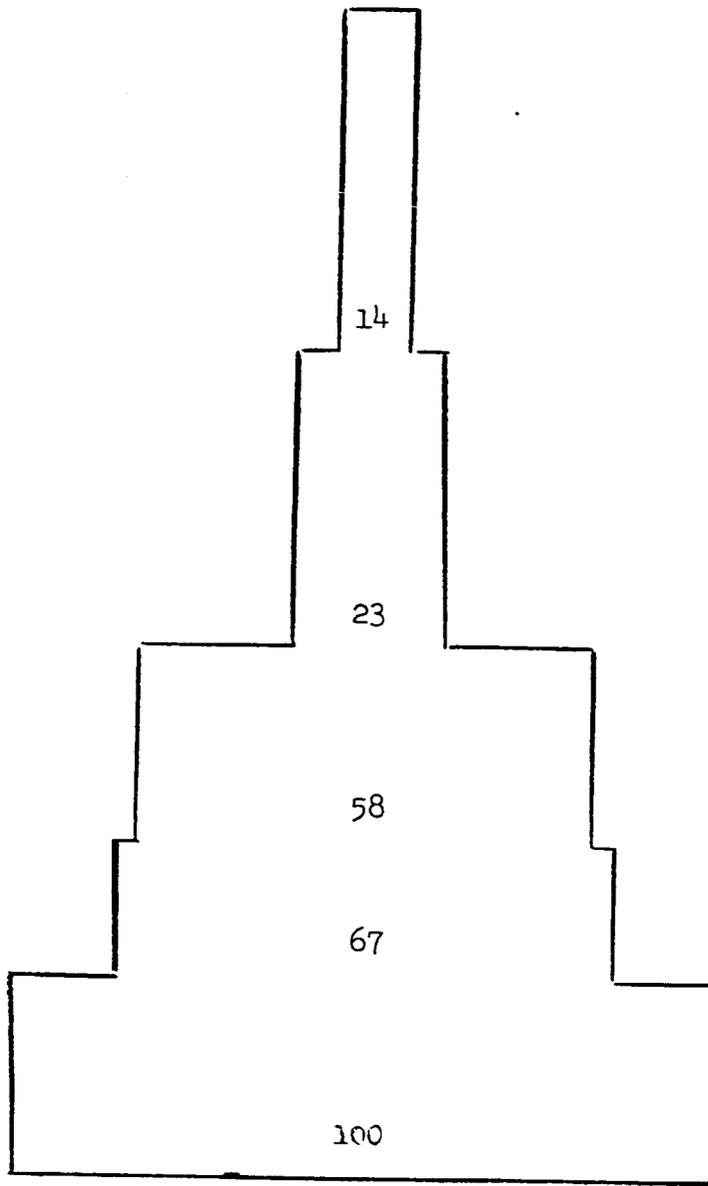
^{1/} Ministerio de Educación y Cultura, Dirección Nal. de Planificación Educativa - Diagnóstico Integral de la Educación, La Paz, 1973-1974.

TABLE IV-1

Entry in 1st, 4th, 9th and 13th year of Schooling

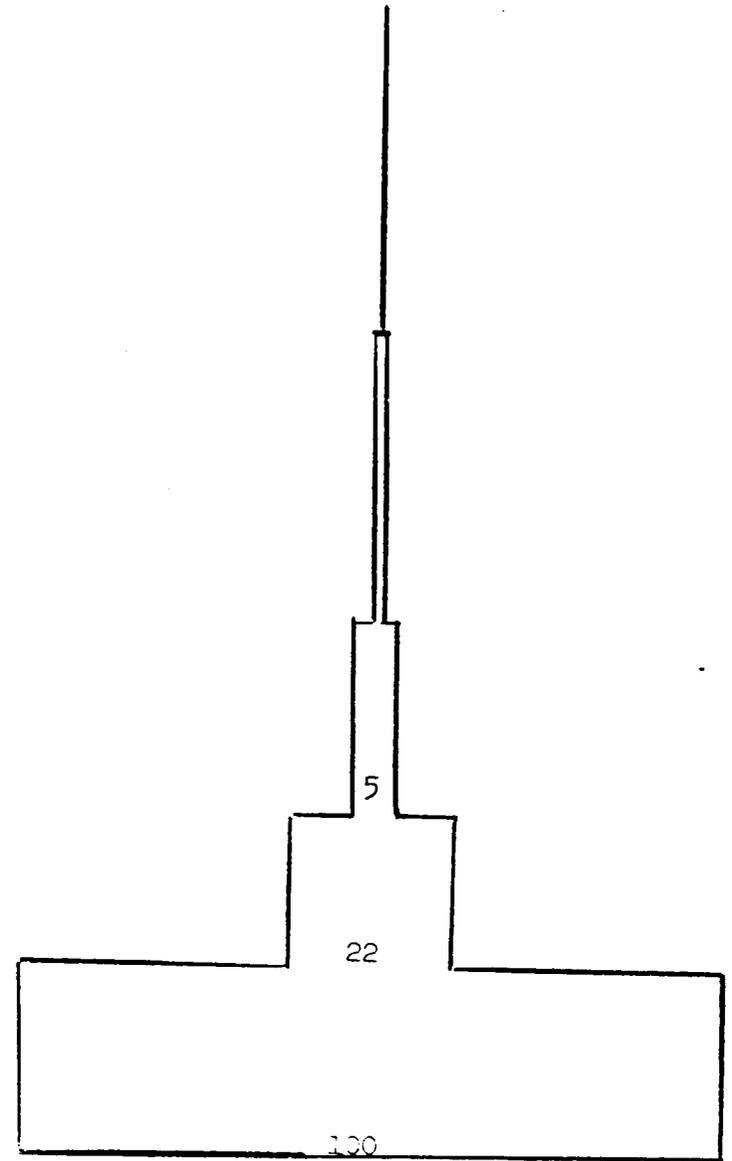
TABLE IV-2

- IV - 2



Urban Cohort (1965-1983)

- 17
- 16
- 15
- 14
- 13
- 12
- 11
- 10
- 9
- 8
- 7
- 6
- 5
- 4
- 3
- 2
- 1



Rural Cohort (1965-1983)

The school system suffers from insufficient resources, an inability to reserve funds for teaching materials and school facilities, inadequate teacher training, overcentralized and inefficient administration, confused objectives, excessive traditionalism, and difficulty in reaching effectively the 80% of rural pupils whose language and culture are separate from the rest of the nation.

The strengths of the system at the Ministry level include a relatively capable planning group which has produced the Diagnosis, upon which this Assessment is largely based, and an administrative reform group which is addressing the managerial problems of public education. The system also receives a large share of the national revenues, indicating a political support for education and for maintaining a large teaching force. Community interest in school construction and maintenance in rural areas is noteworthy. The number of both urban and rural teacher training facilities is also a strength in the system. At the university level, the institutional strengths lie in the Government commitment to university reform. The broad geographical distribution of the university system is another strength.

One major obstacle to reform - besides obvious difficulties in bending traditions and redefining roles in a society where job security must be a prime concern of individuals - is the rigidity of the system by which education budgets are determined. In recent years, the budget of the Education Ministry has been set mostly through adjustments to the "vegetative" growth of Ministry operations, - more specifically, to the growth of the teaching force, expenditures on other items remaining frozen in real terms. Budgets for school construction, and the major part of university budgets, are tied to the revenue of a variety of earmarked taxes, and are thus incapable of responding to changing needs or priorities. Clearly, little can be expected from demonstration efforts toward new forms of resource utilization, unless the financing system is "opened" to required budgetary shifts.

The private system of school education escapes some of these difficulties, but it shares many of them and, in addition, is beyond the reach to the less affluent members of the community. The universities lack resources to support their large and fast growing enrollment; they suffer from maladministration, chaotic internal organization, poor personnel policies, and a lack of responsiveness to national needs. For the last three years, administrative and programmatic control of the universities has been exercised by a central public agency, the National Council on Higher Education (CNES), with results that are both mixed and uncertain.

In the following sections, a more detailed evaluation of the three main cycles of Bolivian formal education is presented under appropriate titles: Elementary Education (Section B); Secondary-level Education (Section C); and Higher Education (Section D). Problems of education financing are discussed next in Section E. Finally, three particular areas of education are given special attention in view of their high rank in the scale of Bolivian priorities: Rural Education, (Section F), Teacher Training (Section G) and Administrative Organization (Section H).

B. Elementary Education

1. - Objetives and Achievements

The quantitative objectives of Bolivian elementary education are inferred to be the provision of eight years of education to all children: Primary education has "obligatory character" under the Bolivian Constitution, and the primary cycle is defined by law as comprising eight "obligatory grades".

Qualitatively, the record is much less clear, although the 1973 Decree regulating Bolivian education specifies such objectives as: the development of habits of hygiene, work study and good behavior, the stimulation of individual aptitudes, the initiation to practices of self-education, the cultivation of patriotism and devotion to work, and the development of manual skills. These objectives (in an earlier version) are rightly characterized as "Lyrical" by the authors of the Diagnosis, and they have not, up to now, been translated into operational criteria for the conduct of education.

The system is falling far short of achievement of its quantitative objectives. As will be seen, a minority of children entering first grade complete the full primary cycle (eight years), and even fewer do so at the ages generally ascribed to the grade levels. In all respects, the situation is far worse in rural than in urban areas. In fact, the semi-independent rural system rarely provides educational opportunity beyond grade six, and is actually split on a 3-3 basis rather than the official pre-primary and 5-3 primary pattern.

In the absence of operational criteria, direct measures of achievement of the qualitative objectives of Bolivian elementary education are beyond the realm of feasibility. Alternative criteria of general validity could be substituted, but the Bolivian record is bare of any systematic testing of pupil achievement. The only method available to compilers of the Diagnosis was the administration of questionnaires to teachers and parents concerning their perception of the system's performance.

In their response school teachers (more than parents) leaned toward the opinion that, besides failing to respond to Bolivian realities, the objectives of education are not adequately met by the present system.

The Diagnosis identifies a number of causes for the low performance of Bolivian elementary education. Some are internal to the system: structural confusion, administrative instability, deficient infrastructure, insufficient professional training of a large percentage of teachers, absence of technical supervision, lack of consistency between plans or programs and educational objectives. Factors external to the system are listed as low interaction between school and community, lack of economic resources on the part of both families and government, low cultural level of the population and prejudicial attitudes rooted in tradition. The Diagnosis also notes, perhaps with not enough emphasis, the fact that policies are totally lacking in support from basic research and analysis, or from any kind of systematic planning in relation to the larger goals of Bolivian education. There is little of significance to add to this evaluation.

2. - Performance of the Elementary System

Available data permit one to judge performance along three main dimensions: (1) Growth of enrollments over time in relation to schoolage population; (2) Average grade completion of school entrants; (3) Social distribution of opportunities for access and grade completion.

a. Profile of enrollments

Between 1965 and 1973, the growth of elementary enrollments has been at an average annual rate of 5.1%, with little difference between urban and rural areas; the annual growth was only 5% up to 1970 and has risen to 5.5% between 1970 and 1973.

Enrollments (grades 1-6) as a percentage of school - age population (age 6-12) grew from 59.8% in 1967 to 66.1% in 1971 a substantial degree of progress in view of the 2% annual increase in school age population during that period. On the other hand, there are strong indications that the school age population is underestimated (the underestimate increasing in time from the 1950 census year), and that enrollment reports are somewhat inflated. This implies that actual enrollment ratios are worse than shown, and that the rate of progress may be slightly less than calculated.

Relevant enrollments figures are reported in Table IV- 3 in terms of the present standard division of five "basic" grades and three "intermediate" grades. The table also shows enrollments in pre-primary education. Enrollments are further subdivided into urban and rural.

Table IV - 3 Primary Enrollments, 1967- 1973

	1965	1967	1970	1971	1972	1973
			<u>Urban</u>			
Pre - primary	21,511	24,131	27,926	28,495	30,780	32,841
Basic (1-5)	257,366	281,388	304,872	315,391	330,759	352,820
Intermediate (6-8)	77,393	89,639	105,679	118,734	122,369	141,067
			<u>Rural</u>			
Pre - primary		35,371	34,118	42,125	44,467	46,405
Basic (1-5)	200,803	191,184	234,710	249,881	260,942	277,279
Intermediate (6-8)	4,580	5,764	5,757	10,768	11,188	12,801
			<u>Total</u>			
Pre - primary		59,502	62,044	70,620	75,247	79,246
	479,680					
Basic (1-5)		472,572	539,582	565,272	591,702	630,099
Intermediate (6-8)	83,973	95,403	111,436	129,503	138,557	153,928
Total	563,653	627,477	713,063	775,395	805,505	863,273

Source: Computed from "Estadística Educativa", 1969 and 1972, and preliminary documents; Dirección de Planeamiento Educativo, Ministry of Education.

b. Average grade completion of school entrants

The history of a recent cohort of entrants into the system (first grade entered in 1965) illustrates the performance of primary education with respect to pupil retention: of a hypothetical 1,000 pupils in grade I, only 248 eventually entered the 8th grade, and of these 226 continued into secondary schooling. Only 703 made it into second grade, and 568 into third grade. The intermediate cycle (beginning with grade 6) only received 304 of the initial 1,000 entrants.

The cohort's history is described in further detail in chart 3 (Table IV-4). The upper line of boxes (diagonal) in the chart shows the number enrolled in each grade through uninterrupted promotion from grade to grade (diagonal arrow). Those not promoted at each stage either drop out (arrow from top right of box) or repeat the grade (arrow from bottom of box). The middle line of boxes shows the numbers enrolled in each grade after repeating one year: The figure in each box (grade) is the sum of first-time repeaters of the grade (arrow to top of box) and of previous-year repeaters promoted to the grade (diagonal arrow to top left of box). As before, those not promoted either drop out (arrow from top right of box) or repeat (arrow from bottom of box). The third line of boxes shows number enrolled after repeating two years and is similarly interpreted.

As the illustrative cohort entered in 1965, the retention rate from grades 1 to 2 reflects conditions of eight years ago, that from grades 2 to 3, conditions of seven years ago, etc. In fact, some definite improvement in school retention is evident over time. Even though the data base is insufficient to compare student flows in two widely separated cohorts, a comparison of retentions by grade between 1967-68 and 1971-72 is illustrative of the progress achieved (see Table IV-5).

CHART

FLOW OF 1000 TYPICAL STUDENTS
THROUGH THE PRIMARY
EDUCATION SYSTEM

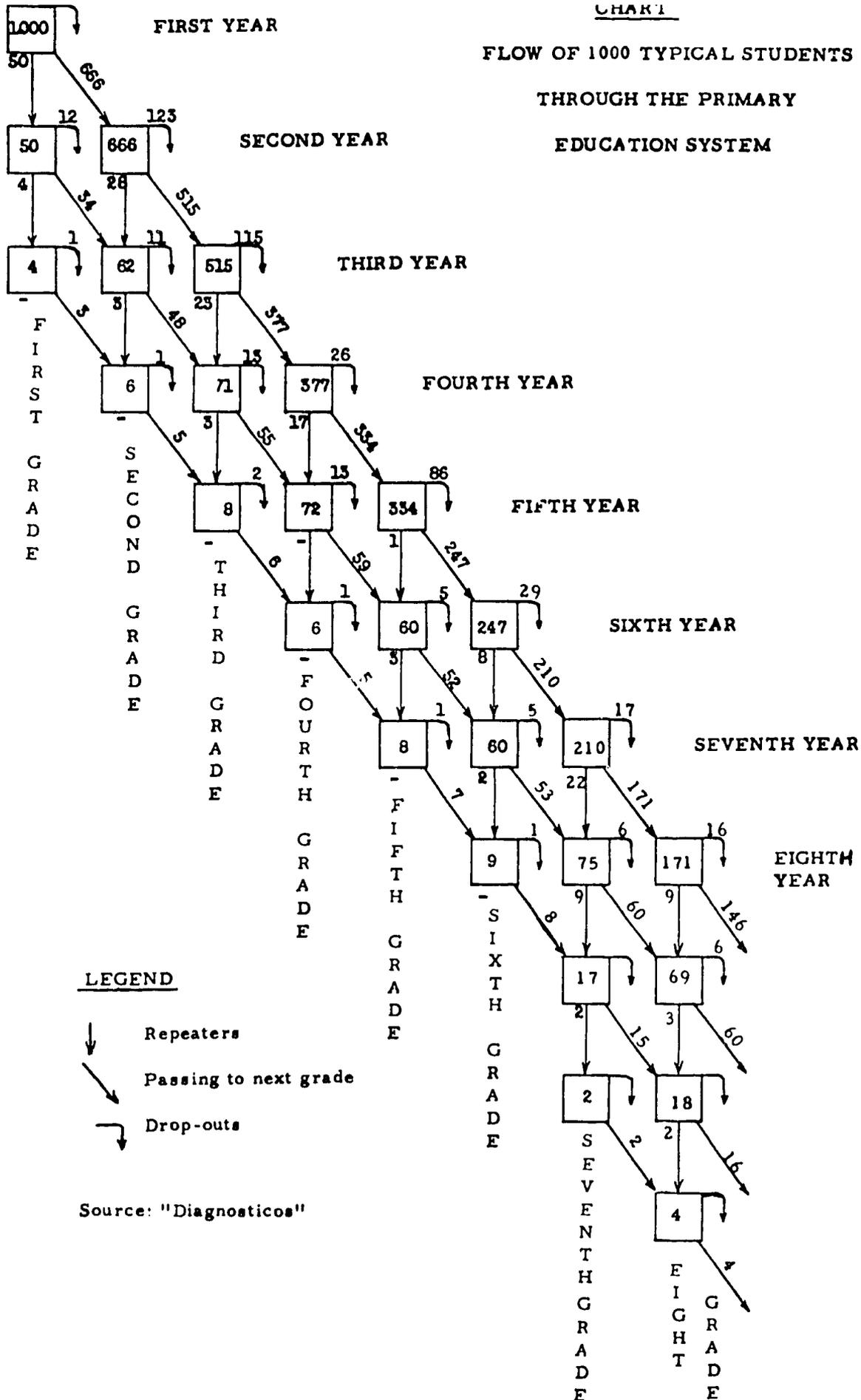


TABLE IV - 5 Percentage retention 1967 and 1972 (first six grades only)

	1967- 68	1971- 72
2nd/ 1st	71.1%	75.0%
3rd/ 2nd	81.6	83.2
4th/ 3rd	76.7	77.0
5th/ 4th	82.1	85.3
6th/ 5th	80.2	87.2

Source: Enrollment data, Estadística Educativa 1972.

Finally, the large number of repeaters, together with the unequal age of entry into first grade, result in a high degree of age variation among pupils at each grade level. The only figures available in this respect are for 1967 and are limited to the rural system. They are shown in Table IV-6.

TABLE IV-6

RURAL ENROLLMENTS BY AGE AND GRADE, 1967

GRADES	A G E O F S T U D E N T S														TOTAL
	5	6	7	8	9	10	11	12	13	14	15	16	17		
1	226	6.363	24.090	20.469	13,063	8.659	4.649	3.229	1.524	841	434	153	43	16	83.759
2	--	72	1.794	9.178	11.109	10.357	7.176	5.739	3.332	1.811	782	269	86	39	51.744
3	--	--	71	1.000	4.174	5.994	5.886	5.729	4.153	2.490	1.286	484	171	75	31.513
4	--	--	1	86	632	2.134	2.657	3.368	2.773	2.025	1.116	455	152	70	15.469
5	--	--	--	1	28	290	1.070	1.813	2.025	1.620	969	537	224	122	8.699
6	--	--	--	--	--	39	175	639	1.004	1.113	917	603	251	179	4.920
TOTAL	226	6.435	25.956	30.734	29.006	27.473	21.613	20.517	14.811	9.900	5.504	2.501	927	501	196.104

Source: Ministry of Education's "Diagnostic" based on data from the Departamento de Estadística de la Dirección de Planificación Educativa.

c. - Social Distribution of Opportunities

Almost all children in urban areas and an unknown, but presumably high percentage of children in rural areas enter first grade at one time or another. The major differences occurring between the two areas, as well as between male and female pupils, have to do with retention and graduation rates. Regional differences are also traceable, independently of regional variations in the rural-urban distribution of population. Available data do not support a comparison of opportunities between pupils of different social classes in urban areas except for those receiving private education. (see 5. d)

The urban-rural gap is best appreciated by comparing charts similar to chart 3, drawn separately for urban and rural cohorts:

- Of 1,000 urban entrants in the first grade (1965) 742 enter the 3rd grade; 653 reach the fifth grade; 578 continue beyond the basic cycle; 489 reach the 8th grade; and 442 continue.

-Of 1,000 rural entrants, only 402 enter the 3rd grade; 160 reach the 5th grade; and no more than 52 continue beyond the basic cycle. For all practical purposes, rural education stops at basic education.

The differences observed are not attributable to lower rates of approval for grade promotion in rural schools ^{1/} but to a higher degree of "voluntary" drop-out of rural pupils, and to the absence of educational offerings beyond the early grades in rural areas.

With respect to age composition, it is found that some 74% of urban pupils are behind in age for their grade (grades 1 through 5), vs 95% of rural pupils. By grade 3, only 45% of urban pupils are more than one year behind but 83% of rural pupils are in that position. In terms of other measures of performance, Table IV-7 shows that, looking only at the basic cycle, rural education "graduates" only 15% of its pupils, vs 63% in urban schools, and that the overall efficiency of the rural system (under the special definition given in the table) is only 26% against 77% for the urban system.

^{1/} Rates of approval are somewhat above 90% in all schools for grade 1 through 4, slightly below 90% in urban schools for grades 4 through 8; they are just over 80% for the small number of rural pupils in the latter grades.

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The same Table discloses that female pupils have a substantially lower rate of graduation than their male counterparts in urban areas, and that they are all but deprived of promotion opportunities in the rural system. This differential is clearly an effect of cultural attitudes, i. e. of a voluntary withdrawal from school, since it is found that rates of approval for promotion to the next grade are identical between the sexes.

Regional differences can also be identified. In order to separate the effect of rural-urban distributions in each Department from that of other regional factors, Table IV-8 below shows enrollments in the age interval 6-12 as a percentage of population age 6-12, separately for urban and rural areas in each Department.

TABLE IV - 7 Basic level, measures of efficiency (cohort entering first-grade in 1965)

	<u>Percent Graduated (1)</u>		<u>Efficiency (2)</u>	
	Urban	Rural	Urban	Rural
TOTAL	63%	14%	77%	26%
MALE	71	20	82	32
FEMALE	56	8	72	17

Source: Calculations based on data provided by the Department of Statistics.

Notes: (1) "Percent graduated" indicates the percent of entering students in the first grade who complete the 5th grade eventually.

(2) "Efficiency" is the ratio of the optimal number of years of instruction per graduate at the basic level (five years) to the actual average, taking into account the instruction given to all students whether they graduate or not. Thus an efficiency of 50% indicates that 10 years of instruction were delivered, on the average, for each graduate of the level.

The above figures are estimated to be accurate to within an error of 10 per cent, or less.

TABLE IV - 8 Enrollment and School - age population 1971

	URBAN			RURAL		
	Population 6-12	Enrollment 6-12	% Enrol.	Population 6-12	Enrollment 6-12	% Enrol.
Chuquisaca	24,000	15,400	64	67,000	22,000	33
La Paz	119,300	124,800	105	170,500	67,900	40
Cochabamba	47,700	61,900	130	105,800	38,400	36
Oruro	29,700	34,200	115	33,100	17,000	51
Potosí	39,800	38,500	97	127,900	39,200	31
Tarija	11,600	12,200	105	27,100	14,600	54
Santa Cruz	39,300	60,700	154	53,200	41,500	78
Beni	20,800	15,500	75	17,700	13,700	77
Pando	700	1,000	143	5,800	2,300	40

Source: Estadística Educativa, 1972.

The common occurrence of enrollments in excess of population in urban areas is explainable in part by the enrollment of "rural" pupils in "urban" schools, in part by underestimates of the schoolage population (all population figures are based on projections from the 1950 census); the possibility of an overreporting of enrollments by schools is officially rejected. Thus, the percentages only have limited validity for inter-regional comparisons. In urban areas, the Departments of Beni and Chuquisaca fare the worst, while Santa Cruz, Cochabamba and Pando greatly over-fulfill their local educational requirements. In rural areas, the picture is uniformly poor, with the exception of Santa Cruz and Beni.

3. - Public (Centralized) Education: Organization, Structure and Resources.

Some 85% of all elementary pupils are enrolled in the public system, administered by the Ministry of Education.

The system includes the near totality of accredited schools in rural areas and 70% of the urban enrollment. Note that additional "public" education is supplied by the so-called decentralized sector, under the auspices of two large public corporations.

The characteristics of the public sector go along way toward explaining the performance of Bolivian elementary education. The system is analyzed below along five main dimensions: organization, structure, resources, costs and efficiency.

a. - Organization

The highly centralized nature of the system and the weakness of its administrative structure are fully discussed in H below. Its most visible outcomes are a rigid distribution of resources among schools and a shortage of central services to schools.

As indicated in Part III, the substantial number of officers assigned by the Ministry of Education to each of the nine urban school districts and nine rural districts perform essentially administrative tasks (information processing and control) and do very little in the way of constructive supervision. Each year, schools receive their centrally-determined share of personnel and school supplies, then manage to the best of their ability after taking stock of their aging facilities. A school fund, financed by a 10 peso (\$0.50) annual registration fee of pupils 1/ is administered locally, but the distribution of expenditures between supplies, upkeep, books, etc. is regulated by the Ministry. Unofficially, however, principals and/or parents associations induce substantial annual contributions from pupils (estimates reach 150 pesos a year in La Paz), which they administer for the educational enrichment of their school.

Decisions concerning school construction are fully centralized by law under the National Council of School Construction (CONES), funded separately from the Ministry. In effect, CONES only deals with urban construction, leaving the building of schools in rural areas to the separate initiatives of other government agencies (Community Development, Civic Action Branch of the Armed Forces, Rural Resettlement).

1/ 5 pesos in rural areas

Although local government and community contributions are made to the construction, upkeep and remodeling of schools, as well as to the acquisition of buildings for schooling purposes, construction decisions involving government participation are made at the center, according to the individual criteria of at least four different agencies.

Finally, the continued separation of urban and rural administrators within the Ministry (down to district level) generates organizational inefficiencies and acts to disqualify resources.

b. Structure

In addition to pre-primary education, the centralized public elementary system in urban areas provides two subcycles of primary education; basic (5 years) and intermediate (3 years). The secondary cycle covers the next four years of education. This structure (5-3-4) is still the object of controversy, having emerged after a rapid succession of reforms leading from an original 6-6 patterns to 5-3-4, the to 4-4-4 for two years and back to 5-3-4.

As always in these matters, decisions have reflected the particular prejudices of individuals in power rather than valid criteria of efficiency 1/. Appeals to reality would lend support to either the 4-4-4 or the 5-3-4 pattern, since both continue to survive throughout the system irrespective of current legislation. More important than the shift of grades from one cycle to the other is the extent to which barriers (formal or attitudinal) are erected between levels of education through the formal definition of successive cycles. An analysis of urban pupil flows clearly reveals that the institution of a distinct "intermediate" cycle (generally set apart with separate schools, directors and programs) results in a significant interruption of school careers, i. e. a substantial failure of entry into the sixth grade 2/.

In rural areas, the structure of elementary education is officially the same as in the urban sector since the 1969 reform linking the two systems under the Ministry of Education. However, much of it continues on a 3-3 basis, the first grade being a "Preparatory" year entered at age five. As seen earlier in 2. c., only a trickle of pupils continue beyond the fifth grade (5-2% of first grade entrants), and the number enrolled drops almost by half between the third and fourth grade.

1/ The literature on school-organization (called here system structure) is built almost entirely on ad-hoc rationalization of individual hunches.

2/ The continuation rate reaches 94% from grades 4 to 5, but drops to 88% from 5 to 6, returning to higher levels beyond.

The problem, in this case, is not one of formal structure, but of providing facilities and incentives where none exist at present. One important reason for the loss of enrollments at the end of the third grade is the fact that all schools within a "nucleus" of villages (15 to 30 schools) provide education up to that level, while the remaining three grades are only offered at one central school. This design would be efficient in the context of an inexpensive net work of transportation facilities covering the nucleus. In its absence, however, and given the parochial instincts of rural villages, many children never reach the central school.

While the potential of pre-primary education in both the urban and rural areas is greatly advertised (one full volume of the Diagnosis is devoted to it), enrollment figures indicate that much remains to be done at this level. Although pre-primary education is formally divided into three grades (serving ages 3 to 5), 86% of the enrollment is in the highest grade, and the number in that grade approximates the number receiving pre-primary education in the corresponding cohort. Dividing by the cohort size, it is found that 39% of the cohort (alive at age 6) did go through public (centralized and decentralized) pre-primary education in 1967 and 42% in 1971. Another 3% received this education through the private sector.

c. - Resources: Quantitative Analysis

Although the Ministry of Education budget represents close to 30% of the central government budget (for traditional government services), and public centralized elementary education has been absorbing close to 70% of the Ministry's budget, the system is operating under the ordinary strains associated with low economic development. The "vegetative" adjustment of the Ministry's budget in recent years has prevented its responding to growing demands. In the case of school construction, domestic expenditures are tied to the revenue of earmarked taxes, without reference to the growing shortage of facilities. Since few other revenue channels are available to the system, its resources remain essentially frozen.

1/ Administration expenses and teacher salaries together absorb 98.7% of operating expenditures, leaving only 1.3% for supplies and other services.

The main problem, however, has to do with the distribution of resources which the Ministry does control. Not only does the record show that urban education has been greatly favored over rural education in the past, but the internal spread of resources between different school inputs and activities breeds intolerable inefficiencies. As shown in Table IV-9, over 99% of Ministry operating expenditures are in personnel costs 1/. The inclusion of school expenditures financed from registration fees (going to non-personnel items) brings the percentage down only to 97%. Although these figures concern the total of Ministry operating expenditures, the magnitude is certainly correct for the large elementary education component. The implied dearth of books, supplies, and services is incompatible with successful education; more specifically, substantial increases in the performance level

TABLE IV- 9 Distribution of Operating Expenditures (Percentage)
Ministry of Education, 1967 and 1971

	<u>Total Expenditures</u>			<u>Salary Expenditures</u>		
	Personnel (included benefits)	Services	Supplies and Equipment	Teachers	Admi- nistration	Others
1967	97.63	1.60	0.77	90.78	6.00	3.22
1971	99.28	0.62	0.10	93.09	5.59	1.32

Source: Ministry of Education: Departamento Económico y Programación Presupuestaria.

of schools can be expected from a shift of expenditures away from personnel and toward complementary items. While some of the imbalance is overcome by contributions of families either to the school or to their own children's needs, this type of compensation can only result in serious inequalities and/or a regressive form of school financing.

One result of the misallocation of Ministry resources is that the average number of pupils per teacher in public elementary schools is relatively low. For the "basic" subcycle, the pupil - teacher ratio in 1971 was 28/1, down from 33/1 in 1967. Exact figures are not available for the intermediate sub-cycle but, based on average ratios known for grades 7 to 12, and estimate of 20/1 appears reasonable for 1971. Whether the downward trend has or has not continued over the last two years, it is clear from international experience that an increase in the ratio (i.e. a reduction of teaching personnel in relation to enrolled pupils) could be achieved without significantly affecting the quality of education.

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The drop in pupil-teacher ratio observed over the period 1967-71 is entirely explained by new flows of teaching personnel to the urban sector of education: While the pupil-teacher ratio has remained at 26/1 in rural areas throughout the period, the urban ratio fell from 42/1 in 1967 to 30/1 in 1971. On the surface, this shift can be justified as a step toward greater equalization of resources between urban and rural education. The fact is, however, that difficulties of consolidation in sparsely populated rural areas prevent the achievement of efficient pupil-teacher ratios. By contrast, urban concentrations permit the efficient utilization of teachers with average loads of 40 pupils or more. This means that ratios observed in the urban system in 1967 could be reestablished without loss of effectiveness. Such a move, together with increased consolidation of rural schools where feasible, could free the resources required for the purchase of additional inputs into both urban and rural schools.

Among all the shortages suffered by public elementary education, the most visible is that of school facilities. Although the system increased the number of classrooms between 1967 and 1971 by over 2,000 (or 24% of the initial number), the number of pupils per classroom only dropped from 45 to 42. These average figures are not especially disturbing; however, they represent the combination of crowded urban facilities (70 pupils per classroom in 1967; 58 in 1971) and a less utilized rural plant (31 pupils per classroom in 1967; 33 in 1971). As a result, much of urban primary education is conducted on the basis of double and triple sessions. The degree of overcrowding varies widely in accordance with region (see Table IV-10), reflecting the haphazard process by which school-construction (or building purchase) decisions have been made over the course of time.

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TABLE IV- 10 Classrooms and enrollments, 1971 by Department
(grades 1-6 only)

Chuquisaca	987	35,300	36
La Paz	3,688	159,900	43
Cochabamba	1,699	93,100	55
Oruro	1,046	40,700	39
Potosí	1,784	59,200	33
Tarija	641	25,100	39
Santa Cruz	1,545	91,500	59
beni	513	26,700	52
Pando	122	3,170	26

Source: Diagnóstico

d. - Resources: Qualitative Analysis

The quality of resources applied to public primary education in Bolivia is a significant determinant of its relatively low performance. The poor state of school facilities is to be expected given the antiquity of the school plant, the ill-adaption of many acquired buildings to school operations, and the lack of upkeep. With respect to instructional materials, few textbooks and teacher guides are utilized in the educational system and the content of the books used is not responsive to differentiated learning needs ^{1/}. Facilities have not been developed for the mass production of materials, and the distribution system (La Paz and 23 centers throughout Bolivia) has been ineffective. Especially vexing is the fact that textbooks are not delivered to schools unless payment of 2.50 pesos per pupil (part of the 5 or 10 pesos registration fee) is received by the center.

^{1/} However, a short series of excellent books was put out by the recently created Curriculum Laboratory, with USAID assistance.

As many schools (mostly rural) fail to collect the fees, large inventories of books remain undelivered in the center's warehouses.

The level of training of the teaching force represents another obstacle to successful elementary education. Less than 60% of teachers active in 1971 were graduated from normal schools. Of the remainder, 29% in urban areas and 24% in rural areas had been promoted on the basis of seniority 2/, while 13% in urban schools and 18% in rural schools held temporary appointments, generally without normal school training 3/. The main change between 1967 and 1971 was a substantial increase in the percentage of normal-school graduates in rural areas (from 50% and a general decrease in the percentage of temporary appointments.

The problems posed by the relatively low incidence of professional training are accentuated by the deficient quality of that training itself. The shortcoming of Bolivian normal-schools are documented in Section G, devoted to teacher-training.

Training deficiencies are the more important as very little help is received by teachers from the body of supervisors supported by the Ministry in each district. The problem is particularly acute in rural areas, where the one supervisor per 100 teachers lacks the facilities to reach individual schools. Moreover, as much as 30% of rural supervisors have not graduated from normal schools and have been promoted through seniority.

Finally the relatively low salaries paid teachers and, in rural areas, the isolation and discomfort associated with the job, tend to discourage professional dedication. At the present time, teacher salaries vary between 1930 and 2000 pesos (\$80 and \$ 100) monthly, depending on qualifications and seniority. The median salary is below the average for all government employees.

The combination of poor facilities, inadequate materials, ill-trained teachers and absentee supervisors results in an overall low quality of teaching. Rote learning remains the primary teaching mode, especially in rural areas. Prevailing attitudes find their ultimate expression in the system of promotion, evaluation and examination, which the authors of the Diagnosis evaluate in these terms: Rigid criteria of promotion, discontinuous evaluation dominated by bureaucratic objectives, examinations oriented to the measurement of accumulated knowledge. While Bolivian educators are aware of these shortcomings and committed to change, much stands in the way of substantial reform.

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Were the quality of service-inputs into the elementary systems brought up to more desirable levels, one final hurdle would remain in the path of high performance. Not only does a majority of Bolivian pupils grow up in poverty under the tutelage of uneducated parents, but some 80% of rural children speak a language other than Spanish and share in traditional cultures inimical to modern development. Clearly, the simple transfer of methods, programs and materials developed for urbanized, homogeneous population speaking a different language, is not likely to succeed in bringing valid educational benefits to Indian villages. The major challenge of Bolivian education at this point is, first, the definition of what it wishes to achieve in the context of Indian cultures and, secondly, the development of means appropriate to the task.

e. Costs of public primary education

Budgeted costs per pupil in current pesos, excluding capital charges, are shown in Table IV- 11 for three different years and for each elementary subcycle. They are also shown (between parenthesis) in constant 1971 pesos.

TABLE IV - 11 Budgeted operating costs per pupil, in public elementary education (in current pesos and constant 1971 pesos)

	1965	1971	1973
		<u>URBAN</u>	
Pre-primary	371 (499)	492 (492)	652 (489)
Basic (1-5)	401 (540)	539 (539)	714 (536)
Intermediate (6-8)	395 (532)	537 (537)	593 (445)
Total	398	536	676

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	1965	1971	1973
	<u>URBAN</u>		
Basic (1-5)	896 (398)	399 (399)	529 (397)
Intermediate (6-8)	535 (720)	710 (710)	941 (706)
Total	300 (404)	410 (410)	543 (407)

Source: Ministry of Education data

Overall, costs per pupil in constant pesos have declined slightly over time. The lower cost of rural education in the basic grades is explained by the predominance of young and less-qualified teachers in rural areas. The high cost of rural education at the intermediate level results from the low enrollment of rural schools at that level, i. e. from a low pupil-teacher ratio.

To the budgeted costs (Ministry expenditures) listed in Table IV-11, additions must be made on various accounts:

- (a) 10 pesos are paid annually by pupils as a registration fee and are spent locally by the school.
- (b) School-related expenditures of parents, either directly to the benefit of their child or through contributions to the school and parents' association, were found in an urban survey (working class sections of La Paz) to add up annually to the following figures:

Pre-primary	283 pesos
Basic	258 pesos
Intermediate	324 pesos

Unfortunately, reports of the survey do not disclose the breakdown of family expenditures. Independently obtained opinions suggest that some 150 pesos per year may be gathered on the average in the form of contributions. No direct information is available concerning rural schools, although family expenditure in the rural sector are said to be substantially lower than in the urban sector.

If correct, the above figures would suggest that a high proportion (1/3) of the total cost of educating children in the public elementary system is shouldered by families. The implications of this situation were noted in C above and are developed further in the financial analysis (Section E) below.

(c) Capital expenditures over an extended period of time have been so minimal that amortization costs can be safely neglected.

f. Costs and efficiency

The lack of valid output measures prevents the comparison of benefits and costs of education within each of the elementary subcycles. On the other hand, the quantitative analysis of resources utilization carried out in c. points to the existence of feasible options toward improved benefit-cost ratios for the system as a whole. There is professional consensus to the effect that (1) a reduction in personnel costs is achievable without reduction in teaching effectiveness, and (2) the transfer of resources thus saved to the procurement of other inputs (i. e. teaching materials and fixed facilities) would substantially increase effectiveness. The specific avenue of personnel cost reduction is a lowering of pupil teacher-ratios to some 40/1 in the urban section and 30/1 in the rural sector; salary reductions would certainly be counter-productive, and more can be gained from reforming the utilization of administrative personnel than from reducing its size.

Based on a continued enrollment trend in the urban area and a slightly accelerated trend in the rural areas, Table IV - 12 projects the effects of shifting the pupil-teacher ratios to 40/1 (urban) and 30/1 (rural) over a period of 10 years. The measured effects include (a) the percentage distribution of expenditures among categories and (b) the total employment of teachers. Calculations are in terms of 1973 prices and the total budget of centralized public primary education is assumed to grow in proportion to enrollments.

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TABLE IV-12

Projections of Public Primary Education System:

Actual Budget Allocation under alternative policies concerning pupil-teacher ratios

	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985
Projected Enrollments: Urban (6.5%) (000)	417.5	444.6	473.5	504.3	537.1	572.0	609.2	648.8	691.0	735.9	783.7	834.6	888.8
Rural (7.0%)	336.0	359.5	384.7	411.6	440.4	471.2	504.2	539.5	577.3	617.7	660.9	707.2	756.7
Projected Budget (operating expenditures) (millions of 1973 Bd. pesos; i.e. constant prices)													
Urban (6.5%)	282.5	300.9	320.5	341.3	363.5	387.1	412.3	439.1	467.6	480.0	511.2	544.4	579.8
Rural (7.0%)	182.6	195.4	209.1	223.7	239.4	256.2	274.1	293.3	313.8	335.8	359.3	384.5	411.4
Total	465.1	496.3	529.6	565.0	602.9	643.3	686.4	732.4	781.4	815.8	870.5	928.9	991.2
Alt. 1: Maintain Student/Teacher Ratio													
Expend. for teachers (millions of pesos)	432.5	461.6	492.5	525.5	560.7	598.3	638.4	681.1	726.7	758.7	809.6	863.9	921.8
Available for other inputs (millions of pesos)	32.6	34.7	37.1	39.5	42.2	45.0	48.0	51.3	54.7	57.1	60.9	65.0	69.4
Alt. 2: Raise Student/Teacher ratios													
Urban: Students/Teacher	30:1	31:1	32:1	33:1	34:1	35:1	36:1	37:1	38:1	39:1	40:1	40:1	40:1
No. Teachers	13,917	14,342	14,797	15,282	15,797	16,343	16,922	17,535	18,184	18,869	19,593	20,865	23,220
Teacher Salary Expenditures	262.7	271.1	279.7	288.8	298.6	308.9	319.8	331.4	343.7	356.6	370.3	394.3	420.0
Rural: Students/Teacher	26:1	26:1	27:1	27:1	28:1	28:1	29:1	29:1	30:1	30:1	30:1	30:1	30:1
No. Teachers	12,923	13,819	14,248	15,244	15,729	16,829	17,386	18,603	19,243	20,560	22,030	23,573	25,223
Teacher Salary Expenditures	169.8	181.6	187.0	200.0	206.7	221.1	228.5	244.4	252.9	270.2	289.5	309.7	331.4
Total Teacher Salaries (millions of pesos)	432.5	452.7	466.7	488.8	505.3	530.0	548.3	575.8	596.6	626.8	659.8	704.0	751.4
Avail. for other inputs (millions of pesos)	32.6	43.6	62.9	76.2	97.6	113.3	138.1	156.6	184.8	189.0	210.7	224.9	239.8
% Avail. for other inputs	7%	8.7%	11.9%	13.5%	16.2%	17.6%	20.1%	21.3%	23.5%	23.2%	24.2%	24.2%	24.2%

Assumptions:

1. Urban enrollment will grow at 6.5% annually.
2. Rural enrollment will grow at 7.0% annually.
3. Budget expenditures will grow in both urban and rural areas proportionately to enrollment.
4. Constant 1973 prices, i.e. no inflation.

Source: Mission estimates based Ministry of Education data.

Table IV- 12 indicates that the proposed shift in pupil-teacher ratios would bring salaries down to 75% of the operating budget, a percentage that is below professional norms. The percentage would even be less if family contributions were added to budgeted expenditures. This means that a policy of reasonable increases in the ratios (milder than assumed in the Table) could rapidly bring the education budget to a state of structural efficiency.

4. - Decentralized Public Sector: Organization, Structure and Resources.

The decentralized public sector comprises school systems financed and administered by the two giant public mining corporations of Bolivia: COMIBOL AND YPFB ^{1/}, in their major areas of operations. The schools are reserved for children of the corporations' employees and exist side by side with schools in the (centralized) public system. They are subject to the control and regulations of the Education Ministry with respect to programs, teacher qualifications and teacher salaries.

Enrollments at the pre-primary level and in each of the two subcycles of primary education, are shown in Table IV-13 for the period 1967-1973.

TABLE IV - 13 Elementary enrollments; decentralized public system.

	1967	1970	1971	1972	1973
Pre-primary	5,580	5,024	5,127	4,771	5,020
Basic (1-5)	28,192	29,127	30,957	31,375	31,413
Intermediate (6-8)	5,735	9,112	11,131	12,036	12,802
Total	39,507	43,263	47,215	48,182	49,235

Source: Se Table IV - 4

Given the relative stability of elementary enrollments in the decentralized system during the period covered by the table, their percentage of total elementary enrollment has declined from 6.3% in 1967 to 6.0% in 1973.

The allocation of its resources by the decentralized system is more efficient than in the public system, as a comparison of tables IV-9 and IV-14 will indicate.

^{1/} Corporación Minera de Bolivia and Yacimientos Petroliferos Fiscales Bolivianos.

TABLE IV - 14 Combined levels of education, Decentralized Sector Distribution of operating expenditures by category 1965-1973.

	1965	1970	1971	1972	1973
	%	%	%	%	%
Personnel (Salaries & Benefits)	72.0	83.6	84.8	86.7	88.55
Services & Supplies	28.0	16.4	15.2	13.3	11.45

Source: Corporación Minera de Bolivia

At the same time, the table provides evidence of a serious slippage. In 1965, salaries and benefits represented a healthy 72% of expenditures, with services and supplies counting for 28%. The deterioration has been progressive ever since, to the point here, in 1973, close to 90% of the expenditure was going to personnel.

The average budgeted cost per elementary pupil, which was approximately the same as in the public system ten years ago, has risen steadily to the point when it is now 20% higher than the public system's cost. Similarly, the decentralized sector has invested far more in school building than the public system (in relation to its enrollment level and rate of growth) with annual investments averaging 18% of the total education budget vs 5% or less in the public sector.

In spite of this, the decentralized system, once praised as a prime example of the benefits of Corporate paternalism, shares much of the same problems as the public sector and does not, as of now, offer substantially better education than the latter. One important factor cited in explanation of this deterioration is the obligation imposed on the system to pay teacher salaries in accordance with national schedules in force in the public system. Given the discomforts of life in the areas served by decentralized public education, this has resulted in an excessive turnover of personnel and a predominance of young, inexperienced teachers. It appears that the needs of pupils in the system would be better served were its personnel policies freed from the Education Ministry's control and the role of the latter limited to the regulation of programs and formal evaluation.

1/ All subsequent tabulations are based on the 1970 sample, the results of which are presented and analysed in: Comisión Episcopal de Educación: La Educación Privada en Bolivia - Visión General de su Economía: La Paz, 1972

At the margin of the accredited system, the rural areas support a large number of community schools which do not meet present standards of accreditation. The status of these has been the object of much official confusion. A growing enrollment, reaching about 50,000 in 1972, has been reported each year for rural private education at the "basic" level of elementary education. For 1973, however, the number reported is under 2,000. The explanation offered by Education Ministry authorities is that, until last year, many small rural communities would report having started independent schools and list a grossly inflated number of pupils, so as to create a legitimate claim for the establishment of a public school in their village. To the extent that they succeeded, this process led to serious abuses, including the employment of substandard teachers and the irrational location of undersized schools.

To remedy the situation, a system of accreditation was established between 1971 and 1973, setting a minimum numbers of pupils and minimum teacher qualifications. Non-accredited schools cannot be absorbed in the public system, nor can their pupils obtain transfer to public schools on the basis of grade completed. Furthermore, they are no longer counted in the annual census of enrollments carried out in each district. 1/

1/ While the incentive for reporting bogus enrollments has been effectively curtailed, the desire of villagers for a school in their immediate vicinity remains, and an unreported enrollment in substandard schools in likely to persist for years to come. In financial tabulations (Section E), it is assumed that one half the private rural enrollment in basic education reported until 1972 did exist, and that it continued at the same level through 1973.

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5. - Private Sector: Organization, Structure and Resources

Although the private sector of Bolivian education makes its main contribution at the secondary level, it enrolls some 14% of all urban pupils in the elementary grades. The distribution of private elementary enrollments is shown in Table IV-17 over the period 1965-1973, in urban areas.

TABLE IV- 15 Elementary Enrollments, Private Sectors (urban) 1965 to 1973

	1965	1967	1970	1971	1972	1973
Pre-primary	3.858	4.019	4.341	3.950	3.957	3.939
Basic (1-5)	44.534	42.326	43.855	45.183	46.558	47.055
Intermediate(6-8)	18.142	21.360	21.302	22.770	22.735	22.806
Total	66.534	67.705	69.498	71.903	73.250	73.800

Source: Estadística Educativa 1969-1972

a. Organization and Structures

The large majority of accredited private schools are in the urban sector. Based on a 1970 sample survey which appears fairly representative ^{1/}, some 63% of accredited private schools are catholic, 24% are lay schools run by teacher cooperatives, and 13% are distributed among a variety of protestant denominations and other lay groups. Only 18% of the schools (mostly Catholic) are tuition-free, the remainder depending largely on tuition revenue for their support.

It should be noted that, except for a traditional core of Catholic schools, the majority of existing institutions (70% in the sample) did not begin until after 1950.

^{1/} A comparison of enrollments in schools within the sample and of total urban private enrollments in 1970 yields the following figures:

	Enrollment in Sample	Private Urban Enrollment
Pre- primary	3,686	4,341
Basic	36,337	43,855
Intermediate	19,393	21,302
Secondary	18,022	22,283

b. Resources of the private education system

Budgeted expenditures of the private system (accredited schools) are financed primarily from registration and tuition fees, which account for 72% of total receipts. Next come domestic subsidies (11%), mostly from government, followed by foreign donations and subsidies and, finally, various domestic and "other sources". Domestic subsidies go almost exclusively to tuition-free schools (mostly Catholic), while foreign subsidies help tuition paying schools of all persuasions. As in the public system, additional contributions of families to such items as books, school supplies, school clothes, transportation, special school events, etc., are estimated to bring the actual expenditure to some 140% of what is effectively budgeted by schools.

The distribution of resources among categories of budgeted expenditures is more efficient than in the public system, with only 82% of operating expenditures going to personnel (including benefits) and 18% remaining for supplies and services. The share of personnel expenditures is further reduced when contributions of families (other than fees) are also counted. With respect to capital expenditures, nearly 10% of the total budget of private schools is allocated to this item (1/3 for debt service), in spite of the very slow growth of the system.

c. Costs and efficiency

Operating costs per elementary pupil in 1970 are shown in table IV-16 for the system of accredited schools.

TABLE IV - 16 Operating costs per pupil, accredited private schools, 1970, in current pesos

Pre-primary	464
Basic (1-5)	514
Intermediate	601

Source: La Educación Privada

These costs are approximately the same as in the public sector for the same year, except at the intermediate level where they are substantially higher.

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The measurable performance of the private system (accredited schools) is superior to that of the public system, as disclosed by table IV- 17.

TABLE IV - 17 Average retention of accredited private schools (based on 1000 students entering first grade of subcycle)

Grade year	Basic	Intermediate
1	1000	1000
2	896	871
3	870	837
4	810	
5	773	

Source: La Educación Privada

By comparison, the urban public system retains less than 650 pupils in grade 5 out of 1000 entering first grade. In terms of "graduation" rates from the primary system, the private sector figure is 52.5% vs. 42.3% for the urban public system.

It is apparent, however, that performance measures reflect as much the superior socio-economic background of private school pupils as it does any difference in the schooling process itself. In table IV-18, private schools are divided into four categories going from I to IV, enrollment in schools of category I being dominated by upper-class children (business managers and high-level professionals), while enrollment in category IV comes primarily from working-class backgrounds. The drop in graduation rates from classes I to IV is indicative of the impact of family characteristics, although it is true that the expenditures per pupil also falls in accordance with school-class (in 1970, from 791 pesos in class I to 413 pesos in class IV).

TABLE IV - 18 Graduation ratios in primary education, accredited private schools, by class (graduate output as percent of entering class)

Classes	I	II	III	IV
Graduation percentage	60.98	52.81	44.33	19.77

Source: La Educación Privada

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d. - Private education and social distribution

The inequalities of access to education was noted earlier in Part I of this Assessment. While the near totality of children from upper-class families attend private schools, no more than 3.5% of children belonging to the campesino and working classes (representing 82% of the whole population) are in the private system. Furthermore, as pointed out above, schools tend to be fairly segregated in terms of socio-economic background of children, and the expenditure per pupil is larger the higher average social class of the school.

On the other hand, a note of progressivity is introduced through the financing of the system. Not only do upperincome families contribute doubly to the financing of Bolivian education by paying both tuitions and taxes in support of the public system, but a fair degree of redistribution is achieved within private education itself. As shown by table IV-19, tuition-free institutions cater primarily to lower-class children, and there is a fair correlations between school tuition and average socio-economic composition of the school's population.

TABLE IV - 19 School classes and incidence of free-tuition Percentage distribution by class of:

Class	(a) all private schools	(b) tuition- free schools
I	26.08	2.38
II	27.39	11.36
III	34.16	36.36
IV	10.50	82.30
	<u>100.00</u>	<u>100.00</u>

Source: Educación Privada

In addition, some 10% of pupils receive scholarships (6.5% complete and 3.5% partial), at an average level of 500 pesos per scholarship (1970). The latter amount is close to the average tuition level in tuition - paying institutions.

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C. Secondary Education

1. - Objectives and Achievements

Even though successive reforms in the recent decade have kept emphasizing the role of secondary-level education as the purveyor of training toward both university studies and the large group of middle-level "technical" occupations to be filled in support of development plans, the system continues to be almost exclusively oriented toward the production of candidates for university education.

Of all students enrolled at the secondary level, 94% are in essentially academic general-secondary schools leading in four years to the bachillerato ^{1/}, and only 6% are in specialized schools. Of those seeking the bachillerato, 96% aspire to higher education—more specifically to university training. As in a majority of the developing countries, the small number of individuals entering the secondary cycle (some 23 for the Bolivian cohort entering in 1973) represent an intellectual and/or social elite whose aspirations cannot easily be bent.

The next effect of this orientation is (a) irresistible pressure for admission at universities and excessive growth of enrollments at that level (See Section D), and (b) a continued shortage of qualified middle level manpower, both in the industrial sector and in rural-development agencies. There is, on the other hand, a glut of "educated" individuals seeking in vain to kind of occupational status to which they feel entitled.

In addition, the average quality of the education provided remains poor, for reasons already made familiar in the context of elementary education: insufficient training of teachers, inadequate teaching materials, overcrowding of facilities, organizational confusion, and lack of support services from the Ministry of Education.

While the steps required to improve the quality of secondary education are easily identified, there is no clear or simple solution to the problems posed by the university-orientation of the system. Reinforcing and improving guidance services in the schools, as suggested by the Diagnosis, will have little effect as long as, on the one hand, teachers keep encouraging

^{1/} In 1970, 87% of the bachilleratos were in the humanities, 8.3% in the natural sciences, 2.0% in the social sciences, and only 1.6% in technical education.

traditional aspirations in the classroom and, on the other, wide income and status differentials exist between the higher professions and those attainable without a university degree. In view of these differentials, little can be achieved either by expanding and reinforcing terminal professional programs at the secondary level unless (a) limits are placed on the growth of academic programs, and (b) a clientele is assured for terminal programs by locating them where access to academic programs is limited (rural areas) or by designing them consciously for pupils of lesser academic ability. These are clearly difficult decisions in the face of powerful social (political) pressures for increased educational opportunities

2. - Performance of the Secondary System

Gross measures of performance are available along the three dimensions previously identified: enrollment growth, average grade completion and social distribution of opportunities.

a. Profile of Enrollments

The growth of secondary enrollments is reported in Table IV-20 separately for general-secondary schools and for specialized schools.

TABLE IV- 20 Secondary- Level Enrollments 1965 to 1973

	1965	1967	1970	1971	1972	1973
<u>General Secondary</u>	38.200	43.988	75.157	84.077	95.991	102.117
<u>Specialized</u>	5.961	8.629	7.083	6.960	7.339	8.185
Commercial	3.768	3.710	3.434	3.942	4.399	4.980
Women's Professional	725	3.550	2.378	1.748	1.653	1.823
Technical/Industrial	382	278	282	177	227	230
Arts and Music	1.086	1.091	989	1.093	1.060	1.159
<u>Grand Total</u>	44.161	52.617	82.240	91.037	103.330	110.202
Rural Normal Schools		3.465	4.356	5.193	5.896	5.617

Source: Estadística Educativa

The rate of growth of enrollments in general -secondary schools has been high, reaching 14.5% annually between 1965 and 1970, 10.7% annually between 1970 and 1973. By contrast, the enrollment in specialized programs has been stable or declining, except in commercial (clerical) careers. However, the substantial drop observed for women's professional schools (which emphasize careers in clothing design and manufacture, decoration, handicrafts and home economics) is due primarily to a reduction of the program from six to four years in 1969.

The rural portion of the secondary enrollment is minimal, with only 7,000 students enrolled in general-secondary schools in 1973 (up from 2,500 in 1965 and 3,500 in 1970), and none in specialized schools. Furthermore, as indicated in Table IV-22, rural normal schools are in the process of shifting their position from secondary to higher-education level. Their enrollment in 1973 was 5,617.

In terms of proportions of the relevant age group, data are available only for the years 1967 and 1971, and for the six upper grades combined (grades 6-12) rather than for the four secondary grades only. The proportion in school has grown rapidly from 16% in 1967 to 23% in 1971.

b. Average grade completion of school entrants

Of 1,000 students entering the first year of the general secondary program in 1967, 819 went on to a second year, 740 to a third, 674 to a fourth, and 586 graduated. As in elementary education, however, some improvement of retention rates is observable over recent years.

In the four-year technical-industrial program, between 60% and 70% of entering students remain enrolled in the fourth year. In the four-year women's professional program, the residual fourth-year enrollment is only 30% of the entering class. Enrollment figures in the commercial program are more difficult to interpret, as different degrees are bestowed in the course of the program, and entry can be made at different points in accordance with the level of general education of the student.

c. Social distribution of opportunities

The inequality of access to secondary education between urban and rural areas needs no further documentation than the abysmal figure for rural secondary enrollments introduced in a. : 7,000 in 1973 out of a total of 110,000. Women have lesser access to secondary education than men, representing only 40% of the enrollment in 1972. However, the movement toward equalization has been fairly rapid, since the percentage in 1967 was only 34%.

3. - Public (Centralized) Sector: Organization, Structure and Resources

a. - Organization and Structure

Public Secondary education is organized on the same centralized model as primary education. Structurally, the main division is between general-secondary schools and the specialized schools offering commercial, arts and technical-industrial programs.

General secondary schools offer primarily academic programs, which students select in the expectation of moving up to university studies. In line with efforts at diversification, some of the schools maintain commercial, vocational or industrial sections. However, only 37 technical-vocational sections exist across the country and 90% of these do not qualify to grant the corresponding degree (bachillerato técnico). No more than 1.6% of the bachel^lerato granted in 1970 were in the "técnico" category.

The specialized schools vary in the number of years required for graduation and in the grade level of entry of their students. In accordance with the 1973 Decree, a fairly uniform pattern is in effect, with two years of study beyond primary leading to "certification" of the student for less qualified occupations, and four years to the Bachillerato with a higher professional title. For example, commercial schools are to produce certified secretary-typist after two years, secretarial-clerical bachillerato after four. In fact, however, successive reforms over the last decade have resulted in a high degree of confusion, with patterns of different vintage coexisting (mostly, shorter courses or earlier entry than under the present law).

b. Resources

The pupil-teacher ratio in general-secondary school is 18/1, down from 21/1 in 1967. Much less favorable is the ratio of professors per supervisor, which increased from 310/1 in 1967 to 500/1 in 1971. With respect to teacher qualifications, the proportion of normal-school graduates rose from 61% in 1967 to 69% in 1971; that of teachers promoted through seniority dropped from 24% to 15%; and that of temporary teachers rose slightly from 15% to 16% ^{2/}. Some significant differences exist among Departments, however, with Chuquisaca and Cochabamba employing over 80% of normal-school graduates, while Beni and Pando have 25% or less. Clearly the system of teachers' allocation operates under other than fully rational norms.

^{2/} The majority of the latter have had some university training.

In line with international experience, specialized technical-industrial schools have low pupil-teacher ratios, while commercial schools have a high student load per teacher. In technical-industrial training, only 13% of teachers are normal-school graduates; the majority (55%) were promoted on the basis of their specialized skills, and 28% owe their title to seniority. In commercial schools, only 15% came from normal schools, 39% were promoted through seniority, and as many as 46% are temporary appointees.

As in primary education, overcrowded conditions prevail in a majority of the schools, leading to double or triple sessions. In spite of some recent increases in construction activities, the situation keeps deteriorating: The number of enrolled students per available classrooms increased from 60.5 in 1967 to 64.6 in 1971. Moreover, some 50% of existing school space fails to meet basic standards of adequacy. Substantial variations exist among the Departments, with Santa Cruz, Oruro and Cochabamba carrying more than 75 students per class-room, and Tarija, Pando and Beni accommodating less than 35.

The outcome of resource inadequacies, as well as of organizational deficiencies, is described by the Diagnosis as follows:

(a) For general-secondary education

Secondary school teachers have difficulties following the study programs prepared for their subject matter by the Ministry. They deviate from such programs less as a matter of exercising curricular initiative than of lacking adequate preparation.

-Teaching remains centered on theoretical exposition and based on lecture dicatation. This approach is explained in part by the general dearth of study materials, in part by the deficient training of teachers in modern pedagogical methods. The latter factor clearly plays a large role, since existing laboratory facilities are grossly under-used, as are to a lesser degree libraries and other study aids.

-Existing regulations put excessive emphasis on final examinations as a method of evaluation. Promotion from one class to the next requires passing of all subjects, and students are allowed to take and re-take make-up examinations. This combination is favored by teachers in the name of "general culture" and fairness", without consideration for the development of individual students skills and interests.

(b) For technical/ industrial education

- There is a lack of articulation between general and technical courses.
- The programs are stagnant and rigid, failing to respond to changing national and regional needs.
- Study programs are interpreted at will by individual teachers, without coordination at any level.
- The picture is better with respect to work organization and student evaluation: Some 75% of class-time goes into practical exercises, and evaluation is both broad-based and continuous.
- Yet, because of lack of coordination with industry -either in terms of ascertaining the latter's requirements or in terms of providing students with in-plant experience during the course of their studies - Bolivian industrialists have reservations concerning the effectiveness of graduates, and the latter do not have ready access to employment at their formal level of qualification.

c. Costs and efficiency

Budgeted operating costs per pupil for the whole public secondary system are shown in Table IV-21 for three different years. They are also shown (between parentheses) in constant 1971 pesos.

TABLE IV- 21 Operating Cost per pupil, Secondary level, 1965 to 1973
In current pesos and constant 1971 pesos ()

	1965	1971	1973
Urban	818 (1, 10 1)	1, 113 (1, 113)	1, 474 (1, 106)
Rural	1, 294 (1, 742)	1, 198 (1, 198)	1, 587 (1, 191)

Source: Ministry of Education data

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As expected, the specialized education of technical/industrial schools is far more expensive than general education. For 1970, the figures stand as follows:

General secondary	973
Women's professional	2,106
Technical/industrial	3,400

On the other hand, commercial training only cost 455 pesos in the same year.

To the extent that the large majority of general-secondary schools are located in urban areas, the average pupil-teacher ratio of 18/1 could be increased without loss of effectiveness, and the resources thus saved applied to the purchase of complementary inputs.

Not enough information is available to evaluate the efficiency of commercial and technical/industrial schools. It is apparent, however, that the large expenses incurred by the latter will not be justified until graduates are made to fit the demands of industry.

4. - Decentralized Public Sector and Private Sector: Organization, Structure and Resources.

Secondary enrollments in the two sectors are shown in Table IV-22 for the years 1965 through 1973. Nearly all such enrollments are in urban schools.

TABLE IV - 22 Secondary-level enrollments, Decentralized and Private Sectors 1965-1973

	1965	1967	1970	1971	1972	1973
Decentralized Sector	644	961	1,728	3,319	3,775	3,941
Private Sector	16,981	20,188	24,702	26,620	29,208	31,623

Source: Estadística Educativa

While the ratio of secondary to primary-basic enrollments in the decentralized sector is substantially lower than in the urban public system (1/5 vs 1/4), the ratio in the private sector of education is much higher (almost 2/3 vs 1/4). Clearly, then, the main impact of private education in Bolivia is at the secondary level. Another measure of this imbalance is the fact that 27% of pupils enrolled in general secondary programs are in private schools, vs. only 14% for those enrolled in the basic grades (urban area).

Private secondary schools are as clearly oriented toward university education as their public sisters: Some 2,800 students are in private secretarial and women's professional schools, against 29,000 in general secondary schools. Statistics of enrollment by grades indicate that many families shift their children from the public to the private sector from the sixth grade on, in the presumed expectation that both the moral and academic interests of pupils will be better served. On the basis of gross performance measures, the choice of families appears quite rational: Some 80% of entrants in private secondary schools get to the fourth year, vs. only 63% in public general-secondary schools, and the graduation rates differ accordingly. On the other hand, family background plays a major role in the outcome, since the graduation rate in private secondary schools of class I (dominance of upper-class enrollment) is 1.7 times that in schools of class III (lower class enrollment).

Interestingly enough, the superior performance of private schools is achieved at relatively low cost: In 1970, their operating cost per pupil was only 662 pesos vs. 973 pesos in public general-secondary schools. This result was achieved in spite of a pupil-teacher ratio of only 12/1, which compares with 18/1 in the public system, and a teaching force as highly qualified as that of the public system (70% with Normal-School or superior training, as in the public system). The only possible source of savings is clearly teachers salaries; in the absence of salary data by education level in the private sector, it must be presumed that salary differentials between primary and secondary teachers are less in the private than in the public system.

With respect to equalization of access, private schools turn out to be more restrictive at the secondary level than at the primary: No secondary institution is found in class IV, defined as having a majority of working-class pupils.

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D. Higher Education

1. - Objectives and Achievements

With the creation of the National Council of Higher Education (CNES) in 1971, Bolivian universities were given a set of common objectives, and a structure was put into place to guide university development toward their achievement. The objectives are listed as follows by the Council:

- To give students a solid and modern education in their own professional field, set on a firm humanistic base, and so designed that they will better function within the Bolivian society and better understand its problems.

- To impart a scientific-technological orientation to all fields of study, so as to satisfy the needs of national development policies.

- To cooperate with public and private agencies in the solution of problems in areas of national development.

While these objectives have some of the "lyrical" qualities already found in official statements concerning school education, the Council has moved quickly to their translation in operational terms. Besides calling for an increased emphasis on scientific investigation and extension work, it has geared its policies to a list of well-defined programs. These extend from the organization of faculties within universities to curriculum and calendar reform, passing through the definition of new career programs, the creation of new institutes, the continued analysis of labor-market prospects, the streamlining of evaluation procedures and the program-budgeting of university operations.

Such objectives are not valid for the whole of the higher-education sector. As indicated in 3. a, a small number of students attend schools of the "higher level, non-university", which are under authority of the Education Ministry and are extensions of the "specialized" secondary schools discussed in section C. In addition, a substantial enrollment is located in Normal Schools, training for teaching careers at the primary and secondary level. Nevertheless, the dominance of universities in Bolivian higher-education is such that their objectives can be taken as the objectives of the post-secondary cycle.

Needless to say, the university system is far from having achieved the goals set for it by CNES. It is not only that the nine Bolivian universities (eight public and one private) had too long a way to go, having developed into a somewhat chaotic system, with multiple faculty fiefdoms, part-time professors of a professional rather than academic orientation, programs developed in response to student demand irrespective of market or national -plan

TABLE IV - 24 Promotion, Repeating and Drop-Out Rates, University System, 1960 - 1966.

<u>Curso</u>	I	II	III	IV	V	VI	VII
A. <u>"Faculty" Level</u>							
Promotion %	37.4	50.5	61.6	72.0	68.5	84.2	98.3
Repeaters %	32.8	33.9	27.1	19.1	19.6	7.8	1.5
B. <u>Intermediate Level</u>							
Promotion %	36.7	50.5	63.8	69.9			
Repeaters %	14.3	16.3	11.1	14.7			

Source: CNES data

The rates vary substantially between areas of study, as do the length (or number of cursos) required for graduation. For instance, only engineering and medical studies go beyond a fifth curso; agronomy, veterinary medicine and nursing take only four cursos. In general, however, the attrition and repeating rates are high, and less than 30% of students entering the university eventually graduate. A very small proportion of these obtain the titles required for practice of the professions all calling for additional examinations.

3. - Organization and Structure

As already indicated, Bolivian higher-education is dominated by university and normal-school education, with only 1600 students, or under 4% of the total post-secondary enrollment studying in programs under the Ministry of Education. The latter are upper divisions of commercial and technical/industrial specialized schools which operate primarily at the secondary level. The normal schools enroll some 17,000 students, 40% of which in the rural sector. The eight public and one small private universities, enroll nearly 25,000 students and are all under the authority of CNES. (See 1). Universities operate programs at two levels, with 83% of the enrollment in faculty level courses leading to academic and professional degrees and 17% in middle-level programs preparing for technical and first professional occupations.

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ning considerations, overloads of students in relation to facilities, undependable criteria of graduation subject to sporadic student pressure, and irresponsible financial management.

More than inability to achieve necessary reforms, there has been immediate and powerful resistance on the part of universities to both the general objectives and the implementation programs of CNES. One basis of this resistance is the intervention of CNES in matters involving university integrity, i. e. the content of courses and programs; another is an excess of regulation toward uniformity in areas that each university could administer flexibly without jeopardizing the efficiency of the system, e. g. a general university calendar that specifies the dates of mid-term examinations. The real source of discontent, however, appears to be the loss of full "university autonomy" (in the sense given that expression in Latin America) and, with it, the obligation to make painful changes, even though most of these are clearly to the advantage of Bolivian higher education.

2. - Performance of University Education

Of the cohort of first-grade entrants reaching post-secondary age in 1973, no more than 12% did continue into higher-education. The number entering universities was 6400, and represented some 52% of the number of high-school graduates in 1972. As many as 10,250 or 83% of the number of high-school graduates, had applied for admission, but the national admission test only let 63% of them through. Another 4,600 entered Normal Schools, and less than 500 went on in technical-professional schools. Altogether, therefore, some 90% of high-school graduates continued in some form of higher-education.

No recent data are available concerning the flow of students through the university system: The only study available is that mounted in 1967-68 by Ohio State University and the Bolivian Planning Organizations ^{1/}. The consensus of interviewed persons in La Paz, however, is that patterns have not changed significantly over the last six years.

Table IV-24 shows for the period 1960-1966, the rates of promotion from one "grade" to the next, the grades being described as yearly "cursos" labelled I to VII. The Table also shows the proportion of repeaters found in each curso. Figures are shown separately for the two main levels of university education (see 3.): the "faculty" level leading to higher degrees, and the intermediate level leading to diplomas in technical/professional occupations.

^{1/} Secretaria Técnica de Planificación, Bolivia, and Center for Human Resource Research, The Ohio State University: Plan Nacional de Desarrollo de los recursos Humanos, La Paz, 1969.

The eight public universities are dispersed contrywide, with one each in eight of the nine Departments. Some 48% of the total enrollment is in La Paz, and 22% is in Cochabamba; all other universities carry between 1,000 and 2,000 students, with the exception of the new university in Beni which has only reached a 150 enrollment. The universities vary in the number of programs offered: San Andrés in La Paz is the only one to cover the whole range of traditional offerings; of the others, all (except Beni) teach Law and Economics, two carry Medicine, Dentistry and Pharmacy, four some Engineering, three Agronomy, and one Architecture. The University in Beni offers only Animal Husbandry, in which it has a national monopoly.

In view of excessive duplication in certain specializations within programs among universities, CNES is attempting to reduce and consolidate the catalogue of the university network. In addition, a large effort has been undertaken to define post-graduation careers and to program courses along career lines.

4. - Resources

The Bolivian universities are financed primarily through earmarked tax revenues particular to each campus. Other sources of support are distributions from CNES (financed from a percentage of the national internal revenue) and tuition or service fees. Such revenues have not been responsive to the rapid growth of enrollments over the last ten years. As a result, resources have not been expended to keep up with new staffing needs, and facilities of all types have been lagging increasingly behind requirements. It is estimated that, at the present time, facilities are used at twice their normal capacity; the situation is far worse with respect to laboratories and libraries.

As a result of wholesale budgetary shifts in favor of personnel support, the student, professor ratio is quite adequate: 11.7/1 on the average with all but two universities falling in the range 10-14. Lower ratios are in effect at smaller institutions (Tarija, Beni, Catholic University), with Beni having as few as 3 students per professor. In addition, the personnel budget supports a staggering number of employees in the "administrative" category: There are almost as many administrators as there are professors, or one for every 12.5 students. There is little question that the drive of CNES toward administrative efficiency is justified by the record.

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TABLE IV - 25 University Education, Distribution of Operating Expenditures by Category, 1973 (Millions of Bolivian pesos, 20 pesos - \$ 1)

<u>Instruction and General Administration:</u>		148,831
	<u>Percentage Distribution</u>	
Personnel	79.2 %	
Services	8.8	
Materials & Supplies	12.0	
	100.0 %	
 <u>Auxiliary Services</u>		
Transfers (scholarships and other contributions)		4,474
		181,865
<u>TOTAL</u>		

Source: CNES data

5. - Costs and Efficiency

Annual operating costs per student vary both among universities and among fields of study. Cost for 1973 are shown in Table IV-25 a for each university.

TABLE IV - 25 a Universities - Annual Operating Cost Per Student, 1973 (in Current pesos)

Cochabamba	Chuquisaca	La Paz	Oruro	Tarija	Santa Cruz	Potosí	Beni
4,139	5,982	6,687	7,927	11,078	10,422	10,383	37,831

(8)

Cost variations reflect in part different levels of tax-revenue in each Department, and in part, large differences in university size. In particular, the huge cost incurred by Beni is explainable by its enrollment of only 150 students, requiring a student-teacher ratio of only 3/1.

Relative costs by field of study (1970) are listed below, with base 1 for the lowest-cost area (Economics):

Economics	1.00	Medicine	2.09
Law	1.08	Philosophy & Humanities	2.22
Architecture	1.32	Agronomy	2.40
Sociology	1.54	Pharmacy	2.41
Social Work	1.75	Industrial Engineering	3.90
Technology	1.85	Civil Engineering	4.09
		Zoology	4.35

Where the objective of Bolivian education to educate the largest number of students under a fixed budget, the existing distribution of enrollments by field would be fairly efficient. Almost 40% of the faculty-level enrollment is in law and economics (the cheapest fields), 25% is in medicine (in the middle range of cost), and only 20% is in the more expensive technical-engineering areas. However, the low cost is more the result of overloading teaching facilities - with predictable results on quality- than of especially efficient methods or low resource requirements.

More important still is the fact that the distribution of students between fields bears no relation to quantitative manpower needs of the Bolivian economy. The result of the observed imbalance is, on the one hand, a widespread unemployment or underemployment of individuals trained in law and economics; on the other, a large exodus of doctors to more affluent areas of the world. In a survey carried out in 1967-68 ^{1/}, only 68% of recent male graduates from faculty-level programs were fully employed, with 21% partially employed and the remainder either unemployed or separated from the labor force.

Another imbalance occurs between the enrollment (and graduate output) in faculty-level programs and those at the middle-level of education. Only 17% of all students are in middle-level programs, working toward technical and first-professional occupations in business, industry, agriculture and public administration. These 3,500 students, added to the 1600 in post-secondary schools administered by the Ministry of Education, give a total of 5,000 indi-

^{1/} Ohio State Study

viduals training toward this type of career. Given the high rate of attrition occurring in both systems, the graduate output is clearly unable to meet the needs of the economy in corresponding occupations.

The latter do not go unfilled, however, since faculty-level graduates in excess supply are employed below their formal qualifications level as technicians or first-professionals, to the point where they displace individuals specifically trained for these jobs. Overall, therefore, the manpower needs of the Bolivian economy are met, but at an excessive cost in resources and personal frustrations.

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E. Education Financing

1. General Analysis

The main source of finance for Bolivian education at the elementary and secondary levels is the general fund of the national government, distributed primarily through the Ministry of Education, with the independent resources of "decentralized" national agencies and various private sources covering about 19% of total expenditures. The latter amount does not include a substantial, but unrecorded, contribution of pupil families to the upkeep, supplies and equipment of their local public schools. By contrast, higher education at the Bachelors and graduate levels receives only a quarter of its resources from the central budget, depending for the rest on a variety of earmarked taxes specific to each university and on a small complement of fee contributions. The post-secondary education of technicians and first-level professionals goes along two distinct tracks, one an extension of secondary schooling, the other an option offered by universities; each track is financed as part of the larger system to which it belongs. At no level of post-secondary education is the contribution of the private quantitatively significant.

a. - Information base

The quality of the information provided varies in accordance with the source of financing:

Expenditure figures from the Ministry of Education and decentralized national agencies appear reliable and are available in consistent fashion over an extended period of time up to 1973. However, the absence of program-budgeting within the Ministry prevents a reliable allocation of expenditures between different levels of education or different areas, except with respect to teaching personnel.

Expenditures of Universities are available in some detail for one year (1973), and a gross estimates for another (1970). Uniform program budgeting has been introduced during 1973 under the authority of the National Council of Higher Education (CNES), and it is reflected in 1974 budgets that could serve as models for the remainder of Bolivian education.

Expenditures in the private sector of education are available in good detail for a 1970 sample of private schools covering three quarters of the private-school enrollment. However, no information is available as to the representativeness of the sample and there is no comprehensive source for other years.

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It is known that municipal governments and rural communities expend substantial resources on the building, renovation and upkeep of schools. The amount, however, is neither measured nor amenable to estimate at this time. More generally, the problem of tracing the path of public school construction and of its financing is made difficult by the involvement of at least four public agencies in addition to the one designated for this purpose (CONES) and, within CONES itself, the existence of several plans separately funded.

As in most countries, expenditures on educational activities of the non-formal type are even less well recorded than the activities themselves. The only figures reported in this section are those of the fairly formalized adult literacy programs financed by the Ministry of Education and by one decentralized agency (COMIBOL).

No attempt was made to incorporate the education component of police and military activities (except for the Civic Action branch of the Armed Forces); this exclusion extends to training academies for all uniformed services.

b. Gross Domestic Product and Educational Expenditure

Two different totals of Bolivian education expenditures are presented in Table IV-26 for a series of six years ranging from 1965 to 1973. Both series are compared to corresponding measures of the gross domestic product in current pesos.

The first series includes estimated expenditures of all sectors, with the exception of unrecorded expenditures at the primary and secondary level supported by special family contributions. The second series includes estimates of these additional expenditures. Neither set of aggregates is truly comprehensive, however, since the absence of relevant data, forces the exclusion of such items as the capital expenditure of universities, the expenditure on private post-secondary education, and much of the direct expenditure of municipalities and communities on school facilities.

The more inclusive expenditure represents approximately 6% of the gross domestic product and has been relatively stable over the last decade. Because the estimate of additional family contributions is based on a constant peso amount per pupil in all years, it is likely that it excessively "flattens" the expenditure series, i.e. the rate of growth of the GDP percentage may have been faster than indicated in the table. The less inclusive expenditure now reaches 51.2% of the gross domestic product, and it has been rising slowly from 41.2% in 1965. Note that the "family contribution" component should not be viewed as a mere academic refinement of the expenditure

computation: The items it purchases (school supplies and equipment, school upkeep, school transportation) are an essential part of the education process and are routinely budgeted by schools and governments in more developed countries.

TABLE IV - 26 Gross Domestic Product and Total Education Expenditure
1965 to 1973

(in million current pesos)

YEAR	1965	1967	1970	1971	1972	1973
Gross Domestic Product	7,180.0	8,979.0	12,080.0	13,145.0	15,271.0	19,852.0
Total, education expenditures, excl. spec. fam. contributions	315.9	448.5	588.0	650.6	785.3	1,037.8
Percentage of GDP	4.4	5.0	4.9	4.9	5.1	5.2
Total education expenditures, incl. spec. fam. contributions	410.4	556.3	716.3	787.2	931.7	1,194.4
Percentage of GDP	5.7	6.2	5.9	6.0	6.1	6.0

Source: GDP: Boletín Estadístico, Banco Central

Expenditures: Aggregation of subsequent Tabulations

c. National Budget and Education Budget

The term "expenditure" in all other sections of this report refers to payment obligations incurred during the year in support of designated activities, i. e. to the value of resources committed. In the public sector of education, this amount is generally close to that shown in the latest revised budget for the year - and revised budget figures were, indeed, used for 1972 and 1973 in the absence of reports on cumulated obligations. Because of normal payment lags, however, and in view of the constant growth of budgets from year to year, the

cash flow recorded for the year by the Treasury is less than either the amount (finally) budgeted.

The problem met in inter-budget comparisons is that no official and uniform recording of obligated amounts is available: Figures were obtained from the Ministry of Education up to 1971, but not for the total of national government activities. Accordingly, ratios can only be reported in terms of recorded Treasury cash flows to, respectively, the Ministry of Education and the total of national agencies. The Education Ministry takes close to 30% of the "Treasury" and the percentage would be higher still if education funds spent by other national agencies were included. This high figure is not excessive, however, in view of the high degree of centralization of education financing in Bolivia. (see d.)

d. Distribution and Source of Education Expenditures

The distribution of expenditures is shown for 1972 in a cross-classification by (a) level of education, (b) source of control and (c) environmental condition (urban vs. rural). The distribution refers only to recorded expenditures, i.e. it excluded the portion supported by special family contributions. ^{1/}

In most respects, the pattern is as expected: underfinancing of rural education, heavy concentration of resources in the elementary grades, neglect of first-level post-secondary training in favor of higher university education. With respect to control however, the private sector is somewhat less prominent than in some of the neighboring countries.

^{1/} Also excluded are capital expenditures of universities, expenditures of post secondary private education, and the majority of municipal or community expenditures. Capital expenditures, which are reported as aggregates for each sector in further sections, have been prorated by level in proportion to operating expenditures.

A summary of financing sources is provided in Table IV-28 for the aggregate of all education expenditures (1972). The two alternative columns correspond to the two alternative rows in Table IV-26, i. e. with and without the inclusion of unrecorded expenditures from family contributions in public primary and secondary education. Figures are aggregated from individual tables presented in further sections. 2/

2/ Service payments to universities in Table IV-28 are estimated to originate as follows: students and families: 19.5 million; corporations: 2.1 million; central government: 2.0 million.

TABLE IV-27 Distribution of total expenditure by level, control and environmental condition, 1972

(In million of current pesos; Totals in million U.S. dollars)

	Urban				Rural				Urban & Rural				Mil U. Dol
	Public	Decen- tralized	Private	Total	Public	Decen- tralized	Private	Total	Public	Decen- tralized	Private	Total	
Pre-primary and Basic	177	24	32	233	136		8	144	313	24	40	377	11
Intermediate	59	11	17	87	9		1	10	68	11	18	97	
Secondary	90	8	22	120	9			9	99	8	22	129	
Post-Secondary First-level	39			39					39			39	
Higher education (Bachelor's and higher degrees)	118			118					118			118	
Adult literacy	18	7		25					18	7		25	
TOTAL	501	50	71	622	154		9	163	655	50	80	785	39
In Million U.S. Dollars	25	2	4	31	8			8	33	2	4	39	

Source: Aggregation of subsequent tables.

TABLE - IV- 28 Financing Sources of Total Expenditures, 1972

(In million current pesos)

	(1) Not including Special Contributions of Families.	(2) Including Special Contributions of Families.
<u>National Gov't</u>	581.0	581.0
General Fund	495.3	495.3
Earmarked Tax Revenue	85.7	85.7
<u>Other Governments</u>	36.4	36.4
<u>Communities and donors</u>	11.3	11.3
<u>Bus. Corporations</u>	51.9	51.9
<u>Students and families</u>	85.2	231.6
<u>Foreign Aid</u>	19.5	19.5
TOTAL	785.3	931.7

Source: Aggregation of subsequent tables

As in previous Tables, the count is less than fully comprehensive, especially with respect to community and municipal contributions (the latter mostly to construction and upkeep). Nevertheless, the figures are significant in several respects:

-The general-fund contribution of the national government (the portion subject to the annual budgetary process) is only 63% of the total excluding special family contributions, or 53% of the more inclusive total. Another 15% (or 13%) is generated by earmarked percentages of a variety of tax revenues (including provincial and municipal revenues), going primarily to the support of universities. In the short-run at least, university budgets are beyond the reach of policy, being tied to whatever revenue shares have been allocated to each campus in the courses of legislative history.

-Pupils, students and their families together contribute 11% of total resources if unrecorded expenditures (and corresponding contributions) are left out, 25% if all expenditures are counted. While the very small expenditure of students in higher education could stand some increase (under some appropriate loan system), there is little doubt that special contributions of parents in the public school system add a strongly regressive element to the financing of Bolivian public education. All non-government sources together account for 21% of the reduced total, or 34% of the inclusive total, suggesting that any future policy directed at expanding education resources in Bolivia must deal systematically with the revenue potential these sources represent.

2. Elementary-Secondary Education and Related Programs

a. Public Sector

At the elementary and secondary levels, the public sector of education enrolls 81.7% of all pupils, up from 67.2% in 1965. The share of total operating expenditures at these levels has always been slightly less than its enrollment share: 80.7% in 1973, 66.0% in 1965. The sector is almost entirely financed through the national Ministry of Education and is centrally controlled by it. However, pupils (families) make substantial contributions, both to the Ministry's budget and to special accounts of their local schools, and they generally pay for their own supplies and transportation.

In addition to elementary and secondary education (the latter enrolling only 7.3% of its students in technical professional courses ^{1/}), the Ministry of Education controls and finances post-secondary programs leading to first level degrees in technical - professional areas, including teacher-training programs. The operating expenditure on this level of education is only 6.6% of the Ministry's total. Another 6.5% goes to support adult literacy programs.

(1) Operating expenditures

Operating expenditures are shown in Table IV-29, by level of elementary and secondary education, separately for the urban and rural areas, and for six years ranging from 1965 to 1973. Expenditures on post-secondary education and on adult literacy are shown separately in Tables IV-30 and 31.

^{1/} This ratio rises to 11.3% if rural teacher training schools are included.

TABLE IV -29 Primary and Secondary Education, Public Sector Operating Expenditures by Level, Urban and Rural 1965-1973 (in thousands of current pesos)

URBAN

Year	1965	1967	1970	1971	1972 ^{1/}	1973 ^{1/}
Pre-Primary	4,527	6,382	7,404	8,327	9,771	12,883
Basic (1-5)	72,654	100,504	119,580	131,391	152,038	198,044
Intermediate (6-8)	20,623	30,538	41,222	46,110	54,195	71,555
Secondary (9-12)	19,390	29,027	62,159	71,468	83,461	109,589
TOTAL	117,194	166,251	230,365	257,296	299,465	392,071

RURAL

Pre-Primary	59,443	79,724	104,996	113,315	131,404	171,490
Basic (1-5)						
Intermediate (6-8)	2,033	3,653	6,777	7,252	8,453	11,080
Secondary (9-12)	3,310	4,813	6,441	7,218	8,359	10,897
TOTAL	64,786	88,190	118,214	127,785	148,216	193,467

URBAN AND RURAL

Pre-Primary	136,624	126,600	231,033	253,033	293,213	382,417
Basic (1-5)						
Intermediate (6-8)	22,656	33,991	47,999	53,362	62,648	82,635
Secondary (9-12)	22,700	33,840	68,600	78,686	91,820	120,486
TOTAL	181,980	254,441	348,579	385,081	447,681	585,538

^{1/} Based on revised Budget figures. Final audited expenditures are not yet available for 1972-1973.

Source for Estimates: Ministerio de Educación y Cultura. Documents of: Dirección Nacional de Planificación Educativa, Dirección de Planeamiento Educativo, Ministerio de Finanzas Departamento Económico y Programación Presupuestaria.

Comisión Episcopal de Educación: Costos y Financiamiento de la Educación Pública en Bolivia. La Paz, 1973

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TABLE IV - 30 Non University Post-Secondary Education (urban teacher training 1/ and first-level technical-professional training). Public Sector.

Operating Expenditures 1965-1973.
(In Thousands of current Pesos)

Year	1965	1967	1970	1971	1972 <u>1/</u>	1973 <u>2/</u>
TOTAL	3,255	7,120	13,697	16,421	22,245	32,686

1/ Rural teacher training was offered until recently at the secondary level of education and is incorporated as such in Table IV-29. Note that in some sources, e. g. expenditure tables of the Departamento Económico y Programación Presupuestaria, rural teacher training is incorporated under post-secondary education.

2/ See footnote 1/ Table IV-29
Source See Table IV- 29

TABLE IV - 31 Adult Literacy Training. Public Sector
Operating Expenditures 1/ 1965-1973

(In Thousands of current Pesos)

Year	1965	1967	1970	1971	1972 <u>2/</u>	1973 <u>2/</u>
TOTAL	8,905	8,686	9,571	10,223	18,427	31,554

1/ Except for 1970 and 1971, estimates are subject to substantial error.

2/ See footnote 1/. Table IV-2).

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The figures in Tables IV-29, 30, and 31 are close estimates, based on several published and unpublished documents of the Ministry of Education and on an expenditure/cost survey carried out in 1970 1/. Direct use of expenditure figures available by level from the Ministry could not be made for the following reasons:

- a) Data by level are only presented for expenditures on teaching personnel. The Budgetary system of the Ministry is such that the imputation of other expenditures by level or region is not carried out.
- b) Three successive reforms in the structure of elementary-secondary education have occurred over the last ten years. From an original 6-6 system, changes were made to 5-3-4, then to 4-4-4, and back to 5-3-4. The result is that both enrollment and expenditure figures appear in different classification depending on the year in which they were generated.

The procedure utilized to derive the expenditure estimates can be described briefly as follows:

- a) Estimate of primary-secondary enrollments on a consistent 5-3-4 grade division from available enrollment series (divided along the dimensions urban-rural and public - decentralized-private).
- b) Calculation of tabulated expenditures based on a constant public expenditure per pupil at each level, urban and rural 2/, and on enrollments.
- c) Proportional adjustment of all expenditures for each year, to bring the total in the year in equality with total operating expenditures of the system 3/.

1/ See footnote to Table IV-29

2/ Expenditures available from 1970 survey; see footnote to Table IV-29.

3/ Operating expenditures were obtained each year by subtracting from total expenditures of the Ministry: (a) capital expenditures, (b) transfer to the Universities, and (c) transfer to the private sector.

The large rise observed in expenditure from 1972 to 1973 reflects in part the inflationary situation of the latter year. In real terms, the average expenditure per pupil at the elementary and secondary levels appears to have registered a slight drop between 1965 and 1973.

(2) Financing of current expenditures

Expenditures of the Ministry of Education are financed entirely from the general fund of the national government, except for a relatively small amount of "own resources" derived in part from the payment of examination fees (5 pesos for secondary-school graduation) and in part from an earmarked tax earnings. School pupils are also required to pay an annual registration fee of 10 pesos (\$0.50) which remains outside the Ministry budget and is spent by local schools for upkeep, supplies, books, etc. in accordance with Ministry guide lines.

In addition, school pupils are induced to contribute on various occasions during the year (in connection with special activities, national anniversaries, etc.) an amount estimated to average 115 pesos (150 pesos in large cities). Such contributions are illegal, even on a "voluntary" basis, unless sponsored and administered by parents' associations. The excess of funds collected over expenses of the special activities is utilized by schools to beef up their supplies and equipment.

Finally, pupils are responsible for their own supplies and transportation, at a cost estimated to average 100 pesos per pupil per year.

Unfortunately, none of these estimates is based on more than local experienced evaluations ^{1/} and there is general reluctance on the part of the Ministry's officialdom to discuss the existence of extra-legal school funds. Furthermore, it is not clear how much of the money collected serves functions other than strictly educational ones. The need for obtaining better figures on the family share is evident: If the present information is roughly correct, the actual expenditure per pupil in public education could be as much as 40% higher than appears from budget figures.

^{1/} A survey of parents carried out in 1970 (working-class section of La Paz) comes up with an average of 308 pesos per pupil per year for all family expenses. In terms of the estimates above, the total average expense is $15 + 115 + 100 = 230$ pesos, which is consistent with the 1970 findings given the expectation of much lower expenses in rural areas.

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and the percentage of expenditures on personnel would be in line with accepted standards of efficiency. In addition, serious questions would have to be raised concerning the overall incidence of public-education financing in Bolivia, for there is little doubt that family contributions are a regressive component of the total financing package.

(3) Capital expenditures

Since 1970-71, all school construction is legally under the control and financial responsibility of an autonomous public agency, the National Council of School Construction 1 (CONES), but neither the Council's control nor its funding have so far extended to more than a fraction of actual construction activities. In particular, CONES has stayed out of rural areas, having failed to collect from provincial and municipal governments the revenues earmarked for the financing of rural school buildings. The rural vacuum has been filled in part by two other agencies (Community Development and Civic Action Branch of the Armed Forces), and others (e.g. Rural Colonization) are slated to make additional contributions. But the substantial amount of work carried out in both urban and rural areas with the support of provinces, municipalities, communities and families remains unrecorded, and there is no doubt that the sum of "official" figures represents a gross underestimate of the national investment.

Construction expenditure figures for all the national agencies concerned are reported in Table IV-32, while Table IV-33 shows related agency expenditures 2. The dip experienced during the political crisis in 1970-71 has been followed by a quick return to previous trends, although, as will be seen, the recent effort has been largely supported by external funds. Furthermore, as reported in earlier sections, construction has been lagging dramatically over an extended period of time, so that the present pace of investment must be accelerated if acute space shortages are to be relieved in the next decade.

1 Consejo Nacional de Edificaciones Escolares. Note that the construction of Normal Schools remains under the Ministry of Education.

2 Expenditures were only available for CONES. In the case of the other two agencies, they are imputed as a fixed proportion to investment, the proportion being that observed in CONES. Imputed operating expenditure of the Ministry were not calculated.

TABLE IV - 32 Combined lower levels of education, public sector, capital expenditures, urban and rural. 1965 to 1973 (in Thousands of current Pesos)

Year	1965	1957	1970	1971	1972	1973
URBAN						
Ministry School Construction	18,000 <u>1/</u>	24,716	471	661	450	130
			4,774	9,541	23,886	30,991
TOTAL	18,000	24,716	5,245	10,202	24,336	31,121
RURAL						
Ministry Community Development Agency		735	1,531	1,635	2,735	5,688
Civic Action Branch of the Armed Forces			239	154	2,638	1,856
TOTAL		735	1,770	1,789	5,373	7,544
URBAN AND RURAL						
TOTAL	18,000	25,451	7,015	11,991	29,709	38,665

1/ Estimated

Source: Documents of Ministerio de Educación y Cultura:
 Departamento Económico y Programación Presupuestaria.
 Ministerio de Finanzas
 Consejo Nacional de Edificaciones Escolares (CONES)
 Servicio Nacional de Edificaciones Escolares
 Acción Cívica de las Fuerzas Armadas

TABLE IV -33 Combined lower levels of education, public sector, related operating expenditures of agencies engaged in school construction, 1965 - 1973 (In Thousands of current Pesos)

	1965	1967	1970	1971	1972	1973
School Construction Agency			400	1,496	2,206	2,900
Community Development Agency	1	77	160	172	287	597
Civic Action Branch of Armed Forces			25	16	277	346
TOTAL	1	77	585	1,684	2,770	3,843

Source: See Table IV - 32.

(4) Financing of capital expenditures

The funding sources of listed capital (and related) expenditures are shown in Table IV-34. It will be noted that both the Community Development Agency and the Civic Action Branch of the Armed Forces include "community contributions" in their report of sources. Clearly, such contributions are only a fraction of the unreported total of resources applied by communities nationwide.

Aside from foreign contributions available under two temporary plans, the financing of CONES operations is almost entirely dependent on the proceeds of an earmarked progressive tax on personal incomes (with 1% maximum), which is independently administered and collected. However inefficient the procedure and unresponsive the revenue, this mode of financing is welcome by the agency for its security from the vagaries of the annual budgetary contest.

The accumulation of reserves by CONES (starting with an inherited 5.9 million pesos in 1970 and growing to a total of over 12 million pesos in 1974) appears puzzling in the text of serious shortage of construction funds. The stated intention of the agency has been to free some of its funds for amortization and interest payments on a large construction loan which it hopes to secure.

TABLE IV - 34 Combined lower levels of education, public sector, financing of Capital and related expenditures, 1965 to 1973.
(In Thousands of current Pesos)

	1965	1967	1970	1971	1972	1973
A. <u>Ministry & School Construction Agency</u>						
- General Fund, National Budget	18,000	18,646	471	3,355	2,650	130
- Earmarked tax on incomes		6,100	8,000	9,000	11,000	13,000
- External Grants and Credits				3,151	13,288	20,000
- Reserves			-2,826	-3,808	-396	891
B. <u>Community Development Agency</u>						
- General Fund, National Budget	1	77	160	172	287	597
- Communications	4	294	612	654	1,104	2,275
- External Grants and Credits	7	441	919	981	1,631	3,413
C. <u>Civic Action Branch of the Armed Forces</u>						
- General Fund, National Budget			264	170	2,061	1,587
- Communities					854	615
D. <u>TOTAL</u>						
General Fund, National Budget	18,001	18,693	895	3,697	4,998	2,314
Earmarked Tax on Incomes		6,100	8,000	9,000	11,000	13,000
Communities	4	294	612	654	1,958	2,890
External Grants and Credits	7	441	919	4,132	14,919	23,413
(Reserves)			-(2,826)	-(3,808)	-(396)	(891)

Sources: See Table IV-32

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b. Decentralized Sector

The two national corporations, Corporación Minera de Bolivia and Yacimientos Petrolíferos Fiscales Bolivianos, enroll nearly 10% of all elementary and secondary "urban" pupils in their own, independently funded systems. Their share of the total expenditure is approximately the same, indicating that their expenditure per pupil is of the same order as in the public system. In 1965 the enrollment share of the decentralized sector (relative to the urban total) was over 11% and its expenditures represented 12% of the total. 1/ There are other signs that the quality of education offered by the decentralized systems, once highly regarded, has deteriorated both relatively and absolutely during recent years.

(1) Operating expenditures

Operating expenditures of the decentralized sector are shown by level for the selected years in Table IV-35. The estimation procedure is the same as in Table IV-20, using the adjusted enrollment table and actual total operating-expenditure figures for each year. The same process generates the expenditure figures reported in Table IV-36 for the adult literacy program of COMIBOL.

1/ The expenditure per pupil was 485 versus 435 in the public system; for the basic grades, it was 475 versus 400.

1/2

TABLE IV- 35 Primary and Secondary Education, Decentralized Sector,

Operating Expenditures by level, 1965-1973

(In Thousands of current pesos)

YEAR	1965	1967	1970	1971	1972	1973
Pre-Primary	2,351	2,400	2,490	2,625	2,839	3,660
Basic (1-5)	12,829	11,653	15,998	15,219	17,281	23,250
Intermediate (6-8)	4,737	4,286	4,758	8,014	9,163	12,434
Secondary (9-12)	1,165	2,618	3,784	5,242	6,454	9,302
TOTAL	21,082	20,957	27,030	31,100	35,737	48,646

Sources of Estimates: Documents of:

- Corporación Minera de Bolivia
- Yacimientos Petrolíferos Fiscales Bolivianos
- Comisión Episcopal de Educación op. cit.
- Agencies of the Ministerio de Educación y Cultura cited in Table IV-29

TABLE IV-36 Adult Literacy Training, Decentralized Sector

Operating Expenditures by level, 1965 -1973

(In thousands of current pesos)

YEAR	1965	1967	1970	1971	1972	1973
TOTAL	2,121	2,942	5,509	5,889	6,751	9,188

Source: See Table IV - 35

(2) Capital Expenditures

Capital expenditures are reported from original Table IV-37. Even though the decentralized sector appears to have invested far more than the public system in relation to its enrollment level and rate of growth, serious shortages of space have developed over the past years, indicating the need for additional construction.

TABLE IV - 37 Combined lower levels of education, Decentralized Sector

Capital expenditures
1965 - 1973

(In Thousands of current pesos)

YEAR	1965	1967	1970	1971	1972	1973
TOTAL	2,340	3,169	5,925	6,563	7,285	9,768

Source: Corporación Minera de Bolivia
Yacimientos Petrolíferos Fiscales Bolivianos

c. Private Sector

At the primary and secondary levels the private sector of education enrolls over 16% of all pupils in areas classified as urban, and (as an estimate) some 7% of rural pupils. ^{1/} Since expenditures per pupil do not differ much between the two systems, the resources utilized by the private sector represent about the same proportion of the total. Both the private enrollment and the private expenditure have been falling steadily as a proportion of the respective totals since at least 1960, although private enrollments kept rising until 1971 and have remained stable in the last two years.

(1) Operating expenditures

Table IV-38 shows operating expenditures of private schools by level, separately for the urban and rural areas, from 1965 to 1973. All figures are

^{1/} Estimated number of pupils enrolled in few accredited and mostly non-accredited schools. This enrollment (private rural) is excluded from all enrollment tabulations.

TABLE IV - 38 Primary and Secondary Education, Private Sector,
Operating Expenditures by level, urban and
rural, 1965 - 1973

Year	1965	1967	1970	1971	1972	1973
<u>URBAN</u>						
Pre-Primary	1,393	1,712	2,022	2,247	2,279	2,554
Basic (1-5)	19,668	20,832	22,170	24,327	27,229	33,860
Intermediate (6-8)	8,032	10,854	13,629	14,914	16,048	19,118
Secondary (9-12)	8,252	12,507	16,573	18,384	20,962	26,527
TOTAL	37,345	45,905	54,394	59,872	66,518	81,829
<u>RURAL</u>						
Pre-Primary	4,984	6,410	7,415	8,283	8,044	8,540
Basic (1-5)						
Intermediate (6-8)	242	311	588	721	839	1,082
Secondary (9-12)			202	195	215	263
TOTAL	5,226	6,721	8,205	9,199	9,098	9,885
<u>URBAN AND RURAL</u>						
Pre-Primary	26,045	28,954	31,607	34,857	37,552	44,654
Basic (1-5)						
Intermediate (6-8)	8,274	11,165	14,217	15,635	16,887	20,270
Secondary (9-12)	8,252	12,507	16,775	18,579	21,177	26,790
TOTAL	42,571	56,626	62,599	69,071	75,616	91,714

Sources of Estimates: Documents of: Ministerio de Educación y Cultura:
Dirección Nacional de Planificación Educativa.
Dirección de Planeamiento Educativo.

Comisión Episcopal de Educación: La Educación Privada en Bolivia. Visión General de su Economía, La Paz, 1972.

USAID: Estadísticas Económicas, 1973.

estimates obtained in two steps: (a) multiplication of enrollment at each level by a per-pupil expenditure available for 1970, and (b) deflation of the resulting expenditure figures by an estimated index of school-input prices. The 1970 expenditures are derived from an extensive survey of private education recently completed.

The average expenditure per pupil is slightly higher than in public schools at the elementary level, somewhat below at the secondary level. However, there is some unevenness in the expenditure per pupil among different classes of schools. Not only is the expenditure substantially lower in localities other than provincial capitals, but institutions enrolling primarily upper-class children spend almost twice as much per pupil as those enrolling working class pupils. On the other hand, the difference in expenditure between catholic, protestant and lay schools is not significant.

(2) Capital expenditures

The capital expenditure per pupil in the private sector is available from the 1970 survey. It is assumed the same in all tabulated years so that, in real terms (i. e. constant pesos), it declines beyond 1970 in association with stabilized enrollments, and increases up to 1970 in association with growing enrollments. The corresponding estimates are reported in Table IV-39.

TABLE IV - 39 Primary and Secondary Education, Private Sector

Capital Expenditures 1965-1973

(In Thousand of current pesos)

YEAR	1965	1967	1970	1971	1972	1973
TOTAL	3,675	3,817	4,137	4,354	4,303	4,183

Sources of Estimates: See Table IV-38

(3) Financing of expenditures

The 1970 survey provides the detail of financing sources reported in Table IV-40. The major source is registration and tuition fees, which account for over 72% of the total. Next come domestic subsidies (primarily government), followed by foreign donations and subsidies and, finally, various domestic and "other sources."

TABLE IV - 40 Primary and Secondary Education, Private Sector,
Financing of total expenditures, urban schools 1970

	%
Student Contribution	
Registration fess	7.7
Tuition fees	64.4
Subsidies	
Domestic	11.2
Foreign	2.0
Donations	
Domestic (private)	1.5
Foreign	3.5
Other Sources	9.7
TOTAL	100.0

Source: Comisión Episcopal de Educación:
La Educación Privada...

Financing by source is estimated in a different pattern for the selected years in Table IV-41. Funds from government are reported in accordance with national budget figures, 1/

1/ Government transfers to private education take the form of salary support of teachers requested by private schools to complement their personnel, rental of school facilities used singly by the private school or jointly with a public school and scholarships.

and other sources are assumed to cover remaining expenditures in the same proportion as in 1970. Funds from "other sources", together with domestic subsidies and donations other than from the government, are treated as originating from "communities".

TABLE IV- 41 Primary and Secondary Education, Private Sector

Financing of total expenditures, 1965-1973

(In thousands of current pesos)

	1965	1967	1970	1971	1972	1973
General fund.						
National Budget	8,542	9,958	5,917	5,873	5,792	5,790
Pupil Families	30,615	37,827	49,383	54,852	60,191	73,167
Communities	4,751	5,870	7,663	8,512	9,340	11,353
Foreign grants	2,338	2,888	3,771	4,188	4,596	5,587
TOTAL	46,246	56,443	66,734	73,425	79,919	95,987

Sources for Estimates: Table 19

Ministerio de Educación y Cultura:

Documents of the Departamento Económico y Programación Presupuestaria.

Ministerio de Finanzas: Estado de Tesorería del Tesoro Nacional

A more detailed analysis of financing by class of institution reveals the following features:

- (a) Tuition and registration fee revenues constitute the main source of funds for institutions charging tuition. For tuition-free institutions, the principal source is domestic government subsidies.

- (b) While domestic government subsidies go primarily to tuition-free schools (mostly catholic, and a minority), foreign funds support tuition-paying schools of all persuasions.

- (c) Domestic subsidies and donations are concentrated in institutions serving predominantly lower-middle class students, while the subsidies and donations from abroad tend to support upper-class institutions. Note, however, that these conclusions are valid only for the formal system of education: The many services directed at the rural poor under various foreign initiatives are not taken into account.

(4) Additional Family contributions

No figures are available on unrecorded expenditures of families with children in "decentralized" schools. Figures were obtained for the private sector, showing that extra-cash contributions and purchases in support of the child's schooling are of the same order as in urban public schools. However, Table IV-42 below shows the estimation of "off-budget" family expenditures in all three sectors used in calculating aggregates in Tables IV-26 and IV-28. Clearly, the estimates are extremely conservative.

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TABLE IV-42 Lower Levels of Education
 Estimation of Family Expenditures not
 Incorporated in Formal School Budget
 (In Thousands of current Pesos)

A. Conservative Estimate

	1965	1967	1970	1971	1972	1973
Public Sector <u>1/</u>	104,743	121,722	136,584	156,458	169,420	182,521
Decentralized and Private Sectors <u>2/</u>	15,793	16,257	18,118	19,619	19,615	19,738
<hr/>						
TOTAL	120,536	137,979	154,702	176,077	189,035	202,259

B. Minimum Estimate

(incl. 3/4 conservative estimate in public sector)

TOTAL	94,350	107,548	120,551	136,962	146,680	156,628
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1/ 115 pesos per child in contributions to school
 100 pesos per child in own expenses

2/ 100 pesos per child on all accounts

Source: See text.

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3. University Education

Bolivian universities share to a modest degree in the preparation of first - level professionals and technicians, but concentrate their effort on studies leading to the equivalent of the Bachelors and higher degrees. This higher education is provided by eight public universities, one each in eight of the nine Bolivian Departments, and by the Catholic University in La Paz. Since 1972 the public universities are formally branches of the single Universidad Boliviana under authority of the National Council of Higher Education (CNES) 1. The uniform program -budget developed by CNES was not effective until the 1974 academic year, with the result that expenditure figures of the universities available to date cannot be imputed accurately to the various degree programs offered. In particular, the division of expenditures between upper-level programs and other post-secondary programs can only be approximate.

a. Operating expenditures by level (public sector)

Expenditure figures for all public universities are available only for 1973 and, in less detail, for 1970. The estimates presented in table IV-43 were obtained by applying the 1973 budgeted expenditure per student to enrollments in previous years, then deflating by a 1973-base index of education-input prices. Thus, the table cannot be used in connection with enrollment figures to analyze changes in real expenditure per student over the years 2.

The division of expenditures between the two levels is in proportion to enrollments reported for each level in 1973. The state of data does not, unfortunately, support a more rational imputation.

1/ Consejo Nacional de Educación Superior

2/ For 1970, the estimate is 15% higher than the gross figure available from other sources. This may reflect the fact of a rise of real expenditure per student over time or a decline in the 1970 expenditure due to the closing of universities during the period 1970-71. Local assessment supports the second hypothesis. Accordingly, the figures shown in the table for 1970 and 1971 are arbitrarily reduced to 90% of the initial estimate.

TABLE IV- 43 University education, public sector
Operating Expenditures by Level, 1965 - 1973
(in thousands of current pesos)

YEAR	1965	1967	1970	1971	1972	1973
Bachelor's and Higher Degree	27,745	51,371	89,724	93,886	117,983	157,859
First level professional and technicians	4,219	7,813	13,653	14,278	16,779	24,006
TOTAL	31,964	59,190	103,437	108,164	134,762	181,865

Sources for estimates:

- Documents of the Consejo Nacional de Educación Superior.
- USAID: Estadísticas Económicas, 1973
- Check for 1970 provided in: Comisión Episcopal de Educación: La Educación Privada....

b. Capital expenditures

The 1973 budget contemplates investments in construction and equipment amounting to 46 million pesos, of which 26.7 million will go to the construction of residential campuses with financing from special temporary excise taxes. In addition, some 16.8 million pesos are budgeted for debt servicing.

It is unclear at this point how much of the investment program has actually been carried out. Furthermore, no figures are available concerning additions to fixed capital in previous years: The only element of information is that construction has lagged behind enrollments, especially in the troubled years just past, with the result that universities now enroll twice as many students as their "optimum capacity" would permit. In the absence of any solid basis for generating estimates, capital expenditures of universities are excluded from all aggregate tabulations presented in the course of this analysis.

c. Financing of operating expenditures

Sources of financing of the total university expenditure are available for 1973, and the share contributed from the internal revenue of the national government is known for all tabulated years. Since funding sources of capital and operating expenditures cannot be separately identified, Table IV-44 is built on the assumption that (a) the internal-revenue share goes entirely to university operations, and (b) the remainder of operating expenditures is supported from each other source in the same proportion as total expenditures. ^{1/} The proportion applied in all years are those observed for 1973, the only year for which they can be calculated.

TABLE IV- 44 University education, public sector
Financing of Operating Expenditures, 1965-1973
(in thousands of current pesos)

YEAR	1965	1967	1970	1971	1972	1973
Earmarked percentage of total internal revenue National Government	15,700	19,131	25,273	29,950	36,345	57,050
Earmarked percentage of tax revenue, Departmental and Municipal Governments	6,018	14,821	29,921	28,939	36,415	46,181
Earmarked percentages of local excise sales tax and fee revenues collected through National Government	6,343	15,624	30,485	30,485	38,383	48,678
Students and families Sale of services	3,903	9,614	18,758	18,771	23,619	29,956
TOTAL	31,964	59,190	103,437	108,164	134,762	181,865

Source: CNES data

^{1/} However, the special financing of residential campuses is excluded as a category, and the amount budgeted for the construction of residential campuses is excluded from total expenditures.

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The first line item in Table IV-44 represents a fixed transfer of 5% of the direct-tax revenue of the national government, which is paid to the National Council of Higher Education via the Education Ministry budget, then distributed by the Council to the eight university branches. The criterion of equalization of expenditures per student among universities plays only a minor role in the distribution, at least in the short run. A main objective of the Council is to reinforce the instructional resources of newly created or lagging universities, even if their present low enrollment results in a high expenditure per student. Both the present inequality of expenditures among universities and the less than transparent policy of the Council are illustrated in Table IV-45.

TABLE IV-45 University Education, public sector
CNES contribution per student and annual expenditure per student, by University, 1973
(in current pesos)

	Cocha- bam- ba	Chu- quisa- ca	La Paz	Oru- ro	Tari- ja	Santa Cruz	Potosi	Beni
Operating Expenditures Per Student	4,132	5,982	6,687	7,927	11,078	10,422	10,383	37,831
CNES Contribution per student	1,473	2,372	1,180	2,666	5,141	2,344	3,482	12,845

Source: CNES data

The second item in Table IV-44 consists of a fixed legal percentage (20%) of the tax revenue of provincial and municipal governments. The third item represents revenues from a large array of excise taxes, sales taxes, legal fees, etc., collected by the national Finance Ministry, of which some fixed percentages are turned over to individual universities. Under both items, the funds going to the university in a given Department derive only from revenue collected in that Department, i. e. the tax revenue of its "prefectura" and municipalities, and the various special revenues it generates. Furthermore, the list of special revenues from which a university receives a percentage, and the percentages themselves, vary greatly among Departments, depending on the political muscle which each Department and university has

been able to apply over time. 1/ The system results in large inequalities of revenue, reflected in a large variance of the expenditure per student among the eight universities.

The final item in Table IV-44 consists primarily of student fees and payments for food services. Fees of various types average about 200 pesos (\$10) per student per year, and another 100 pesos or more is contributed as a "deferred payment" over life in the form of fees for certificates and recordings. Note that the figures overstate the contribution of students and families to the funding of direct education costs in two ways: (a) through inclusion of individual food expenses, and (b) through lack of exclusion of student aid paid out by the university. The full amount is incorporated as a private contribution, however, since it certainly understates the total cost of university attendance to students and families. 2/

It is evident that the financing structure of Bolivian universities cries for reform. Not only does the system generate unwarranted inequalities between provinces, but its aggregate financing is totally unresponsive to demand, whether the latter is controlled within the framework of a national policy or allowed to follow its present course. Calculations carried out by the National Council of Higher Education suggest that the rate of growth of earmarked revenues will fall drastically short of the desirable growth of enrollments and expenditures. While imaginative policies (i. e. loan systems) could expand the revenue from student fees, the present vector of ideological forces in the country may prevent any serious action on this front. The immediate solution must come from the incorporation of university financing in the general budgetary process or, if the latter cannot be trusted, in the specification of a simpler, more equitable, and more elastic system of earmarked revenues.

1/ As expected, the list in each Department tends to include items with the largest revenue potential in that Department.

2/ Incorporation of the whole cost of food services in the current expenditure is justified on similar grounds.

4. Shortcomings of the Public-Decision Process: Budgetary and Financing

One serious problem of Bolivian education identified in section H is the lack of any structure capable of providing planning services and conducting supportive research. Were better planning available to the Education Ministry, however, its benefits would be largely neutralized by the fact that the two public-decision processes concerning, on the one hand, the annual education budget and, on the other, the financing of education activity, are incapable of responding to pre-established program or policy guide-lines.

a. Budgetary Process

It is evident from the record that the process by which resources are allocated to the several components of public education leaves little room for national and informal policy:

-The position of education in the annual budgetary competition is weak as a result of insufficient evidence concerning the performance of the system, as well as the relation of performance to resources applied. The absence of any sort of program budgeting within the Ministry (to the point that resources expended by level of education or region cannot be accurately calculated) is a major factor in this situation.

-The process by which expansion of the education budget is checked also results in a virtual dictation of the budget structure by the Finance Ministry. Briefly, the Education Ministry budget is adjusted from one year to the next by making allowances for (a) the employment of new graduates from normal schools (employment guaranteed by law), net of teacher retirement, and (b) inflation in the cost of materials and services, including teacher salaries. Minor variation from this pattern may be negotiated between the Education and Finance Ministries, but the policy has been rigidly enforced in recent years. Not only does this process close the door to any rational shift in resource use on the part of the Education Ministry (except with respect to geographic location of education activities), but it generates undesirable shifts of its own: The rise in price of supplies and non-contracted services is generally underestimated, with the result that their share of the budget keeps declining in real terms.

- In the case of such decentralized agencies as CONES (school construction) and CNES (University Education), budgeting again escapes any kind of rational comparison of alternatives. The size of CONES' resources, and

thus the level of construction achievable in any year, is determined by the proceeds of an earmarked tax on earned income and an earmarked percentage of local-government taxes (which "prefecturas" and municipalities fail to turn over to the agency). Annual resources of the University system are similarly dominated by the proceeds of a multitude of earmarked taxes (or percentages thereof). Each new revenue appears to have been legislated as a matter of political expediency, often in response to deficits consciously incurred by universities and to threats of strikes by teachers or students. While CNES is empowered to control the budgeting and spending of all tax revenues transferred to individual universities - and to distribute its own earmarked percentage of government revenue according to the standards it sets - it is meeting serious resistance on the part of university administrators and has not yet succeeded in putting an end to willful deficit spending.

-The process of revision of the Education Ministry budget, primarily in response to teacher-salary adjustments, tends to reinforce the shift of budgetary resources toward personnel expenditures at the expense of other items. Until fairly recently, and especially during troubled times in the political life of Bolivia, insufficient control of expenditures by budget category resulted in further deterioration: The tendency was always to respond to pressures for higher salaries and employment, drawing needed resources from the investment, supplies and non-contracted service categories. At present, expenditure control appears to be tight at the central-government level, although some progress remains to be made with respect to the management of universities.

-The creation of decentralized agencies away from the Ministry of Education was, in part, a response to multiple slips in the budgeting and expenditure process. For instance, the establishment of CONES with its own, earmarked revenues, was to guarantee that school construction would not fall by the way-side in the course of budgeting or spending Ministry resources. This is a very imperfect solution, however, both because of the unresponsiveness of earmarked income to need (however determined) and of the difficulties likely to occur in the coordination of construction with the overall education programming of the Ministry.

- While functions have been decentralized to a limited degree - and with questionable results, the administration of school education by the Ministry remains highly centralized geographically. Such centralization extends to budgeting and to the expenditure of education funds.

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Aside from sending basic school information to the Ministry (mostly enrollment information), the only budgetary participation of local school authorities consists in the collection and administration of a local school-fund financed by a ten-peso (US\$ 0.50) annual registration fee of pupils. Even then, the distribution of the fund between such items as upkeep, supplies, books, etc. is highly regulated. ^{1/} Various reports do indicate that a far larger amount is collected from pupils under the auspices of parents' associations and administered locally. Officially, however, the budgetary role of school administrators - and of the local citizenry - is almost null. The implications are similar in nature to those drawn under the general analysis of administrative centralization in section H.

b. Fiscal Decision Process

The process of fiscal, or, more generally, financing decision, is nearly immune to policy considerations relating either to social distribution or to financing efficiency. Irrationality of the fiscal structure is a characteristic of most countries, whether economically developed or not, but some aspects of education financing in Bolivia defy logical analysis. It is evident that the present financing structure is the product of political expediency - an accumulation of special-revenue laws passed in response to temporary pressures for the financial relief or financial "independence" of particular agencies and institutions. Even the general-fund share of the Ministry of Education derives from a regressive taxation system built primarily on "easy to legislate" sales taxes.

There would be no cause for alarm were the accidental product of emergency decrees one that meets reasonable standards of social distribution and financial efficiency. While the documentation is still incomplete, however, our assessment reveals the following areas of weakness:

- The evidence points to the existence of substantial direct family contribution to the support of public schools, and it is likely that such contributions are highly regressive besides interdicting access to some children. Even if available reports of direct contributions are exaggerated, a similar effect occurs as a result of the obligation of families to pay for individual supplies, school clothes and transportation.

^{1/} A similar protection was recently accorded supplies when CONES was put in charge of the distribution of chalk and other small implements to schools.

- The lack of an adequate scholarship and/or public subsidy system in private schools results in a high level of social segregation, as well as differentiated levels of resources in accordance with social class of pupils.

- Not only is the financing of the "public service" component of education regressive (depending largely on sales and excise taxes at all levels of education), but the selective group admitted to higher education is allowed to reap substantial private benefits from the investment without contributing more than a small fraction of amortization costs.

- There has been no attempt to increase financing efficiency through better utilization of such sources as university graduates (future earnings), clients of the private sector, local governments and communities. This does not mean that substantial financing is, in fact, available from these sources, but the possibilities need to be examined systematically.

F. Rural Education

The Bolivian rural education system is fraught with problems of a serious nature, including administrative, communication, instructional method, instructional resource, and socio-cultural-economic problems, not the least of which is the multi-cultural multi-lingual society which is rural Bolivia.

The following section will identify the general problems considered to be primary constraints to the successful functioning of the rural education system. The following listings of problems and needs does not pretend to be exhaustive as these problems are multitudinous and multifaceted. The listings are representative of the comprehensive picture, and were selected from the Ministry of Education's Diagnóstico.

1. Administrative problems

A major concern of anyone familiar with the Bolivian rural educational system is the dysfunctional administrative structure and communication processes. A sampling of the general problems are listed below:

- Patterns of communication are poor in that feedback and exchange of ideas vertically (up and down the hierarchy) and horizontally (across the same "núcleo" group of "escuelas seccionales") is virtually non-existent, or at best severely inhibited.
- Individual schools and "departamentos" have traditionally had little voice in educational programs or in decisions that have affected them directly.
- There has been little systematic educational planning.
- Administrative personnel are political appointees not well prepared for their responsibilities.
- The political appointment process has created a heavily duplicated administrative system that utilizes its personnel poorly and succeeds in blocking communication.
- The authority in the structure is maintained at the national level with virtual all decisions of any consequence being made at, or requiring ratification from, national officials.

- Political instability at the national level has characterized educational administration for decades. This instability has drastically increased the costs of education due to the lack of program continuities.

2. - Curricular/Instructional Development Problems

Instructional problems were frequently pointed to in the Diagnóstico, but recommendations for improvement were not very specific. This is likely due to the fact that curricula in Bolivia are very traditional, and few individuals have had exposure to the methods and tools of instructional development. The general instructional/curricular problems are:

- Instructional content and method are very formal and rely heavily on the lecture - dictation- recitation approach. Such methodology necessarily requires that students quickly develop and aptly apply reasonably advanced reading and writing skills, even in the beginning grades.
- Instruction, reading and writing are primarily conducted in Spanish from the primary level on up. This, despite the fact that an estimated 70% of the total population and almost the entire rural population speaks Quechua, Aymara or another tongue as their native language.
- Instructional materials (texts, student workbooks, teacher guides, media) are frequently unknown in the rural areas, especially in the more remote "escuelas seccionales". Where such materials are available, they exist in insufficient numbers.
- Existing instructional materials are not responsive to the multi-cultural, multilingual needs of rural Bolivia.

Some of the more specific needs growing out of these problems were reported in the Diagnóstico, the consensus being that major improvement in rural education can come only through curricular change and instructional development programs. According to the Diagnóstico, some of the instructional needs are;

- There is a need to determine instructional priorities. (Such a determination should be prefaced by the selection of criteria through which instructional needs would be reviewed to determine their priority).
 - The instructional goals need to be determined as well as criteria for establishing the degree of successful achievement.
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- The instructional goals of each grade need to be based upon the socio-cultural - economic realities of Bolivia's heterogeneous society.
 - Rural curricula must reflect the experiential, cultural and social needs of the students as well as the technological needs of the country.
 - Instructional methodologies need to be changed so as to be more appropriate to the experience base and culture that the students bring to the classroom.
 - Instructional methods need to be improved and updated to be more consistent with the newer techniques extant.
 - Instructional methodologies must be changed so that students are encouraged to participate; so that they are not allowed to play a passive role.
 - There is a need to reform the curricula placing an emphasis on practical application of the theory taught.
 - The existence of any curriculum needs to be justified by the abilities, judgment, skills, knowledge and attitudes it provides students relative to the needs and interests of Bolivia.
 - Curricula must be developed so that it reflects continuity, coherence, coordination, practicality, and simplicity.
 - Instructional development must be based on research that describes the student audiences, the rural instructional setting, Bolivia's human resources needs, the instructional effectiveness of different methodologies, and the cost effectiveness of different approaches.
 - There is a pronounced need for better accessibility to instructional materials, media forms, and instructional equipment (lab equipment, tools, projectors, and recorders).
 - There is a need to inform teachers of the books and materials available through the Ministry of Education, UNESCO, and other sources.
 - The quality, regularity and accuracy of interpretation of instructional measurement must be improved. Teachers and School Directors especially need to develop these skills.
 - Curricula in the "Intermediate School" (grades 6-8) need to be designed so that rural students may choose to either continue their studies in the "Middle School" (grades 9-12) or leave the "Intermediate School" prepared for a vocation.
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- All curricular development must also provide teachers and the normal schools with orientation, guidance, and methodological suggestions for applying the new curriculum.

3. - Pupil Performance/Assistance

Another problem area where needs were suggested by the Diagnóstico was that of student performance and the provision of services to students. The main concerns are the improvement of student performance and student attendance. The most important areas include the following:

- There is a need to increase and maintain enrollments in the rural areas.
- There is a pronounced need to improve rural students' scholastic performance.
- The evaluation of instruction must be improved in quality, regularity, and consistency with pre-established priorities. Specifically, instruments and methods need to be established that will more objectively measure student performance. The intent is to unify (standardize) the methods, instruments, and criteria so that grade level promotions will become more just and consistent.
- Preventive medical, first aid and dental services should be provided to students in the rural schools, especially in the more remote parts of the country.
- Other services need to be provided to students in the rural areas including vocational counseling, and in some areas, the provision of meals and articles of clothing.

4. - Personnel Needs and Professional Development

Personnel management and professional development are one of the more serious needs in rural Bolivia. School Directors are not prepared in interpersonal skills and are frequently not able to create the working climate that needs to exist in their schools. Teachers are prepared in very traditional skills, their training being poorly coordinated and not carefully related to the socio-economic-cultural needs of rural Bolivia. Some of the most critical personnel needs are:

- There is an urgent need to develop a systematic program for the preparation of administrators in the basic skills of educational administration, as well as to develop practical certification standards.
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- In - service preparation and retraining programs need to be developed in the areas of instructional development, supervision, evaluation, and research, for Directors, Teachers, Supervisors, Central Ministry personnel, or others retraining to become such.
- Rural teachers need to be especially well prepared in evaluative, prescriptive-diagnostic skills, and in individualized teaching techniques inas much as they are frequently isolated in a one-room school where a wide range of ages and grades are represented.
- Teacher preparation programs need to be changed so that teachers will have the opportunity to acquire knowledge, and skills in the more recent scientific and technological methods and tools of instruction.
- Methodological suggestions, orientation, guidance need to be provided to teachers when new curricula are introduced.
- National office personnel need to develop skills and knowledge in the areas of educational administration, supervision, instructional development, instructional psychology, and evaluation.

Some of the needs related to the normal schools included:

- Change the teacher preparation programs of the normal schools to be more consistent with socio-economic-cultural realities of rural Bolivia. Also, develop similar director preparation programs.
- There needs to exist a well-defined educational policy on the rural normal schools that takes into consideration the social, manpower and cultural needs of the country.
- Programs, plans, methods, criteria for advancement, and entrance requirements need to be carefully coordinated among the normal schools and the technical institutes.
- There is an unnecessary proliferation of rural normal schools with the attendant dispersion of funds, facilities and human resources.
- The rural normal schools' productivity is low (high drop-out rate) and needs to be improved by better controlling the entrance requirements and by developing an entrance screening process that will reliably predict success of the applicants.
- Rural normal schools need to house ample libraries of resource works,

research, curriculum materials from all levels, and a variety of media forms for each of the grade levels.

Some of the needs related to improved working conditions and improved staff climate were:

- The teacher-pupil ratio is irregular from school to school and region to region: (the rural sector has a consistently higher teacher-pupil ratio than the urban sector).
- Communication between schools in the same "nucleo" structure is poor and needs to be improved for benefit of the teachers.
- Communication up the hierarchy needs to be improved, giving teachers a voice in the decisions that directly affect them.

5. - Management Problems

There are serious problems of management of facilities, schedules, and programs, on the local level. Many of the management problems on the local level stem from the fact that there is a severe shortage of human, economic, instructional materials and physical plant resources.

- Most "escuelas seccionales" are one-room, one-teacher schools with a range of ages and grades. Teachers need to be better prepared to cope with a variety of ages, interests, and abilities.
- Better physical plant facilities are needed. Rural educational facilities are extremely poor sometimes lacking even the basics of windows, desks, chairs and blackboards. Wooden planks supported by adobes at different levels provide desks and chairs. Sanitation facilities are non-existent to very inadequate. Storage space, sanitation facilities, instructional materials and equipment are needed in the rural areas.
- Geographic isolation is a reality with some rural schools, especially during the rainy season. There is a need to improve the frequency of communication with such schools, perhaps through the use of radio.
- The control of the design, construction, and maintenance of schools is barely existent and carelessly financed.
- Financing for construction needs to have as a major priority the schools of the rural sector.

- The scholastic schedules need to be adapted to the socioeconomic-cultural realities of each geographic region.

6. - Research as a Basis for Change

Without doubt, one of the most pressing needs of the rural Bolivian educational system is research. Research is needed that will describe the student, his culture, his attitudes and his learning style. The little educational information that is available is frequently self-contradictory, incomplete or not in a form that is readily usable. If curricula are changed as was suggested earlier, if teachers, directors and central office personnel are provided with in-service programs, if the manpower needs of the country are to be determined and kept current, if instructional materials are to be produced that will interest children who speak only Aymara or Quechua -- if these things are to take place in as effective and as efficient a manner as is possible, then continual, comprehensive, careful research is needed.

General research needs include the following:

- Students from different cultures and different regions need to be carefully described by research.
- The nation's population, birth rates, urban migration, projected economic growth, manpower needs, all need to be determined from research and used in planning educational programs.
- Grade level promotions and other evaluations of student performance need to be researched and standardized by regions, cultural group, and linguistic group.
- Research centers need to be developed in the various areas of the country and tied to the practical application experiences of the students in the rural normal schools.
- Careful research into the enrollment status and trends needs to be conducted so that reallocation of resources might be anticipated (personnel, facilities, and materials).
- Systematic research efforts need to concentrate on different methods, instructional materials, technological applications that might reduce costs and improve the rural education system's efficiency.

Even though the above lists of problems and needs of the rural Bolivian educational system is only representative, they are still formidable.

The problems are not insoluable, however, recent trends and efforts on the part of the Bolivian Government and international agencies hold promise for the future.

7. - Prioritization of Development Needs

Although the Diagnóstico identified the problems and needs of the rural sector, little attempt as yet has been made to prioritize them. No country, Bolivia included, has resources sufficient to attack all of their problems at once. A study performed in 1973 assessed the educational needs of the rural sector and prioritized them. This study, ^{1/} generated a list of educational functions. This listing was revised to suit the rural Bolivian setting with the assistance of a prominent Bolivian educator, Dr. Gastón Pol. Perceptions regarding the relative importance of these educational functions were collected from 689 teachers, directors, and central office personnel. The sample was thought to be representative of the rural educators in the Departments of Cochabamba, La Paz, and Santa Cruz. (10% of the total population of rural educators in the Departments of La Paz, Cochabamba and Santa Cruz.) The results of the study are interesting when compared with the needs identified by the Diagnóstico. Both the needs and the general headings identified by the study closely parallel the Diagnóstico.

The general areas of need identified and listed as the top six areas by the study were (in order of their priority):

- a. "Personnel Administration" which included improved working climate, improved lines of communication, improved interpersonal skills, improved certification standards and pre-service programs, the need for in-service programs (related to evaluation and new instructional methodologies).
- b. "Pupil Personnel" which included improved attendance, improved pupil performance, the provision of counseling and guidance services as well as first aid and preventive medical services.
- c. "Research and Development". This area included research into the Bolivian student, research that would identify instructional needs, research that would develop and test the effectiveness of different instructional materials and methods; in short, research that would discover problems, suggest solutions, and encourage change.

^{1/} Larrie E. Gale "Competence Required for the Principalship: A Methodology Applied to the Rural Bolivian Setting," (unpublished doctoral dissertation, University of Utah, Salt Lake City, Utah, 1973)

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- d. "Administration, Policy/Program Development". Included here were the needs for communication and input from the local level to the Department and national levels regarding educational policy and program development.
- e. "School Plant Organization and Control". As the heading suggests this area included management functions usually associated with the local level; planning schedules, processing the administrative paperwork, taking care of the physical plant, etc.
- f. "The Development of Curricula and Instruction". The needs falling under this heading call for curricular change in content and method and suggest that teachers and directors need to develop skills in the process of instructional development.

Obviously, the above listed areas cannot be separated completely from each other, but for purposes of planning solutions to some of the problems in rural Bolivian education the prioritization of areas of need could prove helpful. The above mentioned study also validated a list of functions that directors in the rural area are called upon to perform. Such a list could be used as a base for planning certification requirements for directors as well as in-service and pre-service preparation programs.

G. Teacher Training

Teacher education in Bolivia is conducted in normal schools which function at the upper-secondary and post-secondary levels. As the system is separated into urban and rural divisions, this discussion will follow that structure.

1. - Teacher Education: Urban

Urban Teacher Education began in June 1909, with the creation of the first urban normal school in the city of Sucre. Eight years later the "Instituto Normal Superior Simón Bolívar", was created in La Paz. At the present time there are five public and one private urban normal schools. Their names and locations are shown in the following Table:

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TABLE IV-16 Urban Normal Schools

	<u>Locality</u>
1. - "Escuela Nacional de Maestros Mariscal Sucre"	Sucre
2. - "Instituto Normal Superior Simón Bolívar"	La Paz
3. - "Escuela Normal Enrique Finot"	Santa Cruz
4. - "Escuela Normal Superior Técnica"*	La Paz
5. - "Instituto Normal Superior de Educación Física" *1	La Paz
6. - "Normal Católica" (private)	Cochabamba

Urban normal schools admit students who have completed high school (Grade 12) into a three- or four-year program. Students may choose streams which lead to primary, secondary, pre-school, technical, or physical education teaching. Only the secondary stream is four years. Additionally, there is a "Professionalization" program to upgrade presently employed teacher. Enrollment figures for 1972 show that 29% of urban normal school students were preparing for general primary school teaching and 54% for secondary. Enrollment figures are shown below for selected years:

*, * 1 The Diagnóstico Integral de Educación Boliviana regards the schools indicated as part of the "Instituto Normal Superior Simón Bolívar", while the National Director of Urban Normal Schools considers them as separate institutions.

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TABLE IV - 48 Enrollment in Urban Normal Schools by Specialization

	<u>1967</u>	<u>1970</u>	<u>1971</u>	<u>1972</u>
Pre-School	201	291	268	324
Primary	1, 113	1, 967	2, 287	2, 746
Secondary	1, 807	3, 418	4, 748	5, 178
Physical Educ.	128	219	229	277
Technical	160	275	251	280
Professionaliza- tion	415	428	600	762
TOTALS	3, 824	6, 598	8, 383	9, 567

Source: Estadística Educativa, 1972

The Table shows that there has been a rapid growth enrollments in recent years. Enrollments increased by about 20% annually between 1967-1972. It is interesting to note the enrollment distribution by grades in order to see the number of graduates the system is producing annually, and to estimate the amount or wastage occurring because of drop-outs. The following tables show the distribution of all those enrolled in three-year courses:

TABLE IV - 48 Enrollments in Urban Normal Schools; Students Preparing for Primary School Teaching

Grade	<u>1970</u>	<u>1971</u>	<u>1972</u>
1	1, 408	1, 733	2, 099
2	1, 011	1, 069	1, 305
3	761	833	985

Source: Estadística Educativa, 1972

Assuming that most of those enrolled in the third year graduate, the data suggest that the urban normal schools are probably now graduating 900 - 1,000 teachers/year for primary schools. Wastage would appear to about 30% of the entering class.

As noted above, students preparing to become secondary teachers must take a four - year program. Enrollments by grade are shown in the following Table:

TABLE IV - 49 Enrollments in Urban Normal Schools; Students Preparing to become Secondary Teachers

Grade	1969	1970	1971	1972
1	1,156	1,622	2,615	2,605
2	924	894	979	1,216
3	394	531	685	775
4	222	331	469	582
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TOTALS	2,796	3,418	4,748	5,178

Source: Estadística Educativa, 1972

The Table shows that the number of students preparing to become secondary teachers increased by 33% annually in the years shown. Outputs were nearing 600/year in 1972. Viewing the output more closely, it should be noted that those enrolled in the fourth year in 1972 presented only 50% of the entering class in 1969. Given the 1971 entering class of 2,615, we could expect output might reach 1,300 by 1974. However, the 1972 enrollment figures indicate that only 1216 of the original entering class remained. The drop-out rate from this program appears extraordinarily high.

These figures suggest two important questions for further study and consideration by Ministry officials. First, is the rapid increase in urban normal school enrollment justified in terms of desired or expected increases in school enrollments, and will the Ministry be prepared to meet the financial requirements implied by that increase? Second, cannot the inefficiency in the urban normal schools indicated by the high drop-out rates be decreased?.

While the operating expenditures for public urban normal schools tripled between 1967-1971, from \$b. 3, 412, 900, 00 in the 1967 \$b. 10, 108, 400. 00 in 1971, funds allocated for equipment and teaching material have disappeared from the budgets, and funds for maintenance of facilities have never been included. Administrative costs during those five years have increased 10% while teacher's salaries in the same period of time have increased 90%.

The student/teacher ratio in urban normal schools was estimated at 25.8 in 1971. There were approximately 37 students per classroom.

With respect to qualitative aspects of the program, the Diagnóstico Integral de la Educación Boliviana, in its volume devoted to urban normal schools, presents the following revealing statements about urban teacher education in Bolivia:

The analysis of the growth of the number of graduate teachers reveals an imbalance in that there is a low production of teachers for scientific and technical disciplines where the need is urgent and a considerable production of philosophy and social sciences teachers where the need is low.

Urban normal schools in Bolivia do not adequately teach the educational professional subjects (e. g. methodology, educational psychology, guidance, statistics) which are necessary to improve the quality of classroom instruction.

Ninty-seven percent of the professors in the urban normal schools in Bolivia have only a normal school academic preparation themselves.

Fifty-eight percent of the professors prepare their programs of study with no control or supervision from above.

There is no coordination of the subject matter content between related programs of study either for general areas or for areas of specialization.

There is anadequate interaction between the normal schools and the primary and secondary schools on question of curriculum and teaching methods.

There is little relationship between what is taught in the normal schools and what the new teacher is expected to know when faced with his class.

Normal school teaching methods are very much those of the "passive school": lectures, conferences and memorizing. Active teaching techniques are rarely utilized; hence the student's participation in the learning process is restricted. These students can be expected to utilize these same ill-chosen methods when they become teachers. Another problem encountered by urban normal schools is the lack of adequate facilities. Library facilities are minimal; laboratory facilities often are not used because of the lack of equipment or the lack of a trained teacher. Deficiencies in the facilities seriously hamper the development of an inadequate teacher training program.

2. - Teacher Education: Rural

Rural teacher education has been in existence in Bolivia officially since March 9, 1938, when the first rural normal school, Escuela Normal Rural Santiago de Huata, located in the Department of La Paz, was created. In fact, even previous to that time, the school that later became known as the Rural Normal School of Vacas was functioning unofficially in Cochabamba.

At the present time there are fifteen rural normal schools plus seven rural technical institutes training teachers for rural areas. The names and locations of these schools are shown in the following Table:

TABLE IV -50 Rural Normal Schools

	<u>Locality</u>	<u>Department</u>
1. Santiago de Huata - "Baustista Saavedra"	Santiago de Huata	La Paz
2. Warisata	Warisata	La Paz
3. Vacas - "Ismael Montes"	Vacas	Cochabamba
4. Paracaya - "Manuel Ascencio Villarreal"	Paracaya	Cochabamba
5. Caracollo - "René Barrientos Ortuno"	Caracollo	Oruro
6. Cororo	Cororo	Chuquisaca
7. Villa Serrano - "Franz Tamayo"	Villa Serrano	Chuquisaca
8. Caiza D - "José Berrios"	Caiza D	Potosí
9. Llica - "Franz Tamayo"	Sacaca	Potosí
10. Saca - "San Luis de Sacaca"	Sacaca	Potosí

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11. Chayanta - "Andrés de Santa Cruz"	Chayanta	Potosí
12. Canasmoro - "Juan Misael Saracho"	Canasmoro	Tarija
13. Riberalta	Riberalta	Beni
14. Portachuelo	Portachuelo	Santa Cruz
15. Charagua - "Humberto Ibañez Soruco"	Charagua	Santa Cruz

Rural Technical Institutes

1. Rural Technical Institute for Music Education	Tarata	Cochabamba
2. Rural Technical Institute for Physical Education	Tarata	Cochabamba
3. Rural Technical Institute for Agricultural Education	Belén	La Paz
4. Rural Technical Institute for Agricultural and Home Economics	Chimoré	Cochabamba
5. Rural Technical Institute for Health	Ucureña	Cochabamba
6. Rural Technical Institute for Agriculture	Corkue	Oruro
7. Rural Technical Institute for Rural Industries	Buen Retiro	Cochabamba

At least until 1970 rural normal schools offered a two to four-year program as preparation for teaching in rural primary schools. The length of training depended on how much prior education the student had. The basic options were:

1. After finishing primary education, a 4-year program for graduation;
2. With some high school work, a 3-year program;
3. After finishing high school (12th grade), a 2-year program.

The academic background of the rural normal school population in 1972 was grouped as follows:

TABLE IV - 51 Academic Background of Rural Normal School Students, 1972

	<u>EDUCATIONAL LEVEL</u>	<u>No. OF STUDENTS %</u>	
1.	Primary Education (1-5 grades)	98	3
2.	Jr. High School (6-8 grades)	540	15
3.	Some High School Work	2,518	71
4.	High School Graduate	<u>412</u>	<u>11</u>
	TOTAL	3,568	100

Beginning in 1971 four years of secondary education was established as the pre-requisite for entry into a rural normal school. This measure should help end the heterogeneity of previous entrance requirements and give uniformity to the work of the schools. Furthermore, since the new system would have the effect of reducing the average length of training if the enrollment does not decline, the number of teachers produced annually will increase.

The growth of enrollment and its division in rural normal schools is shown in the following Table:

TABLE IV- 52 Enrollment in Rural Normal Schools

Grade	1967	1970	1971	1972
1	905	924	1,274	1,297
2	862	967	1,106	1,232
3	982	1,062	1,536	1,624
4	<u>716</u>	<u>1,403</u>	<u>1,278</u>	<u>1,663</u>
TOTALS	3,465	4,356	5,193	5,896

Source: Estadística Educativa, 1972

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Enrollment has grown by about 11% annually between 1967-1972. The fact that enrollments are sometimes greater in the higher grades than in the grade lower of the previous year is a result of students with more than primary school entering with advanced standing. The current output of rural teachers, assuming that most of those enrolled in the fourth year graduate, is about 1,500-1,600 per year. Although it is impossible to estimate dropout rates from this data, the rate is believed to be quite high.

Another opportunity for increasing the efficiency of rural normal schools would appear to be in centralizing instruction in fewer institutions. The large number of rural normal schools tends to dissipate scarce resources and prevent the attainment of economies of scale. Closing some of the schools which have the least adequate facilities would probably yield a better output from the system at no additional cost.

The quality of instruction in the 15 rural normal schools shows considerable variation, but the average is clearly low. Most of the problems described above in the discussion of urban normal schools also exist in the rural normal schools, but in a more severe form. An indication of the capabilities of the rural normal schools can be seen from an analysis of the academic background of their staff.

TABLE IV - 53 Academic Training of Rural Normal Schools Staff, 1971

	Non-Normal School Teacher	From Urban Normals	From Rural Normals	Technical Teachers	With Post Graduate Work <u>1/</u> in ISER	With Post Graduate Work <u>1/</u> <u>Out</u> side of Country	Total
No.	7	8	205	13	148	32	413
%	2%	2%	50%	3%	35%	7%	100%

1/ After graduating from a normal school

The physical conditions of the rural normal schools are often extremely poor. Schools are often crowded and lack adequate dormitory and sanitary facilities.

3. - Relation to Other Elements to the Educational System

As is explained in the financial analysis, the budget of the Ministry of

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Education and the allocation of Ministry funds between various school levels is largely determined by the output of the normal schools. Since the Ministry is obligated to hire all normal school graduates as teachers, the budget is calculated by taking the number of teachers in the previous year at each level, subtracting those retiring, and adding normal school graduates. Once the teacher's salary budget is determined in this manner, almost nothing is left to pay non-salary costs. Thus, the enrollment of normal schools, and more specifically the output of normal school graduates, plays an unusually critical role in determining educational expenditures.

Unfortunately there is little indication that the expansion in the number or type of normal school graduates conforms to any set of Ministry or Government priorities. Thus, it is not clear how appropriate the current output of the normal schools is compared with the needs for teachers at different levels and of various types. In rural areas, for example, the large percentage of the primary school-age population not in school would suggest thousands of additional teachers are needed. However, the possibility of raising the existing student-teacher ratio might obviate much of that teacher demand. Clearly, a wide variety of considerations must be incorporated into a system of rational planning of educational resources. If planning is to replace the current system of unplanned growth, the first step in bringing the whole system under control must be to control the output of the normal schools.

The normal schools tend to have the same pivotal position with respect to quality considerations that they do in quantity considerations. The subject area knowledge and pedagogic technique that a new teacher has when he graduates from a normal school constitute a large percentage of what he or she will offer in the classroom for the next 20-40 years. Few if any areas of investment in Bolivia would have greater long-run impact on primary education than efforts to upgrade the training of future teachers in the normal schools.

II. Administrative Organization

In 1971 the Ministry of Education began to demonstrate a recognition of the need for structural and administrative reform. Education as an integrated system for the delivery of service to education clients did not exist. Instead, the urban/rural split existed at all levels and encouraged the building of uncoordinated functional offices. The urban/rural divisions also competed for limited resources.

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The system, as it existed in 1971 and, effectively still continues can be characterized as highly centralized at policy, planning, and management levels and subject to political ideological buffeting with personnel changes at top and second echelons. Historically, that buffeting has not resulted in effective programmatic change in education but in the changes of personnel at various levels. Too often those changes have been both political and personal patronage.

The structure, then, has a design which supports a politicized personalized system. Professional data inputs to policy and implementing decisions have been overshadowed by political data. Incumbents in management positions have been forced to rely upon support bases which were not related to professional substance nor performance.

Administration in the Ministry is largely an intuitive process. Its activity has not been supported by objective data in part because reliable data have not been available and in part because the use of objective data is not within the experience of incumbents. Even when good data are available rewards and incentives within the system are not related to national analysis and action.

The structure and management of the Ministry are geared to system maintenance rather than to change. Overlapping functions among units assures the need for large numbers of functionaries whose economic well being depends upon resistance to change. Thus it is perceived as essential that rural-urban, elementary-secondary, and technical-political dichotomies be maintained. Functional dichotomies such as the separation of curricular and supervisory roles are also maintained.

In such a system, delivery of educational programs to clients is essentially unplanned, uncoordinated, and inefficient. Problems of access and equity within the system cannot be seriously considered nor dealt with. Controls over professional certification, instructional quality, and administrative behavior are bureaucratic rather than professional. Goals cannot be made clear and evaluation must remain in the philosophic realm. There is no clear mandate for future programming because there is no memory of the inputs and products of past programs or actions.

For many years Bolivia has pursued a policy of improving the education of rural youth. Yet power is vested in population centers and the sensitivity to that power in the Ministry has effectively kept access to education within those population centers. Until efforts at integration are successful and until the coordination of management and programmatic functions begin to work,

access to adequate education for the rural child will be seriously limited. And until it is possible to adjust curriculum and method to the reality of the rural child's world, the absence of access to the system is of little importance.

The Ministry of Education is not a professional-technical organization. Its structure assures a closed system: little diffusion of power or decision-making, little capacity to respond to differences among clients, geographical regions, little acceptance of data which suggests change. It provides only a weak research capacity and no effective mechanism for program or personnel evaluation.

The Ministry is not managed in any technical sense of the term. Since its resources are heavily committed to personnel and since the manager's power rests in the patronage system, resources cannot be redirected. The system, thus, has great difficulties in establishing priorities and allocating resources to meet them. The present reform effort is essential to the development of a professional-technical system which is capable of accepting and acting upon new data inputs and of delivering improved educational programs.

PART V GOVERNMENT PLANS FOR THE SECTOR

A. The National Plan for Education

The five year National Education Plan for Bolivia is now being developed by the Planning Office of the Ministry of Education. The draft Plan is based on the results of the sixteen volume Diagnosis of Education in Bolivia begun in February 1972. It is scheduled for formal adoption in late 1974. As it is a part of a long range plan, it will be evaluated and revised annually.

It can be anticipated that the general development areas to be given priority in the Plan will include:

1. Attention to the quantitative and qualitative improvement of rural education.
2. Administrative reform of the educational system.
3. Expansion of intermediate and secondary urban education.
4. Creation of a center for the investigation and evaluation of rural education.
5. Diversification of technical education in accord with national and regional needs.
6. Expansion and improvement of educational supervision.
7. Improvement of teacher training in the urban and rural normal schools.
8. Investigation of the uses of television and educational technology for increased cost effectiveness in education.
9. Expansion and improvement of adult education.

A basic objective of the Plan will be to assist the population to obtain the technical and personal skills necessary for their own personal development and necessary for them to contribute to Bolivia's development. That implies placing emphasis on the needs of the 70% of the population (mainly rural) which is largely outside of participation in the benefits of modern society. Bolivia's planners are taking a realistic attitude toward change. They realize that they must recognize the attitudes and cultural patterns of the people who speak languages other than Spanish and have not been treated as citizens until recent years. They acknowledge that

legislation and crash programs may not be the means to produce the changes that will permit the integration of those people into effective participation in the national economy and culture. Thus the draft Plan focuses on reaching a major cross section of a community through both formal and non-formal education, on helping both youngsters and adults simultaneously to increase the knowledge and skills that will make a difference in their day-to-day lives, to expand their horizons beyond the limits of their own communities and to create opportunities for personal growth and economic development that will be real and tangible.

Bolivia's rugged topography, extremes in climate, lack of all weather roads, difficult communications, wide dispersion of population, and diversity of cultural and linguistic backgrounds make the collection of educational as well as other data extremely difficult. The latest national census was made in 1950. The state of the art of census taking at that time makes even this twenty four years old base a shaky one upon which to base meaningful projections.

Although many statistics are collected every year by the Ministry of Education, from individual schools and communities, the data are spotty and inconsistent. This makes it difficult for planners to determine the parameters of the educational system and the clientele it should serve. For this reason, in 1972, UNESCO and the Organization of American States helped Bolivia's educational planners to design and conduct a questionnaire-Type research project. The project went directly to students, teachers, school administrators, supervisors and parents, and drew upon their descriptions and evaluations of education in Bolivia. It is this data that has formed the main basis for the description of the sector contained in the Diagnosis.

The Diagnosis covers all areas of education under direct control of the Ministry of Education. It does not include university education nor does it treat in any detail non-formal educational activities.

Each section of the 16-volume Diagnosis was prepared by Ministry of Education specialists. Charts are presented with a high degree of accuracy. Interpretations of the material available are well prepared and stated. The inter-relationship among the chapters of each volume is clear.

Unfortunately, the Summary Volume of the Diagnosis is still not complete. The Ministry's Planning Office has not yet been able to finish their quantified analysis of the overall sector. Furthermore, the other sections of the Summary Volume are weak undoubtedly due to the lack of experience of the Planning Office in working with such a mass of data. Although automatic data processing was used in analyzing and tabulating the data apparently the programming used did not permit ready organization of the material for problem identification and for the evaluation of

alternative solutions.

Based on the conclusions and recommendations of the various volumes of the Diagnosis, the Ministry's Planning Office is developing a series of priorities and long range plans for educational development in Bolivia. The educational planners have consulted with the various departments and divisions of the Ministry as they have evaluated the Diagnosis and drawn tentative plans for the development of action projects to attack the major problems identified. However, their policy has been not to divulge the total Plan until the preliminary draft is presented to the Minister and his Administrative Council for their review and comments.

After revision by the Minister and his Council, the Ministry Planning Office will submit the revised version to the National Planning Secretariat and to the public for review. This review will utilize a concrete yet simple questionnaire covering the principal ideas of the programs included in the Plan. The questionnaire will be given to a representative sample of school directors in each level and type of school. Members of the Planning Office also will consult a cross section of leaders in each region of the country, to obtain their comments and suggestions. Thus it is expected that the final Plan, when it is published, will have the widespread support necessary for its effective implementation. It is anticipated that the Plan will be published in time for initial implementation steps to be included in the National Budget for 1975.

A significant obstacle exists to the effective preparation of the draft Plan. The Diagnosis has not been followed with a Prognosis or specific statement of what Bolivian education should look like at the end of the next five years or some other future bench mark. Nevertheless, the major deficiencies of the educational system that have been known for many years and a significant body of research - much of it incorporated in the Diagnosis - points the way toward some problem solutions.

The draft Plan expresses the basic Bolivian desire to increase the relevance of education, to enable the curriculum to be responsive to the demands of economic growth as well as to broader social and cultural needs. It will reflect the need to unite the country's culturally divergent and economically marginal people into a single nation.

B. Programs to Carry Out the Plan

The working document of the Ministry's Planning Office ("Structure for the Formulation of the National Bolivian Plan for Education") clearly

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recognized that an approved educational plan does not in itself cause change to occur. It offers a guarantee neither for the reformulation of the system nor for its readjustment to the new ideas proposed. A Plan is accomplished by collateral and timely measures including effective educational administration, courageous decision making, an adequate financial base, innovative experimentation, well designed programs, and a continual evaluation of the Plan in operation.

Thus, special commissions have been named in the Ministry to recommend programs for the reform of each level and type of education. Projects are then to be recommended for achieving program goals in both quantitative and qualitative terms. Both operational and investment requirements are being studied, as well as specific administrative and legal actions necessary for the proposed reforms. Programs are to be completed by the time the National Plan is formally adopted.

Programs are to be proposed for each level of education to improve the quality and methods of teaching, the introduction of new textbooks, experimentation with new educational technology, and the establishment of criteria for evaluating existing school facilities, equipment and staffing in relation to future needs. At the secondary level, special attention is to be given to the distribution of school enrollment by type of educational program agricultural, industrial-technical, commercial, teacher training arts, science and general or humanistic curriculums. The creation of new technical secondary school diplomas is recommended in areas, for example, such as mining and petroleum.

The proposed programs for teacher preparation include an intensive study of the exceedingly high cost and low productivity of present urban and rural normal schools. Also included is provision for making better use of rural normal schools. This includes the proposal to transform approximately seven unproductive rural normal schools into secondary-level agricultural institutes to serve the rural population. It is recognized and recommended that the rural normal school curriculum receive a complete overhaul, in order to prepare teachers to offer a new practical rural education program. Another major activity will be the professional improvement of teachers, supervisors and administrators already in service.

Still another program similar to, but significantly different than the non-formal education program, is that for the development of "Permanent Education for Adults." This program will coordinate the formal and non-formal adult programs operated by other Ministries, private and religious institutions, the Armed Forces, industry and the universities.

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It is anticipated that this program will be carried out by coordination committees at both the national and regional levels.

Under the cultural program of the Ministry of Education, activities will be developed to extend and improve both school and municipal libraries.

This program may be based on the UNESCO-Bolivia "Library Plan". It also will include the organization of a national library and documentation center as well as the improvement and expansion of museums, national monuments and archeological centers.

C. Rural Education Reform

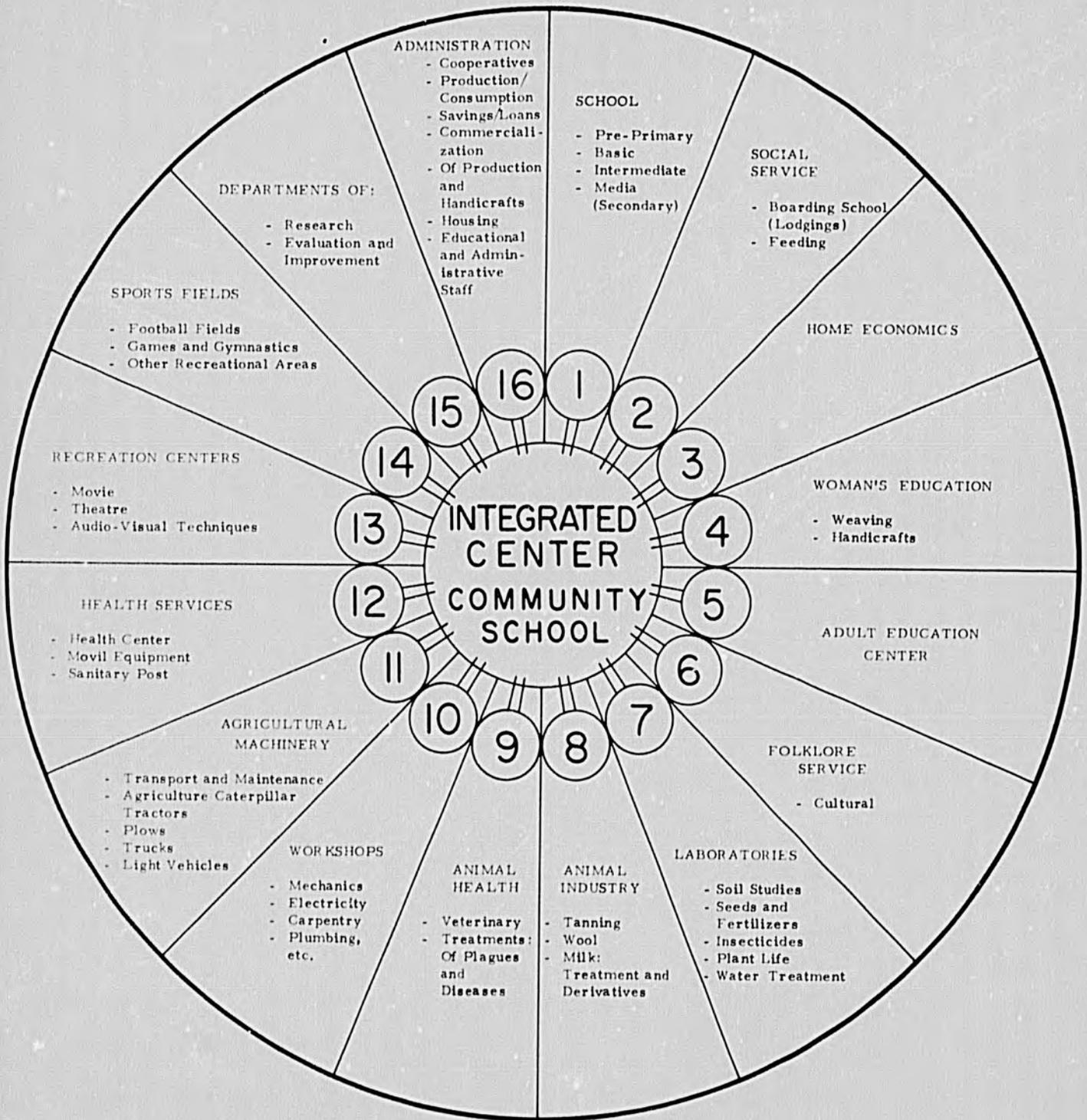
The proposed program for rural education is perhaps the most worthy of further comment.

Under the proposed rural education program, education is to serve as the catalyst for social economic and cultural development in rural areas. This is to be accomplished by the creation of integrated School areas. This is to be accomplished by the creation of integrated School and Community Centers, built by the community with support from the central government for equipment, supplies and materials. These Centers will focus the attention and support of several Ministries on an integrated approach to development. The zone of influence of each Center will be an area approximately 20 to 25 kilometer in diameter and will include between 7,500 and 10,000 families. Calculating that each family has an average of five persons, this would mean that a Center would reach the lives of between 37,500 and 50,000 people. Table V-1 presents a diagram of the 16 functions to be carried out by these Centers.

Each Center will consist of at least one large school complex which would include pre-primary, primary and technical, secondary school specializations. These "nucleo" schools would serve the upper grade needs of the area. A variety of smaller rural "feeder" or "satellite" schools might only provide 3 to 5 grades because of the low population density in their areas. Social service at the "nucleo" school would include boarding facilities for those students who must leave home because the nearby feeder school cannot offer further educational opportunities. A variety of solutions may be sought to permit the boarding facility to operate economically. For instance, much of its food is expected to be produced on land allocated to each school or purchased with funds received from the sale of its produce.

Family life education will be suited to regional needs. Since the woman is the very influential decision maker in campesino society, these programs will assist her to make better decisions regarding family and com -

TABLE V - 1 Diagram of Proposed School and Community Centers



Source: Ministry of Education planning office

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community life. Health, sanitation, food preparation, and child care will be emphasized. Another program for women is that of skill training in arts and crafts. These could help her contribute financially to the family and the community.

The Center's adult education program would be aimed at specific community needs beginning with functional literacy, to provide the adult with the equivalent of four years of elementary school education using new technologies. Production and marketing techniques will be stressed within adult programs.

Since basic to all education or learning endeavors is the maintenance of self-respect and cultural pride, each Center will develop a special cultural and folklore service to assure that the people in the region know and understand their heritage and how it relates to other cultures. An integration or inter-exchange of cultural activities with other communities is expected to assist in integrating and strengthening the concept of a single Bolivian nation.

To put ideas learned in the classroom into practice, a series of laboratories would be provided in each Center. These laboratories may include the study of soils, seeds and fertilizers, insecticides, treatment of plant life and treatment of water for sanitary purposes. The industrialization of life-stock would be another area of emphasis since the production and marketing of animals play an important role in the rural economy. Therefore, the Center will teach such skills as wool production, meat production, the commercialization of milk and its derivative, and tanning. Basic veterinary medicine also will be taught to support animal husbandry.

Basic shops are proposed for general mechanics, electricity, carpentry, plumbing, and other relevant skills. Training in the maintenance of agricultural machinery and transportation equipment will be stressed. Each Center will have a basic number of agricultural tractors, plows and other implements as well as trucks for transporting produce to market and light vehicles for supervision and service throughout the area.

Health services at the Centers will be integrated with other Ministry of Health programs. It is expected that each Center will contain simple medical and pharmacy facilities and will have the equipment necessary to move seriously ill persons to the nearest appropriate facility for treatment.

So that they may develop in an orderly manner based on continual evaluation and research, an evaluation and improvement unit would be set up in each Center. Closely linked to the Ministry of Education Planning Office,

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this unit would also serve as a laboratory for work in rural education research sponsored in Bolivia under the Andres Bello project for Andean countries. Bolivia expects to assume the leadership role in this project.

Finally, the Centers would encourage the formation of cooperatives for agricultural production and marketing, for consumption, savings and loan and for the commercialization of locally produced arts and crafts.

Although the program is still in a rather tentative state and most of the aspects need further study, there can be no doubt concerning the emphasis which the Government gives to finding realistic ways of reaching the rural population with educational activities designed to make a practical difference in their lives.

D. - Administrative Reform

The educational program for which plans are most concrete is that concerning administrative reform. In fact activity in support of that program began in 1971 with technical assistance from San José State University, financed by A. I. D. An ad hoc Administrative Reform Council (CRA) was set up and funded by the Ministry to work as a counterpart technical development team with San José.

The reform analysis centered around basic administrative process areas:

1. - Organizational structure
 - a. Central
 - b. District
 - c. Local
2. - Administrative management
 - a. General administration
 - b. Personnel administration
 - c. Financial management
 - d. Instructional leadership

- e. Supervision
- f. Organizational development
- g. Communications
- h. In-service training

The principal task given the reform team was to integrate the disconnected rural and urban educational administrative services and to develop more effective systems for management. There were two constraints on the study: (a) no one was to be released or fired; and (b) even though the normative concept of integration was accepted, it was understood that both rural and urban education were to maintain their program identities. The reform design developed within a long tradition of centralized power and a lethargic bureaucracy and with little direction from the existing power structure.

A primary phase in the project was a major program in organizational development. All principal educational studies, conferences, previous reform efforts and other research material were carefully analyzed by the team and participants from the Ministry. A number of organizational "rearrangements" were developed and tested for their adaptability to the Ministry's needs. Gradually a proposed design was developed and agreed to. In this respect it is important to note that over the past two and one half years, the reform group worked under four different Ministers of Education. Each Minister, in his own way, affected elements of the design. However, all of the Ministers constructively endorsed the concepts of rationalization, decentralization and integration. It was to these three organizational goals that the reform program addressed itself.

Rationalization: One of the primary organizational designs coming out of the reform is the separation of administrative management services from the technical, pedagogical services. Heretofore, management and other administrative functions were diffused among all levels of the Ministry. The new administrative division created under the reform is built around four sections: (a) finance; (b) personnel (administrative and certificated teaching staff) (c) purchasing; and (d) other auxiliary services. Major emphasis has focused on personnel administration and to a limited extent on program planning and budgeting. Responsibility for teacher and administrative personnel has been completely reorganized, and new filing and data collecting procedures are to be implemented.

In the technical divisions of the Ministry a number of administrative

improvements have occurred. Integrated curriculum and orientation units have been created to serve all public education levels. Guidelines for administrative decision-making have been developed. Rural and urban department chiefs together are now working toward solving educational problems. For the first time in the history of public education in Bolivia, rural education is on a par with urban education, at least as far as the administrative organizational structure is concerned.

Decentralization: Because of the centralized nature of educational policy-making in Bolivia, the concept of decentralization is limited to the more administrative-managerial type activities. That is, decentralization, as conceived in this reform, refers primarily to those activities that deal with administrative functions rather than with any decentralization of policy making authority. The National Code of Education will remain the criterion for curriculum development; there will still be a single national teacher salary schedule; and organization at the district and local levels will mirror the Ministry of Education's central organizational profile.

However, a number of activities previously performed at the central Ministry offices are now programmed for district and local operation. These activities center around teacher personnel questions, curriculum adaptation and the purchasing and storage of materials and supplies. A new administrative unit- Servicio Integrado Distrital de Administración (SIDA) - has been created to perform at the district level the appropriate decentralized aspects of the work performed by the central division of administration. Moreover, the thrust of the administrative reform plan is to expand each SIDA into its district's major teacher development center, intended to take major steps to lessen the existing duplication of effort and to integrate the urban and rural systems.

Integration: Functional integration is to be effected through programs of the division of administration and each SIDA, and of the departments of orientation and curriculum. However, it is important to note that there will continue to be a need for distinct educational programs for rural and urban children, respectively. As long as rural and urban normal schools and teachers are differentiated, and as long as great disparities exist between the urban and rural cultures, there will have to be differentiated and compensating programs for the two sectors. The administrative reform plan specifically deals with integration of administrative management functions.

E. - Evaluation of the Realism of Program Plans

The draft National Educational Plan and the administrative reform

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plan are ambitions undertakings. In evaluating their chances for success, a number of aspects of the Bolivian political-administrative environment must be taken into consideration, since they are factors which largely will influence the degree to which the plans and programs are implemented over the next few years.

First, strong inertial forces orient Bolivian education toward serving an urban clientele. The urban-rural split in Bolivia is not only a physical and geographical separation but also a cultural and economic separation. In both a cultural and economic sense, the rural peoples make up the "have-not" sector. The forces for change come from a small urban group who share the philosophy of the 1952 Revolution and who share a vision of a strong integrated nation, building on the cultural strengths of both urban and rural peoples. It is important to note that there is no strong pressure from the rural campesino to be incorporated into the national economy; there is no strong force from below for cultural integration.

Second, a strong cultural bias continues to orient all levels of education toward classical, traditional courses of study. There is no wide -spread clamor for vocational, technical education. There is intellectual understanding of the importance of technical training and its relation to national development, but this understanding is not reflected in career choices of youngsters within the school system not by their parents or, at least, not by those with an effective political voice in making demands on the educational system.

Third, the administrative system of all government agencies is and, predictably, will continue to be highly centralized. The men at the top change continuously, but one thing remains the same; each new "jefe" brings a strong sense of personalism to his job. He is the organization, and his will shall be done. Within this administrative culture, the effective delegation of authority is extremely difficult to achieve. The educational system is one element of this overall administrative system and culture, and it can be anticipated that there will remain a highly centralized organization with strong personal direction from the changing Ministers and from the key "jefes" in the system.

Fourth, the Bolivian political culture admires plans and planning as an intellectual exercise. All institutions of government are more or less constantly planning and revising plans. Typically, each new executive in office causes a new set of plans to be developed that can be considered "his". Too often, whatever a predecessor may have planned is rejected, not on its merits, but merely on the basis that some one else made the plans.

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One remarkable fact in the development of the present draft Education Plan and the administrative reform plan is that they have become institutionalized, in the sense that they represent an effort that has survived through the tenures of several Ministers of Education. Whether or not they also will survive the transition from one government to another is a serious question.

In this "realistic" or "pessimistic" perspective (depending on one's point of view), what are the prospects for the current educational plans? They are clearly expressive of the minority views that the urban-rural imbalance should be corrected; that the direction should move toward vocational technical themes and away from classical traditional approaches; and that better central and district administration involves more rational systems and less personalized power. These are recurring views in Bolivian thought, especially in the past twenty years. Perhaps their time has come and, if not in their entirety, at least in part they will gain broader acceptance. This is the way progress occurs.

PART VI THE ROLE OF FOREIGN ASSISTANCE IN EDUCATIONAL DEVELOPMENT

A. Past and Present U.S. Assistance Programs

Official U.S. assistance to Bolivian education can be divided into two time periods: 1944 to 1963, when the Education Servicio was in operation, and the period since 1963. During the first period, emphasis was on rural and vocational training and on teacher education. In the subsequent period, emphasis has been given to a human resource survey, to textbook development and to the reform of educational administration. Throughout both periods, the U.S. has assisted with school construction and with foreign training for Bolivian teachers and technicians in a variety of fields and under a variety of assistance. Unofficial U.S. assistance, although impossible to quantify, has been considerable over the years in the form of foreign scholarships, programs of professional interchange, and contribution by U.S. social service groups to Bolivian private non-formal and formal educational programs.

2. The Education Servicio 1944-63

In September and October 1943, the Ministers of Education of the Americas met in Panama to discuss Inter-American cooperation in the field of education. From this meeting germinated the concept of establishing Educational Servicios in Latin American countries as a means of fostering professional interchange and educational development in the American Republics. In September 1944 a basic agreement was signed by Bolivia and the U.S. to establish the Education Servicio (Servicio Cooperativo Interamericano de Educación SCIDE) in Bolivia.

The initial program of SCIDE emphasized two topics:

1) urban education, especially as related to industrial arts, and 2) rural education, including vocational agriculture. Technicians from both the U.S. and Bolivia were assigned to develop and carry out the programs in these two areas. After 1952, when rural education was transferred to the newly created Ministry of Campesino Affairs, SCIDE cooperated with both that Ministry and the Ministry of Education. The various amendments to the basic agreement modified the SCIDE program into three elements:

1. - Rural education
2. - Industrial arts education
3. - Vocational agriculture education

Under its program in rural education, SCIDE assumed responsibility for the rural normal schools in Warisata in the La Paz Department, in Paracaya and Vacas in the Cochabamba Department and in Canasmoro in the Tarija Department. Various rural nucleo schools were also operated by SCIDE as experimental demonstration centers. During the years from 1957 to 1961, SCIDE had a regional office in Cochabamba to coordinate its field activities in the Cochabamba and Santa Cruz areas. Late in its period of operation, SCIDE gave emphasis to in-service training for non-certified rural teachers, to the construction and repair of school buildings, and to textbook publication.

In its industrial arts program, SCIDE paid special attention to development of the Pedro Domingo Murillo vocational school in La Paz; and in vocational agriculture, on development of the Muyurina vocational school in the Department of Santa Cruz.

During its nineteen years of operation the total U. S. contribution SCIDE was \$2,291,500. On an annual basis this contribution averaged \$120,000 and never exceeded \$200,000 per year. The staff of SCIDE included over the years sixty American technicians who worked an average of two to three years with the project and 272 Bolivian technicians and administrative staff who worked, in many cases, for long periods with SCIDE. The Bolivian staff were not removed for political considerations with the changes in Government or Ministers of Education. Each American technician had a Bolivian counterpart who worked with him at the same level in the organization. As was the case in all Servicios, there were two co-directors, one an American and the other a Bolivian.

The operation of SCIDE can be summarized under the following activities:

a. Teacher training

Seminars were held within Bolivia and abroad for the in-service training of teachers. These were typically held during school vacation periods and included groups in the fields of rural teacher preparation, rural sociology, agricultural development, home economics, industrial arts, vocational training, basic instructional subjects and methodology, supervision and school administration.

During the life of the project, 875 non-certified teachers were upgraded to full certified status through SCIDE courses and 1,500 other teachers and administrators attended the range of short courses mentioned above.

b. Improvement in instruction

In the model schools with which SCIDE worked, emphasis was put on replacing the traditional instructional method of copybook memorization with more modern, practical instruction in the classroom and outside. Audio-visual methods were introduced, school gardens and school lunches were initiated, and workshops in various crafts were started, as well as student clubs of the 4-H type and associations of parents and teachers to strengthen school-community relations. Seventeen vocational departments were established in selected secondary schools, and major equipment inputs were channeled into the one industrial arts school of the country, the Pedro Domingo Murillo school. A vocational agriculture school was established in Muyurina, Santa Cruz which later was turned over to the Salesiano fathers for operation. An artesanía (crafts) center was sponsored by SCIDE in the Cochabamba area to develop weaving skills and commercialize the products.

c. Improvement in school facilities and equipment

SCIDE assisted with the construction of improved facilities and provided needed vehicles and equipment for the rural normal schools and the rural nucleo schools with which it was directly related. It also helped to improve existing facilities or construct new schools in selected urban communities and in over 100 rural communities. Vehicles and office equipment were provided for rural district school supervision offices in Cochabamba, Potosí, Sucre, Tarija and La Paz.

d. Textbooks and instructional materials

SCIDE published 1,235,388 copies of thirteen primary school textbooks for grades one through six. The largest number published of a single volume was 366,028 of a first grade text entitled "Tres Amigos". Teachers guides were also prepared for these basic texts. The texts were distributed free to urban and rural, public and private schools throughout the country.

In support of the adult literacy program, SCIDE published and distributed 367,000 copies of eleven texts without charge. Two hundred thousand of these were entitled "Rural Awakening" and were published in three separate editions for the Altiplano, Valleys and Oriente plains areas. Forty thousand copies of the "Juan" series were published, which also have been widely used in Central American and other adult literacy programs. Eighty thousand post-literacy books were published for the use of newly literate adults.

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In addition, SCIDE published 40,000 copies of 400 different titles in guide materials for teachers, school supervisors and administrators. These materials were particularly oriented toward the rural normal school teacher, the rural teacher, the industrial and vocational arts teachers, and the district school supervisor. These also were distributed without charge.

In 1970, two Bolivians, Professor Alberto Toranzos R. and Ing. Julio Dalence L., were asked by USAID to prepare a history of the SCIDE project. In their analysis of the project, 1/ they identified the following basic problems which limited the success of the SCIDE effort:

- 1) The constant changes in Bolivian educational authorities and in the American technical staff created problems in maintaining a continuity of activities.
- 2) The lack of receptivity to change on the part of the Rural Education authorities and on the part of the rural school directors and teachers, as well as the lack of rural community cooperation, hampered the progress of activities.
- 3) The lack of close coordination between SCIDE and the General Directorate of Rural Education caused constant misunderstandings and, together with the excessive bureaucratic constraints in both organizations, slowed down the process of introducing educational change.
- 4) The lack of understanding of the importance of technical cooperation, and the feeling that the Americans were imposing foreign texts and educational techniques on Bolivian culture caused a certain distrust of the project on the part of Bolivian teachers and administrators.

3. - U.S. Programs in the 1964 - 1974 period

Since 1964, the U. S. has contributed \$ 2.2 million in grant funds in support of educational development programs in teacher training, curriculum and textbook development, a human resource survey, and assistance for the Ministry of Education's administrative reform program. Another \$2.7 million under.

1/ U. S. AID Mission to Bolivia, Servicio Cooperativo Interamericano de Educación 1944 - 1963 94 page typescript La Paz, 1970. The material in this section has been drawn from this report.

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Program Loans 041 and 045 and Program Grant 610 has supported school construction activities and \$ 1 million from earlier counterpart funds has been used for the repair and construction of schools.

Teacher training, curriculum development, and textbook publication activities have been oriented toward assisting worthy Bolivian initiatives in these areas. No significant U. S. technical assistance has been provided in support of these programs. However, in 1968 and 1969 the Ohio State University, under an A. I. D. contract, carried out a human resource survey in cooperation with the staff of the National Secretariat of Planning and Coordination. The report of this study ^{1/} is one of the most important source documents available today in English on the education sector in Bolivia.

During the past two years, and AID-financed contract group from California State University at San José has been working with the Ministry of Education on internal administrative reform. The funding for this contract, which will terminate in June 1974, will total \$634,000. In addition, the Government contribution to the project has been \$ 200,000. A group of Bolivian administrative technicians, the Administrative Reform Council (CRA) was created to design and help to implement the reform program. This program has the following elements:

- 1) Decentralized administrative and instructional services.
- 2) Professional development of administrative personnel.
- 3) Research and systems development, especially in the areas of data for planning and management and budget systems.

The San José group has worked with the CRA technicians in the analysis of the current administrative system, in the design of new administrative structures at the national and district levels, and in the preparation of job-function-task descriptions for positions in the new units. In addi

^{1/} Thomas N. Chirikos, et al., of the Center for Human Resource Research, the Ohio State University, in cooperation with the Division of Social Planning, National Secretariat of Planning and Coordination, Human Resources in Bolivia 382 p. Columbus, Ohio April 1971.

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tion the project has provided training for 450 administrative personnel in the Ministry's central and field offices,

Other assistance related to education provided by the U.S. Government has included an average of fifty scholarships per year for university professors, teachers, and others related to the educational system, cultural exchange program, school construction assistance funded under various Loan and grant programs, approximately 50,000 books distributed per year in RTAC and USIS programs, and Food for Peace support for school breakfast and lunch programs.

4. Summary

Official U.S. assistance to Bolivian education over the past 30 years has touched most aspects of the formal educational system. Its results have been most significant in the area of bricks and mortar. Whether as a result of this assistance Bolivian education is better able to contribute to national development, is difficult to measure. There are far more schoolhouses than there were before U.S. aid began, and that is no doubt advantageous. However, there is little to indicate that the educational system has been made more productive or more helpful to national development as a result of such aid.

U.S. efforts have consistently focused on rural education needs, and teacher training, curriculum reform, and textbook publication, an earlier effort concentrated on vocational education while more recent efforts have concentrated on administrative reform.

The lack of better results to date probably is due to the size of the task, the discontinuity of plans and execution on both the Bolivian and U.S. sides, and attempts to implant foreign systems with inadequate adaptation to Bolivian conditions and needs. It certainly reflects major administrative and managerial inadequacies, not only within education but also within the central structure of Bolivian government. And, with particular reference to the rural areas, it may well reflect a shortage of anthropological and sociological research-based knowledge, without which, it may be inferred, existing cultural patterns have been barriers to progress instead of assets for efforts to achieve progress.

B. Other Donor Programs

1. - Introduction

Bolivian educational needs have attracted the attention and the help of a variety of international agency and bilateral assistance efforts.

As the poorest country in South America, Bolivia is not easy for these agencies to ignore. Once these agencies examine Bolivia needs, human resource development is certain to be one of the key areas of concern. Virtually all agencies provide foreign training opportunities to Bolivians, to the extent that it is a rare week when the newspapers do not announce some new foreign scholarship. In their assistance programs most agencies have affected formal education in one way or another; all agencies which have provided technical advisors can be considered as assisting in non formal educational efforts.

2. - The United Nations group

Of the United Nations agencies, the most directly related to education and most prominent in this sector has been UNESCO. It has been active in Bolivia for a number of years. Concentrating on technical assistance and training, both in-country and abroad. The two fields in which it has been most involved with Bolivian education have been educational planning and University scientific documentation systems. It has also contributed considerable quantities of laboratory equipment and other school equipment.

During the past two years, UNESCO has provided an educational planner who has worked closely with the Ministry of Education's staff in the preparation of the Ministry's Sector Diagnosis. He has assisted with the study design, with the development and administration of the questionnaires, and with the compilation, tabulation and analysis of the data gathered in the study. An expansion of the current UNESCO program is proposed to include support for in-country workshops, training in curriculum development, and in-service teacher training to follow-up on recommendations made in the Diagnosis. Approximately \$ 40,000 per year in advisory services is programmed by UNESCO for these purposes.

UNICEF has been active in supporting social development planning, including education, in Bolivia. A pilot planning project has been carried out in the Departments of Chuquisaca and Tarija and approximately \$ 1 million in UNICEF funds are programmed for the period through 1977 in implementing this plan in these two Departments and in extending it to the Departments of La Paz and Potosi. In addition UNICEF has provided laboratory and workshop equipment for rural normal schools and proposes to assist with health and nutrition educational programs.

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The UN World Food Program provides, to rural normal schools, food which serves both as budget support for the resident students at these schools and to assure that the students receive an improved diet. Food is also distributed to the rural demonstration schools related to each normal school.

The UNDP has expressed interest in financing a study in educational technology. This study to be carried out in collaboration with neighboring countries, will consider possible uses of television education by satellite and other technological advances applicable to education.

The concept of the project is that each country is to have a research and development center in the field of educational technology and that results are to be shared between the countries.

3. - The Organization of American States

The OAS has been active for many years in technical assistance and training programs related to Bolivian education. Since 1960, an average of 100 foreign scholarships per year have been provided by the OAS for training in a variety of development fields. A major share of these scholarships have helped strengthen Bolivian education.

OAS advisors have been provided from time to time in educational and social planning, in-service public administration training, and project preparation and evaluation. The OAS has sponsored one or more seminars each year within Bolivia on development themes. A two-man OAS advisory team has organized in-service training programs for school directors and educational supervisors.

4. - The Interamerican Development Bank

The IDB has provided loans to Bolivian universities for construction and equipment purchases. The following universities have participated in these loans:

- a. San Andrés University, La Paz. Faculty of Engineering for laboratory and library equipment and for the construction of laboratory buildings. Superior Institute of Basic Sciences to construct and equip facilities and for development of science teaching programs.
- b. San Simón University, Cochabamba. Faculty of Agricultural Sciences for construction and laboratory equipment and for scholarships, staff expansion and technical assistance

- c. Technical University, Oruro. Faculty of Engineering for construction and laboratory equipment, staff expansion and technical assistance.
- d. Gabriel René Moreno University, Santa Cruz. Faculty of Medicine and Veterinary Science for construction and laboratory equipment, scholarships, staff expansion and technical assistance.

The IDS is not now considering new loan activities in education sector. Its grant-funded technical assistance will provide help to the Planning Secretariat, especially in the area of project preparation and evaluation. It has been requested to help establish a revolving loan scholarship fund for higher educational studies and to provide funds for a study of educational finance. It is understood that the latter request is now in suspense.

5. - The World Bank (IBRD)

The IBRD has no educational assistance activity in Bolivia at the present time. The Ministry of Education has discussed with the Bank the possibility of a loan for school construction with particular emphasis on secondary vocational education.

6. - The German Government

The German Government has assisted with an analysis rural education development needs. It is anticipated that they will provide assistance to help implement this study in the Cochabamba, Chuquisaca, and Tarija areas. They also have provided technical assistance in vocational education, particularly in the mechanical arts through the Pedro Domingo Murillo industrial arts school.

The German Government assists six German schools in five principal cities of the country. Sixty teachers from Germany teach in these schools under contract with the German Government. In addition, German volunteers have worked in Santa Cruz and Sucre, primarily in education-related activities. Approximately 30 scholarships per year are offered to Bolivians to study abroad in various professional fields. Twenty industrial arts students are provided with scholarships each year to attend the Pedro Domingo Murillo school in La Paz.

7. - The Spanish Government

Spain has been particularly active in the area of vocational training.

It has provided technical assistance, equipment and texts to the Ministry of Labor's FOMO skills training program. The Spanish provide 10 to 12 scholarships for study abroad in various specialities. The Spanish Cultural Institute organizes conferences and cultural activities in Bolivia.

8. - The French Government

France offers an average of sixty scholarships for study abroad to Bolivian professionals and technicians. Four exchange professors of the French language are provided each year to appropriate Normal Schools. A French School is in operation in La Paz with the assistance of the French Government. Occasional advisors are provided to the Government in subjects related to education. The French have supported scientific research in Bolivia, such as the Chacaltaya cosmic ray laboratory.

9. - The British Government

Britain provides between 20 and 25 scholarships a year to Bolivia. These generally are for post-graduate university training abroad. British volunteers have provided teaching assistance at San Andrés University in La Paz and at other educational centers. Technical assistance, books and equipment have been provided from time to time to various educational institutions. The Pedro Domingo Murillo industrial arts schools has been helped in the area of textile equipment.

10. - Other Bilateral Programs

Argentina has helped with school construction, especially in those areas bordering on Argentina. Brazil also has assisted with school construction, and with the donation of school equipment and text books. It has indicated its willingness to help construct a technical school in Oruro. The Canadians have also helped with school construction. The Czechs, East Germans and Russians have assisted with metallurgy training in cooperation with the Universities in Oruro and Potosi. The Dutch government has been asked to help build technical schools in Chuquisaca and Tarija. The Israelis have assisted with training in the organization and management of cooperatives. Venezuela has provided both literacy texts and primary school texts.

11. - Summary

Other donors provide and will continue to provide to Bolivia a wide range of assistance supportive of formal and non-formal educational activities.

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We have no systematic evaluation of the volume nor the impact of this assistance. The educational authorities stress the importance of the UNESCO and UNICEF assistance in the past. The Ministry of Education has an Office of International Relation whose task is to try to keep track of this assistance and to coordinate it to the best extent possible. The challenge to the Ministry is to effectively apply the foreign assistance now available to priority areas, as well as to stimulate new flows to meet new needs and solve old problems. The Ministry realizes that it has not maximized the benefit which it could have received in the past from foreign assistance.

In part, the current emphasis on a Sector Diagnosis and the development of a National Education Plan has been to prepare a more logical basis on which to request and utilize foreign assistance to education. The Ministry planners foresee a series of specific projects flowing from the National Plan which can be presented to foreign assistance organizations for their consideration and cooperation. The Ministry staff, for example, has approached the various international agencies to sound out the possibility of dividing and coordinating assistance efforts in this manner:

UNESCO: Educational planning

OAS: In - Service training

UNICEF, USAID and other bilateral donors: Rural education

IBRD: Secondary vocational education

IBD: University education

This type of coordination would be valuable for all concerned: Bolivians and foreign agencies. The Bolivian absorptive capacity for a significant expansion in foreign assistance to Bolivian education, however, is a factor which should be considered. Each foreign program brings with it demands on the time of the Bolivian educational administrators and demands on the National Treasury for counterpart project funding.

At the moment, the question as to absorptive capacity may be academic. No other donor, with the exception of AID, is proposing a significant expansion of assistance to Bolivian education. However, a well - prepared National Plan and a complementary set of specific implementing educational projects may generate new or stronger assistance flows.

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Then without question, the Ministry will need stronger coordination efforts and better staffing and financing to provide the necessary counterpart support for broader foreign assistance.

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PART VII - THE MISSION'S PROPOSED ASSISTANCE PROGRAM

A. - Principal Characteristics of Present Bolivian Public Education

Despite allocation of extensive national resources, representing some 6% of current GDP and nearly one third of the Central Government's budget, Bolivia's educational system is falling far short of making its essential contribution to immediate national welfare or longer-term development. The system is geared to formal, traditional academic goals; yet only 100,000 or so of the nearly one million public school students are enrolled in post-primary schools. Worse still, while rural primary students account annually for more than one half of all entering students, not more than 5% of them complete the fifth grade and achieve functional literacy.

In assessing this situation it is important to keep in mind a couple of historical facts. First, compulsory mass public education is a much more recent phenomenon in Bolivia than in most other Latin countries; it essentially has occurred only in the past twenty years when the indigenous, rural population was folded into the public education system following the 1952 Revolution. Second, there has existed a mutual ambivalence between the public authorities, on the one hand, and the indigenous communities, on the other, as to the value of formal education for the rural populace. This has been reflected; (i) in the wavering manner in which organizational responsibility and financial support for rural education have been treated by the Government, and (ii) in the sharp contrast between the expressed interest of the rural population in enrolling its children in the educational system and in the students' actual staying power once enrolled.

As a result of these historic conditions, the system is suffering today from internal growing pains and from the results of a failure to devote substantial personnel and financial resources to educating the rural population -- e. g., in 1973 the rural schools received only 10% of the Ministry's operating expenses for the post-primary grades and none of its capital expenditures.

The continuing differentiation within the Ministry's organizational structure between rural and urban education further demonstrates this ambivalence, as do the separate training and certification standards for rural teachers, the grouping of urban and rural teachers into distinct labor organizations, the one-room, three-grade school house prevalent in the rural areas (90 % of the structures there are of this type), and the fact that the inordinate number of un-trained, un-certified teachers are entirely in the rural schools (nearly 50% of the total rural staff).

All of this is not to say that the imbalance in the educational system is a strict consequence of urban-dominated public policy. It has been after all, objectively beyond the available technical and financial resources for the Government in the past twenty years to deliver effective educational services to an often inaccessible rural population, whose own low cultural level and traditionally indifferent attitudes toward the established authorities exacerbate the difficulties. Furthermore, the attitude of the Government toward rural education has improved as is evidenced, for example, by the fact that Ministerial expenditures on rural education increased three-fold within the eight year span, 1965-1973.

The timing appears to be good for an externally assisted effort in support of Bolivian educational development. The Government is embarked on an important and well-considered program of administrative and educational reform. The public resources now assigned to education are substantial in absolute and relative terms. And, the principal external donors, particularly AID, IDB and IBRD, which in the past have avoided any sizeable financial assistance to the public school system, appear increasingly receptive to opportunities for providing such assistance, especially in light of indications that the Government's own priorities for the use of concessional assistance are moving toward the social in addition to the directly productive sectors.

2. - Major Sectoral Problems

This Assessment identifies a broad range of institutional and environmental limitations which are creating restraints on the capability of the educational system to contribute to Bolivia's economic development and the well-being of its population. Section C of this Part of the Assessment lists many of these problems and suggests schematically how they may be addressed by the Government and specific external donors. The problems which seem most important to us, and the Ministry of Education, are those pertaining to the goals of (i) remedying present managerial weaknesses in the Ministry, and (ii) improving the reach and quality of rural education, especially at the primary level. Of course, there are other important weaknesses in the sector which should be addressed if the system is to be more productive. These include the limited range of vocational technical instruction, the deficient urban school infrastructure, and the poor articulation between the university system and the lower school levels. But the priorities for immediate remedial action clearly lie within the areas of managerial improvement and better rural education.

a. - Management Improvement

A more efficient Ministerial management system not only would assure better and more equitable national use of the substantial resources presently being assigned to public education, but also would increase the system's general capacity to absorb the external resources it cannot now handle and the increased domestic resources necessary for the system's expansion and improvement. For example, at present (i) over 95% of Ministerial budgetary resources goes for salaries, leaving almost no room for counterpart financial or technical support to projects which might otherwise be of interest to the international financial assistance institutions; (ii) the Ministry lacks the capacity to develop in a timely manner educational policies supported by related research and analysis which would provide a basis for planning and implementing projects and programs attractive for domestic and external financing; and (iii) the over-centralization in the Ministry limits its ability to carry out action programs and precludes constructive interaction and dialogue with the field staff. Given these core problems, external donors by and large have not been attracted to extending financial assistance to the separate components of the educational system.

In short, it would seem that any hope for sustained improvement in the public educational system will require major improvements in its management.

b. - Rural Education

It is obvious that on grounds of equity very substantially increased attention should be paid to the education of the rural populace. It also seems convincing that, given the overwhelming predominance of the rural sector in the population and its rather poor performance in economic terms, increases in national productivity will be dependent to a significant extent on increases in the productivity of the rural sector. That conclusion, too, calls for more attention to the education of the rural population.

Furthermore, the poor performance in the rural sector is the most costly weakness of the Bolivian educational system. The most fundamental fact of rural education is that few children receive any lasting benefit from it. Whereas 63% of urban students graduate from the basic cycle (grades 1-5), only 14% of rural students do so. This record not only demonstrates the inefficiency of present rural education as a means to integrate the indigenous population into the larger society, but also underlines the wastefulness of substantial public resources. Since, in 1973, as much as 30% of the Ministry's total operating expenditures went for rural basic education,

ver 10% of the annual Central Government expenditures is now very poorly utilized. The reasons for this low performance are many, as discussed in Part IV of this Assessment. Perhaps the most important reasons in most observers' opinion are the lack of an effective curriculum relevant to the needs of rural children and a plain absence of educational offerings beyond the early grades. Most of the village level schools stop at the third grade; and, in most instances, the nearest school for the next two or three grades is a "nucleo" school too far away for the student easily to commute to it daily. Yet neither the Ministry for the school construction agency, CONES currently allocate capital resources to the rural areas. These areas are now dependent for financing of school construction on their own self-help efforts supplemented by such agencies as the National Community Development Service and the Military Civic Action program.

It follows from the drop-out rate at the primary level that scarcely any educational resources are assigned to rural education at the secondary level. Indeed, less than 4% of total secondary enrollment is in rural schools, which in 1970 accounted for only 24 out of 257 public secondary facilities. Moreover, there are essentially no privately sponsored secondary educational facilities in rural areas, as distinct from the situation in urban areas, where private education in 1972 accounted for 15% of total educational expenditures (nearly 20% at the secondary level) Thus, there is only minimal representation of the rural population in both secondary and post-secondary education-even in those of most interest to the sector, such as vocational agriculture at the secondary level and schools of agronomy at the university level.

In the face of these large and numerous problems, it is not easy to decide which is to be addressed and which is to be ignored - at least on a relative basis. Nevertheless it is clear that choices need to be made. Thus, we have decided tentatively to focus our efforts on programs aimed at providing an education at the primary level which will give the student literacy and the basic information, skills, and attitudes relevant to better rural living - e. g. receptivity to improved agricultural techniques, and information on nutrition and sanitation. Secondary level and university education will be addressed principally in their relation to the preparation of teachers for rural schools, since it would seem that greater benefits will accrue to more people in the rural sector by the achievement of widespread literacy and provision of basic, practical knowledge and skills rather than by a more rapid entry of a smaller number of rural youth into the ranks of those who are more technologically trained. Given the clear fiscal constraints, we should expect emphasis to be placed, at least in the early years, on (i) selected school construction related to the implementation of the new curriculum and the re -

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sulting hoped-for fall in drop-out rates and (ii) shifting in favor of the rural sector of the use of the expected growth in Government resources to be available for education.

B. Rationale and Strategy for AID Programs in Education

1. Relationship of Sector to Overall AID Strategy in Bolivia

The focus of the AID effort in Bolivia is on improving the welfare of the rural poor, particularly the small farmers in the valleys and the Oriente. Progress in achieving the improved delivery of effective educational services in rural areas would be supportive of efforts in other priority sectors which are to receive AID assistance; agriculture and health. An increasingly literate rural population, more alert to life's possibilities and better trained to take advantage of available opportunities, clearly would be essential to achievement of such other goals as increased agricultural production by the small farmer and reduced morbidity rates in rural areas. Thus, the proposed educational assistance strategy dovetails in key implementational aspects with planned approaches in agriculture and health.

In agriculture, we are planning to work with national level organizations on national programs but with emphasis on discrete geographical areas to be selected with the following criteria in mind; (i) significant numbers of small farmers would be directly or indirectly affected; (ii) the areas have potential for economic growth and for producing agricultural products of importance to the national economy; and (iii) what might be achieved in social and vocational increments in those selected areas will have utility for and be replicable in other rural areas. As regards our assistance activities in education, we plan to have a broader geographical coverage than in agriculture since it is necessary to have an improved education system geared to where the people are. However, within that broader coverage, we necessarily will have to select specific areas for at least initial concentration of resources with a view to (i) making a start on improved rural teacher training; (ii) developing curricula more relevant to the needs and cultural interests of selected regions; (iii) quantitatively expanding the educational infrastructural base and rural outreach in those selected regions; and (iv) trying out, initially on a regional basis, pilot activities in modern aids to education and in non-formal approaches to education for subsequent dissemination on a national scale. A basic criterion in selection of those specific regions will be the location of other cooperative AID activities in agriculture and health, with the goal of combining services and resources to the extent practicable. More concretely, we envisage working on this combined basis in areas such as the "New Lands" site in Santa Cruz and at least one of the regions to be served by the prospective agricultural service centers which we tentatively plan to assist in the Valley areas. Similarly, we would plan to work, at least initially, in these same areas in helping the Government to develop replicable rural health delivery systems

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region by region. We will also be taking into account the work in rural education of other donors in making decision on specific geographical areas; thus certain development assistance may be provided to important pilot activities in the Altiplano and other areas. The fiscal viability of the Government remains a vital underpinning of all sectoral development efforts and, therefore, is of continuing concern. The portion of the National Budget assigned to the Ministry of Education is so great as to warrant, for that reason alone, attention and assistance by the external agencies to help assure the more efficient utilization of nearly a third of budgetary expenditures, and that the foreseeable growth in demand for more educational services by an expanding population is absorbed to the extent possible by increased efficiency of the existing education system rather than, as has been the case to date, by simple financial and physical expansion of the system to the point where it might absorb as much as half of the Government budget.

2. - AID Assistance Strategy in Education

a. Overall Assistance Strategy

To attain the objective of improved rural education, the Mission has adopted the following sectoral strategy:

We will continue and, in early FY 1975, expand our financial and technical support to the administrative reform program of the Ministry of Education as a means to:

- i) Raise the overall efficiency of the Ministry, thus freeing additional resources for substantive improvements in education.
- ii) Decentralize administrative support and substantive program control to make the system more responsive to the needs of the regional educator and student.
- iii) Improve the technical qualifications of supervisors and teachers.
- iv) Provide improved channels and system for the flow and evaluation of data which will illuminate the educational needs and permit rational planning to meet those needs.
- v) Increase the relevancy and acceptability of curriculum content and delivery systems through carefully directed research and pilot programs.

We anticipate that by December 1976 the administrative reform and decentralization will be institutionalized, i. e., that it will be accepted by all levels of the educational system and will be adequately staffed and financed. The implementation of those steps should result in the following key Ministerial changes:

- a district-level system of basic administrative services and instructional development support functions required for the proper servicing of all teachers and children in any one Department;
- an on-going capability to provide pre-services and in-service training programs for educational administrators;
- an improved Planning Office capable of; (i) overall planning and analysis; (ii) identifying needs for, and carrying out, policy-oriented research (iii) assisting in the preparation of program budgets, (iv) managing the Ministry's Planning Information System, and (v) extending evaluation concepts and practices throughout the Ministry;
- an institutional capability at both the national and district levels of the system for the use of research in both long-term program planning and shorter-term instructional development activities;
- a capacity to gather, analyze, deliver, and utilize statistical information in a form that will best promote the productivity and efficiency of the system;
- a program budgeting system;
- an institutional base for a continued "relevancy reform" of the substance of education through a strengthened Curriculum Laboratory; and,
- a strengthened capability to coordinate and control construction of, conduct demand analyses for, and design, inspect and maintain physical facilities.

Although this administrative reform program will benefit the public education system as a whole, it should be of particular benefit to rural education. For instance, as the GOB plans to place increased attention on rural education, it is likely to be the main beneficiary of any increase in resources available for investment or discretionary purposes. The effective inclusion of local opinions and needs in curriculum and budget planning will be of particular importance to the more outlying areas - the rural sector.

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The expansion of in-service training of teachers will permit the dissemination of practical information regarding topics such as nutrition and sanitation precautions which is now much less available to the rural sector.

While the administrative reform is being implemented, it is planned to work with the Ministry to prepare other loan programs to achieve the qualitative improvement and quantitative expansion of rural education in Bolivia. Our strategy for rural education will focus on the problems of; (i) the lack of relevancy in curricula related to rural development; (ii) the need to develop the means - including instructional development and low-cost technology - to deliver subject matter more relevant to the rural areas; (iii) the inadequacy of infrastructure and technical/financial resources to meet primary school demand beyond grade 3; and (iv) the need to make the rural school an integral resource of the various development efforts of the Government. The last element is particularly important to achieving the practical impact of education which is being sought and to the integration of efforts of education, agriculture and health in the rural sector.

The strategy will not directly contribute to urban, secondary, industrial, or vocational education, nor as is now anticipated, to university development except as is necessary to reinforce efforts at improving teacher training and curriculum development ^{1/} As indicated in Part VI, we anticipate that other donors will contribute to secondary and vocational education (IBRD) and to university infrastructure (IDB) in the years ahead. It will be the Mission's strategy to encourage other donor support in these complementary areas of educational development.

^{1/} In the Mission's programs in agriculture and health, it is likely that some work at the university level will be included. The Mission will also explore and utilize university capability in research and training as it related to rural educational development.

b. Nature and Timing of AID Loan and Grant Activities

(1) Educational Administrative Reform

As a result of the work of the Ministry's Administrative Reform Council (CRA), supported by AID - funded technical assistance (San José State University) The Ministry now has an established program of administrative reform. During this past year, the Ministry has adjusted some budgetary priorities to take initial steps for implementation of the reform in selected regions of the country and on the national Ministry level. However, if the job is to be completed within a reasonable period of time, and if present momentum is not to be lost, outside resources are required.

We propose a FY 1974 loan to help carry out the Administrative Reform nation-wide and to help lay the groundwork for subsequent AID and other donor assistance to discrete facets of the educational system. Loan funded activities would be supported by new, grant-funded technical assistance, comprised of about eight long-term technicians and supplemental short term advisors related to the Ministry's Administrative Reform program and to its efforts to prepare for the program to improve rural education.

(2) Rural Educational Development

The analysis of the problems of rural education contained in the preceding parts points to the following principal conclusions relevant to plans for future programs:

-Most immediate, pressing needs are for improved efficiency at the primary level, and for expanded facilities beyond grade 3:

-Improved and expanded rural teacher training facilities are required to improve the quality of existing instructions and to prepare for foreseeable new demands:

-New technology for bringing effective educational services to more rural children is essential:

- Curricula adapted to regional needs are required; and

- Greater experimentation in non-formal education is desirable but, for the present, the only way

effectively to reach the rural children on a mass scale is through the formal education system and related governmental services (e. g., agricultural extension, health programs, etc.)

Given these conclusions, the course of action proposed for the remainder of the development assistance planning period, through 1977, follows

FY 1975

We would make a loan for a project to assist the Government's program of: (i) developing better and more localized curricula in selected rural areas, and (ii) improving the quality and quantitative reach of its rural teacher training program and (iii) developing an experimental pilot program of providing non-formal educational services to selected rural populations.

Key elements in the project would include the following activities:

Creating linkages between: (1) the work of up to three research laboratories of the District Educational Development Centers (SIDAS) being established under the Administrative Reform program, and (ii) the instruction being carried out in associated rural Normal Schools and in pilot rural primary schools. The loan would finance the procurement of those goods and services which would be necessary to transmit and utilize in the normal and demonstration primary schools the output of the district research laboratories, including the provision of audiovisual equipment, technical assistance for the laboratories and the field units, and selective construction of any associated and necessary physical expansion of facilities at the research laboratories, normal schools and pilot primary schools.

Making rural teacher training more efficient and responsive to regional needs by assisting the Ministry to reform and consolidate the existing fifteen rural Normal Schools. The remodeled schools would provide all pre-service teacher training in their respective regions and would supplement the research/program design functions of the research laboratories.

Assisting the Ministry in trying out ways to coordinate its rural outreach services with those of other public (and perhaps private) entities which are also involved in providing formal and non-formal educational services to the rural population. One specific Ministerial plan in this regard is to establish rural school-community development centers, which would provide a comprehensive range of formal and non-formal educational services to the surrounding community (about 10,000 families for each center).

The centers, in addition to providing núcleo school services through the upper primary grades, would be an organizational and instructional mechanism for community development activities, such as: creating cooperatives, teaching vocational skills, providing health and sanitation information, strengthening the community social structure.

FY 1976

We know that there are inadequate school facilities in rural areas beyond grade 3 and that, as the population and corresponding demand for educational services increase, the Ministry either will continue its present inefficient and expensive way of meeting that demand or will begin to take steps now better to prepare itself for it. One way it will eventually have to move is to lessen the present inefficient diffusion of teacher and other operating resources by breaking away from the present 3-5 grade structure and, instead, offering local services at least through grade 5. The núcleo school approach is the most proven response to that problem.

Accordingly, we would plan a loan in FY 1976 to help the Ministry expand its rural outreach services, initially in the regions of AID program concentration, by assisting in financing the construction and equipping of núcleo schools which would provide locally available instruction beyond grade 3 to at least a significant part of the rural population in those areas. Community self-help efforts will continue to be stressed as the basic method for school construction. These schools would strengthen the link between the tested output of the research laboratories (and related work of the normal schools) and the rural teachers and students by providing an effective vehicle for broadly disseminating materials previously tested at the pilot level, including bi-lingual instructional materials.

A second, discrete element of the FY 1976 loan may be to strengthen and expand selected rural vocational secondary-level institutes in geographical areas of concentration under a parallel agriculture sector program in order to begin to lay the foundations for the technical training of increasing numbers of graduates of rural primary schools. At present, there are seven such institutes in the country providing training in such fields as agriculture, health, and rural industries.

FY 1977

Depending on the outcome of the research efforts under the FY 1974

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Administrative Reform project and the FY 1975 Rural Education (I) project, we should plan in FY 1977 to extend a loan to finance the dissemination (on a broad regions and, selectively, national scale) of field-tested new curricula, modern aids to education, bi-lingual materials, non-traditional approaches to educational (e g., the rural school-community development centers), and the "re-tooling" of already certified teachers who had not been trained in the new methodology, curricula, technology, etc.

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GOALS

Achievement of the goals set forth in our proposed education program for 1974-77 would have the following key results:

a. System Management

The entire Ministerial system would have been reformed and decentralized, resulting in less administrative instability and structural confusion, strengthened professional training of supervisors and administrators, better field supervision of teaching staff, and greater consistency between planning/programming and objectives. The above improvements should produce an increase in Ministerial discretionary resource from the present 2.3% of its budget to about 5-6%. There would also be established an administrative mechanism to facilitate managerial integration of urban and rural education.

b. Education System-Local Community Interaction

In both urban and rural areas, nationwide, there would be a meaningful regional link between the general population and the system's administrators and educators. As specifically regards rural areas, a new, non-traditional mechanism would have been established in the form of rural school - community development centers in selected, but broad, geographical areas, for the provision of a wide range of public services on an integrated basis.

c. Rural Primary Students

Of the present 300,000 rural primary students, perhaps a quarter, 75,000, principally in the Valleys and Oriente, where AID is initially concentrating its efforts, directly will have benefitted from the regionally focused pilot projects for enriched curricula and improved educational delivery systems, and from the related financing of school construction and equipment. The number of rural primary students so benefitted may as much as double as a result of related other donor activities, such as the West German, Dutch, and UNICEF projects planned for Cochabamba, Chuquisaca, and Tarija, respectively. In total, for both AID and other donor-assisted GOB rural education projects through 1977, we would expect an improvement in the rural primary student retention rate through grade five from the present average of 14% to say, 40%--i. e. among the poten

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tially 150,000 directly benefitting students, instead of only 21,000 annually completing the 5 years, 60,000 would do so, and the rate should increase annually as well as effect an ever-expanding rural student body as system resources are better used nationwide beyond 1977.

d. Rural Secondary Students

The combined AID and other donor-assisted GOB program to reform rural teacher training will benefit the total student body of the present 15 rural normal schools - about 5,000 students in 1972 plus that of the present seven Rural Technical Institutes (i. e. specialized normal schools) about 1,000 students. Also at the rural secondary level, possible AID-supported vocational training would affect up to a thousand students not now able to receive such training due to insufficiency of rural secondary facilities.

Notwithstanding these anticipated gains by 1977, the educational system at that time would still be plagued by a set of major problems, such as the following:

- 1) Inadequate primary school facilities in many rural areas of the country.
- 2) Non-existence of secondary school facilities (other than for teacher training) in essentially all rural areas of the country.
- 3) Inadequate vocational/technical training facilities throughout the system and rural.
- 4) Poor articulation between the public school system and the separately administered, overly academically oriented university system.

3. Sector Commitments to be Sought From The Government of Bolivia

The Mission will seek the following commitments from the Government in support of the sector programs discussed above. Additional commitments may be sought as special needs are identified in the preparation of implementing programs.

In order to sustain the increased organizational efficiencies contemplated by the Ministry of Education as the result of project activities, as well as to give greater emphasis in terms of manpower and financial resources to the priority areas in education we will ask the Ministry of Education to do the following:

- a. Develop a specific program within the area of financial administration by June 1975 with the major goal of devising ways and means of increasing the ratio of support costs to salary expenditures in real terms thus reducing the 1974 ratio of approximately 95% for salaries, 4% for transfer and 1% for investment and support costs to the goal of 85% for salaries, 4% for transfers and 11% for investment and support costs by 1980. The additional resources for investment and operational expenses would be used for developing and maintaining new programs of the National Education Plan. Increased funds for those purposes also should help influence other donors to increase their support of programs under the Plan.
- b. Develop a plan by January 1976 for the systematic reduction of the ratio of administrative and supervisory personnel to teaching staff beginning with the ratio existing in 1975 (expected to be approximately 1-7) and continuing until an improved ratio is reached which will be consistent with the objectives of the reform. It is anticipated that the ratio could be reduced to 1-9 by 1980. The actual budget ratio to be achieved must await further cost-effective research to be carried out in 1975 and 1976.
- c. Develop a plan by January 1975 to increase the efficiency of instruction in order to permit the better utilization of available financial resources. This plan would seek to increase the overall teacher/student ratio from the current 25 pupils per teacher to as much as 30 or more pupils per teacher by 1980. It is anticipated that the ratio may vary considerably according to the complexity and type of subject matter to be taught in the various situations. In some instances a ratio of 10-1 may be deemed cost-effective, while in other instances, such as programmed instruction or instruction by radio, as many as 100-1 may be possible.

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- d. Implement a program of up-grading and improving of the professional administration and supervisory personnel according to the task, function and personal qualification requirements prepared by the Administrative Reform group (CRA). This program should be:
 - a) Time-phased according to priority areas; and
 - b) Conducted on a unit by unit basis with at least 50% of the incumbent personnel at all levels having received specialized training by 1978.
- e. Increase the allocation of resources in real terms to rural education with the long-term goal of making educational expenditures more accurately reflect the division of population between urban and rural areas. The rural/urban population distribution is approximately 70-30 at present. Approximately 33% of the education budget was allotted to rural education in 1973. This percentage should increase to approximately 40% by 1978.
- f. Take steps to reclassify job requirements and to effect a salary schedule for fully qualified, top educational administrators at the central and district levels which would make such salaries competitive with salaries paid to people with equivalent experience and training in the best paid public sector institutions. This salary schedule would be implemented by stages during the period 1975-1978.
- g. Establish in 1975, and begin contributions to a special fund for publishing and distributing a variety of instructional materials for formal and non-formal educational activities. Such materials shall include, but not be limited to, newspaper supplements, pamphlets, charts, unit instructional materials, and textbooks for the primary grades. By 1976, the amount of contributions to this annual budgetary item would be equivalent to US\$ 1.00 per every school child and US\$ 0.70 for every person enrolled in public Adult Education courses during the previous school year. The fund shall be subjected to an annual review with regard to the level of financing. Salaries and preparation costs shall not be chargeable to this fund. Such budgetary support should insure the increasing effectiveness of instruction by providing teachers with more adequate tools of their profession and by increasing the relevancy of education. By 1978, this program should provide all primary school children and adult literacy students with at least two textbooks plus a variety of other instructional materials.
- h. Improve the capacity of the Ministry's office of private and decentralized education to coordinate, supervise and offer support services to the formal and non-formal educational program of all private and public entities in order to increase the effectiveness of Bolivia's total educational effort

and to provide greater exchange of materials, information and experience among the many entities involved.

- i. Develop and implement a coordinated program between the Ministry, CONES, National Community Development Service and other concerned institutions for rural school construction and maintenance which will meet the needs for facilities resulting from the reduction of primary school drop out rates in rural areas.
- j. Initiate an evaluation program within the Ministry of Education
 - (i) to explore the impact of the present monolingual Spanish instruction at the primary level for non-Spanish speaking children and (ii) to develop experimental bi-lingual programs for these children to determine relative benefits of the two learning approaches.

4. Financial Plan

a. AID Resources

The tentative AID financial plan for the FY 1974-77 period for assistance to Bolivian education takes the following form:

<u>Loans</u>	<u>\$ 9.00 million</u>	<u>\$ 15.00 million</u>	<u>\$ 10.00 million</u>	<u>\$ 10.00 million</u>
	(Administrati- ve Reform)	(Rural Education I)	(Rural Education II)	(Rural Educa - tion III)
<u>Grants</u>	<u>\$ 0.23 million</u>	<u>\$ 0.83 million</u>	<u>\$ 0.92 million</u>	<u>\$ 0.92 million</u>
	(Human Resour <u>ces</u> -0.12)	(Human Resour <u>ces</u> -0.12)	(Human Resour <u>ces</u> - 0.10)	(Human Resour <u>ces</u> 0.10)
	(Education Administra <u>tion</u> 0.10)	(New education Project-0.70)	(New education Project-0.80)	(New education Project-0.80)
	(Technical Support-0.01)	(Technical Support-0.01)	(Technical Support-0.02)	(Technical Support 0.02)
<u>TOTAL</u>	<u>\$ 9.23 million</u>	<u>\$ 15.83 million</u>	<u>\$ 10.92 million</u>	<u>\$ 10.92 million</u>
	=====	=====	=====	=====

GOB Contributions

The 1974 budget for education is the equivalent of about \$65 million (including CONES). Even assuming that annual budget increases during the next few years will be only half of the trend of the past eight years (when the budget increased three-fold), we can expect by 1977 to see a GOB education budget of over \$100 million annually. Even assuming no increase in the rural sector's share of that budget, rural education should be allocated over \$ 35 million annually by 1977.

The total of AID programs proposed above for the education sector for the four years, FY 1974-77, amounts to about \$48 million, or less than a fifth of cumulative GOB budgetary allocations to education for the same four year period, and probably less than a tenth of those allocation if computed for the longer period encompassed by the projected disbursement periods under the proposed AID Loans and grants. In these circumstances, and particularly given our strategy of improving the efficiencies of the education system we are confident that the GOB can do more than merely match the 25% of total project costs required by US legislation.

GOB contributions in support of other donor programs will be most demanding if an IBRD school construction loan is obtained. If funded by the IDA of the IBRD, GOB contributions in support will be about \$3 million in the period through 1977. GOB contributions in support of UNICEF, UNESCO, UNDP OAS, and other donor programs will approximate an additional \$ 1 million per year during this period. Thus the total GOB contribution in support of US and other donor educational development projects will be about \$ 5 million per year or 8% of the GOB budget for education at current levels.

Another way to approach the questions of prospective GOB contributions is to look at the anticipated overall GOB revenues and their availability for various educational purposes.

The recent improvement in central government revenues is a reflection of improved world prices for raw materials. Given the present tax structure any further increases in revenue must result from volume increases or higher tax rates, since it is unrealistic to count on continued rises in world prices. The tax elasticity of the present system is relatively low implying a revenue bottleneck relating to development needs-especially since planned new programs for health, education and agriculture will need increased financial resources. The GOB has recognized this problem and is expected to make changes in the tax system to assure adequate resources; however, the rapidity with which such changes will be introduced is not clear.

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In our opinion it is not unreasonable to expect that the education budget will maintain its present relative position in the overall GOB budget. However, to be conservative, the Mission's projection assumed a decline to 20 % for the Ministry of Education's relative share of total expenditures. Assuming this 20% relative share, the education budget will grow at a compound rate of about 12% per year in real terms, which we believe would be adequate to cover the real resource requirement of the rural education program. In addition, we expect the resource increment will also cover anticipated normal needs of growth of about 7% and a shift toward rural education emphasis in the budget will take about 8% of the increment.

The following table shows the anticipated increases in real terms (1972 base) of the Treasury budget and of the education budget at a relative share of 20% which the Mission believes will be the minimum maintained by the GOB, especially since the GOB has for political reasons given priority to rural education to encourage the rural population's backing of the government.

Treasury Budget Projections
(In million of pesos)

In 1972 Constant Terms

<u>Year</u>	<u>Revenues</u>	<u>Expenditures</u>	<u>Education Expenditures</u>
1968	1,042	1,190	393
1969	1,071	1,466	409
1970	1,240	1,489	446
1971	1,193	1,635	495
1972	1,324	1,841	479
1973	1,844	2,258	526
1974	2,397	2,890	665
1975	2,709	3,324	698
1976	3,061	3,823	765
1977	3,850 ^{1/}	4,396	879
1978	4,800	5,055	1,011
1979	5,424	5,813	1,163
1980	6,129	6,685	1,337

^{1/} Estimated coming onstream of Y. P. F. B. Lubricant Facilities and new Production.

The average compound growth for total expenditures of 13% is above the average of 10% registered between 1967 and 1973 in real terms. Assuming the GOB takes steps to improve the tax system this rate of growth is not unrealistic. The relative share of education expenditures is expected to decline from 24% to 20% but this level in real terms is considered more than adequate to meet planned requirements. This increase in education budget resources will be approximately \$us. 33 million over the next 6 years. The Mission estimates that following added requirements will have to be met (during 1975 through 1980) out of this increment to assure success of the planned projects:

	(In \$us.)
1.- Instructional material - book fund	5,000,000
2.- 50 New Technical personnel, planning, research, finances, evaluation	1,000,000
3.- Salary incentives	-
4.- Higher operating costs	700,000
5.- Training in-country	150,000
6.- Construction (new)	2,000,000
7.- Maintenance of new buildings	250,000
8.- Salaries of additional 900 personnel to cover new graduates	5,700,000
9.- Equipment - vehicles maintenance	150,000
10. Education equipment	<u>1,000,000</u>
Total	15,000,000

The education experts believe these activities will not exceed \$us. 16 million, thus implying that approximately 48% of the expected incremental resource availability will be needed to meet Mission and GOB objectives of increasing rural participation in the Education Ministry budget and covering the above mentioned incremental GOB budget requirements. Moreover, the reform will permit restructuring of budget, allowing some flexibility in the budget to meet salary and other contingencies.

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C. MAJOR CONSTRAINTS AND APPROACHES TO PROBLEM SOLUTION

Major Constraints and Problems

How Constraints Might be Addressed
by the GOB and External Donors

SYSTEM EFFICIENCY

1. - Lack of adequate physical facilities at all levels. Organization for design, construction and maintenance of school and other physical facilities is loosely controlled and financed.

1. - Establish an efficient single unit for research into school facility needs, utilization and condition of present facilities; provide self-help information and assistance to communities for local, cooperative construction efforts; design and supervise construction of low cost, easily maintained buildings; provide systematic maintenance and consulting services; and act as a clearing house for new school construction of all private, public and decentralized agencies. The IBRD has been asked to help finance construction of secondary and vocational schools. AID and other donors will provide loan and grant assistance for expanded physical facilities in rural areas.

2. - Duplication and over-lapping of functions exist throughout the administrative sector. Poor utilization of administrative personnel clogs the system on the national level with employees largely selected for political rather than technical considerations.

2. - Rationalize the administrative process, publish manuals covering job functions, tasks, and requirements; train personnel in new responsibilities; decentralize decision making process closer to the level affected; integrate overlapping functions or responsibilities among offices. Selection of new personnel according to job descriptions and technical training/experience. UNESCO and OAS will conduct in-service training programs. AID will provide loan and grant assistance.

3. - No systematic research/evaluation has been done to develop innovative practices or technological applications that might reduce costs, improve efficiencies, or draw on additional sources of revenue for education. Financial budgeting has been ineffective, with the national level possessing little information regarding central school finance needs. There is an inordinate percentage of Ministry's budget assigned to salaries.

4. - Data collection, processing, storage and retrieval are primitive and ineffective; in essence, the sector has faulty memory and little planning capability.

3. - Develop a special unit with the capacity to conduct cost/effective/benefit studies within the education planning office. Work with planners to prepare program budgets covering all Ministry activities. Study new sources of revenue and modernization of disbursement procedures with the educational finance office personnel. Conduct research and cost-benefit projections for promising innovative practices. Improve the planning office's capacity for systematic evaluation of on-going projects to determine effectiveness and needed design improvements. Implement administrative reforms which would provide savings for use as operational expenditures rather than salaries.

UNESCO will continue to provide advisory assistance to the Planning Office. AID will provide loan and grant assistance.

4. - Establish a basis for collecting information necessary for educational management decisions. Develop and design software for efficient use in data gathering, handling, retrieval and evaluation. Ex tend this system to cover the private and decentralized systems as well. AID will provide loan and grant assistance.

CURRICULUM RELEVANCY

"Copy-book" methodology permeates all levels.

1. - Curriculum materials, textbooks, and teachers guides are not responsive to differentiated needs of individuals or geographic locations. Children in the Altiplano study the same curriculum with the same illustrations as the Amazon judge population and at the same pre-determined rate.

2. - Insistence on a uni-lingual instruction in a multi-lingual society probably impedes effective teaching/learning experiences.

3. - Forty-two years of emphasis on adult literacy at extremely high cost has barely kept up with population growth largely because it has not been functionally oriented.

1. - Strengthening of curriculum division to provide materials geared to geographic/cultural materials by units to provide for better pacing of instruction according to individual needs. Research into relevancy at local levels-both urban and rural. Training of teachers to use textbooks and other resource materials. Establishment of simple school libraries and promotion of institutional bookstores. UNESCO and OAS will conduct in-country work-shops. AID will provide loan and grant assistance.

2. - Bilingual approach to language arts starting with reading of the spoken native language and systematically transferring verbal skills to Spanish over a 2-3 year period, UNICEF will finance a feasibility study for a project to improve primary education. AID will provide loan and grant assistance.

3. - Non-formal skill training by radio in the native languages. Develop functional literacy and formal "equivalency" programs along themes common with children's education to promote "family" learning experiences. UNDP will finance a study of educational technology in rural areas. AID will provide loan and grant assistance.

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4. - Secondary level programs pay inadequate attention to vocational/technical/agricultural training.

5. - University programs are generally unresponsive to leadership needs of Bolivian development.

4. - Reorient selected existing schools toward more practical curricula.

Establish new urban and rural specialized schools. Expand the FOMO and other non-formal programs. IBRD to consider financing of urban infrastructure and possibly AID rural infrastructure.

5. - Sponsor selective University service to specific development needs through Ministry contracts. Involve university level personnel on Ministerial advisory committees to study problems. Support CNES program of reducing proliferation of less productive courses and amplification of courses to prepare human resources needed for development. IDB will consider additional financing of facilities for selected university facilities.

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1. - Geographic isolation caused by the mountainous topography and low lands accessible only by water ways.

2. - Poor communications infrastructure of roads, railroads, and telephones.

3. -. Cultural and language differences among the low-landers, valley dwellers, and altiplano groups as well as between rural and urban.

1. - Improvement and expansion of instruction and teacher training utilizing radio network and in-service field seminars. Expanding responsibilities of zone supervisors to by pass need of going to La Paz for decisions. UNESCO will conduct in service teacher training. UNWFP will continue its program of providing food for rural normal schools.

West Germany, UNICEF, Holland, and Argentina will finance regional education projects in rural areas, including improved teacher training. AID will provide loan and grant financing.

2. - Provision of motorcycles and outboard motors for supervisors and nucleo school directors to reach the large numbers of isolated communities. Expand use of commercial trucks and buses for delivery system. Provide two-way radio communication connecting national, state and local centers. Development of various size mobile units. UNDP, UNICEF, West Germany, Holland, and Argentina will provide financing for these services in their respective project areas. AID will provide grant and loan assistance.

3.- Development of bi-lingual instructional programs in several tongues for both formal and non-formal skill and concept learning adaptation of basic curriculum to meet cultural differences. Research into representative rural and urban family and cultural patterns to identify strengths that may be built

4. - Attachment to tradition and the status quo, including fear of the new or unknown.

upon and commonalities that may make curriculum planning more cohesive.

AID and the other donors sponsoring regional education projects will provide loan and grant assistance.

4. - Use results of above study to strengthen local traditions, building self-confidence and esteem necessary to face change. Strengthen role of women as decision-makers in family life affairs as a fulcrum for change.

INTERPERSONAL RELATIONSHIPS

1. - Local level has minimal voice in planning or making decisions relevant to its needs. Professional supervision almost totally lacking. Teachers and school directors feel abandoned.

2. - Hesitancy and delay in decision-making because of uncertainty, and unclear relationships of responsibilities in a society where obedience to the hierarchy, instead of freedom for creative action and initiative, is predominant.

1. - Decentralization and delegation of responsibility to the District and local levels. Separation of administrative and technical-pedagogical functions. Development of supervision based on in-service training and resolution of local problems. Establishment of two-way communication based on resolution of local problems. UNESCO and OAS will conduct in-service training programs. AID will provide loan and grant assistance.

2. - Broadening of decision-making base to the local level. Creation of school-community advisory councils to reinforce decision-making base. Administrative training emphasizing human relationships and cooperative processes.

3. - Mistrust of foreign advisors' making recommendations according to foreign standards rather than Bolivian standards.

4. - Campesino mistrust of decisions made by urban political leaders concerning rural affairs as the "foreign advisor" in the local Bolivian context. Most rural leadership positions of authority are held by persons reared in an urban setting.

3. - Strategy based on Bolivian Diagnosis, analysis and recommendations of priorities. Technical assistance focus will be on presenting various alternatives in problem-solving and expanding horizons but not interfering in decision-making or political interplay. Focus on improvement of inter-personal relationships. All donors.

4. - Goal to improve rural education efficiency and relevance so rural swellers will progress further up the educational ladder and develop skills necessary for rural leadership. Stress training and employment of local residents for key development roles. Involvement of community in identifying and solving local problems. Formation of production and marketing cooperatives to keep local control of resources and development. All donors involved in regional projects focused on improved rural education.

ANNEX 1

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ANNEX 2

AID GUIDELINES FOR EDUCATION PROGRAMS

Agency Guidelines for education program strategy recommended concentration on four basic areas. The following is a breakdown of Mission's proposed programs in these four areas. Activities often do not fall neatly into a single area; therefore, the listing should be considered illustrative.

A. Education Economics and Analysis

1. - Improved decision making capacity related to problem identification and solution.
 - a. Improvement of Ministry of Education planning office
 - 1) Provide technical assistance for the organization and improvement of total planning, evaluation operations.
 - 2) Train program analysts.
 - 3) Develop linkages to other government planning offices: CONEPLAN, Ministries of Agriculture and Health, the Episcopal Council, COMIBOL, YPFB, and Armed Forces.
 - 4) Application of specific planning and evaluation methodologies
 - b. Improvement of Research Capability
 - 1) Provide technical assistance to organization of research department.
 - 2) Develop research to evaluate all major projects of administrative reform to determine effectiveness and to improve decisions concerning program design and execution.
 - 3) Identification of project cost/benefit/effectiveness.
 - 4) Identification of equitable programs and targets, relative efficiencies and costs
 - 5) Identify how educational opportunities at various levels relate to employment and income distribution.
 - c. Development of a Management Information System to collect, process, evaluate, store, retrieve and use data pertinent to educational decision making.

- 1) Provide technical assistance to develop system.
- 2) Train personnel in all tasks and functions.
- 3) Determination of who has access to formal and non-formal learning opportunities by region, sex, socio-economic class, and age.
- 4) Develop a system of continual evaluation and self-evaluation for formal and non-formal programs.

2. - Improvement of Financial Base

- a. Determine what groups bear the burden of paying educational costs at various levels.
- b. Determine the level of education investment which Bolivia can afford and what policies are suggested by these constraints.
- c. Identify alternative ways, other than national budgeting, of raising money for education.
- d. Improving the budgetary process for planning and programming projects, within the context of the overall Administrative Reform program of the Government.

3. - Improve relevancy of Rural Education

- a. Maximize spread of educational opportunity to rural areas to bring them more directly into Bolivian socio-economic development.
- b. Determine quality and relevance of curriculum and nucleo school systems.
- c. Improve social, economic and political role of women through skill training.
- d. Financing of education from local sources by sponsoring:
 - 1) Community self-help programs.
 - 2) School operated production and marketing cooperatives.

3) Textbook rental cooperatives.

4) Local nucleo operated school stores for basic school supplies operated by intermediate grade students.

B. Non-Formal Education

1. Encourage non-formal educational studies related to major development problems.

a) Test bi-lingual education approach.

b) Develop cost-effective methods of learning the 3-R's, functional knowledge and skills outside the formal, graded school system.

2. Develop the Ministry of Education Adult Education division's capacity to meet the skill needs of local communities.

a) Develop mobile training centers.

b) Cooperate with the Ministry of Agriculture and Community Development to organize farmer training centers.

c) Strengthen communications systems, particularly radio, for reaching distant populations.

d) Improve ability of small farmers to acquire and use new technologies.

e) Emphasize basic needs of small farmers through skill training, development of production and marketing co-ops and savings and loan organizations.

f) Assist school-community groups to expand 4-H club programs.

C. Educational Technology

1. Make the educational process more effective and accesible in formal and non-formal programs and professionalization of staff at all levels and particularly for serving the rural population.

a. Increase efficiency by improving learning effectiveness.

- 1) Design and implement District Educational Development Centers.
- 2) Develop evaluation techniques based on goals to determine effectiveness at pre-determined time sequences.
- 3) Develop, adapt and utilize non-verbal and verbal standardized testing materials.
- 4) Initiate bi-lingual/audio-lingual approach to Spanish language development-listening, speaking, reading, writing.
- 5) Develop "bridge" materials to connect native language with Spanish.
- 6) Develop teacher manuals to accompany all innovative programs.
- 7) Publish wide variety of low cost instructional material in various media.
- 8) Improve radio instruction and programmed learning materials including low cost tape cassettes.
- 9) Modernize and expand in-service and pre-service training programs of Administrators, Supervisors, and teachers.

b. Lower per unit and per graduate costs.

- 1) Improve relevancy of curriculum for greater holding power and internal efficiency.
- 2) Conduct experimentation with community or family education linking adult and child learning experiences.
- 3) Focus on cost reductions and improvement of teacher training by developing a reduced number of Normal Schools with improved facilities and equipment and better trained faculty.
- 4) Stimulate preparation and use of local instructional materials for conceptualized learning.

- 5) Support student loan programs at intermediate, secondary and higher education levels.

c. Curriculum reform and teacher training

- 1) Conduct bi-annual work shops on regional basis to improve supervisory and administrative procedures and decisions relevant to regional needs.
- 2) Reduce number of rural normal schools and improve faculty competence.
- 3) Develop basic modular teaching units and programs complete with low cost instructional materials.

d. Other development areas

- 1) Integrate learning delivery systems with other Ministry systems to avoid duplication, reduce overall costs, improve relevancy and foster cooperative efforts in human resource development including family planning, health, agricultural extension and community development.
- 2) Utilize radio and micro-wave communication system, as it is developed, to improve communications among education offices at all levels and to link community efforts in educational development through inter-change of information and programs.
- 3) Continue and expand support of leadership training programs for development of organizations which seek to improve the status of women and their further integration and participation in national, regional and local life.

D. Higher Education

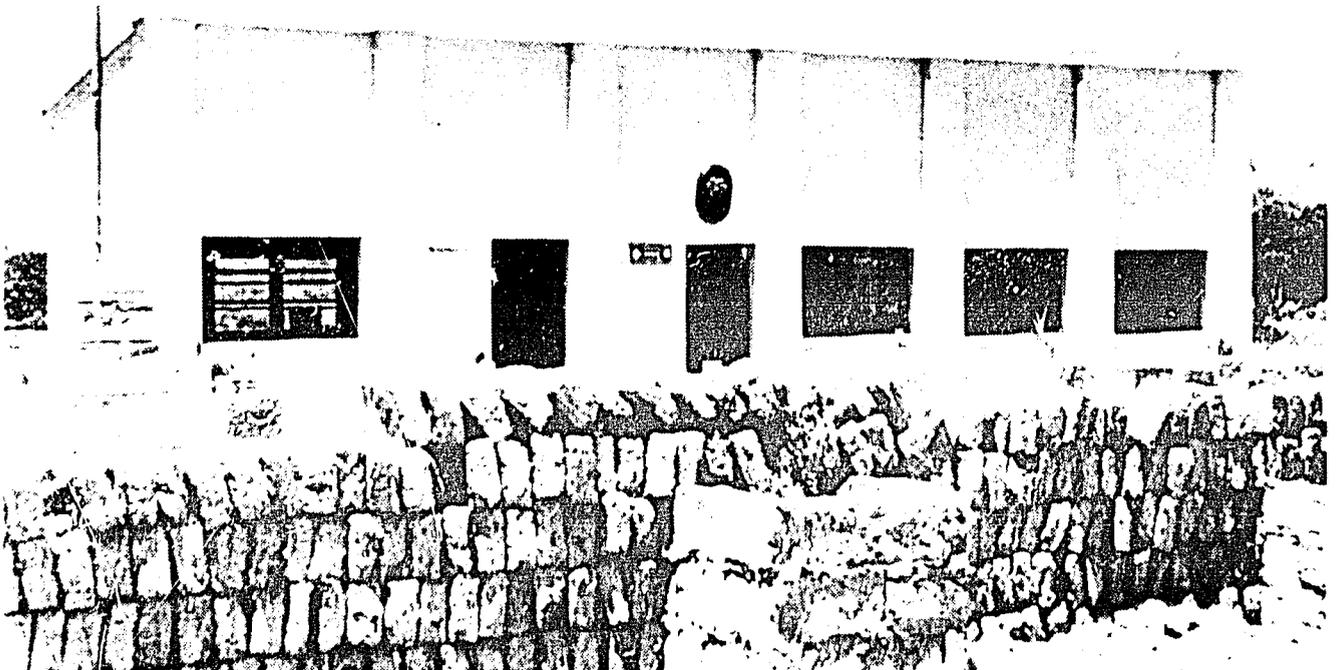
1. Support selective, low-cost, problem oriented service programs for addressing important national development needs particularly related to improving the quality of life of the poor in areas of health, agriculture, and community development.

- a. Assist the National Council on Higher Education (CNES) and the Ministry of Education develop programs aimed at increasing the internal efficiency of University level instruction, including urban normal schools and both urban and rural post-normal training institutes.
 - 1) Support selective training of key faculty and leadership in specialized areas including research and fiscal accountability.
 - a) Continue support of LASPAU scholars through development of loan funds to cover international travel and English language training costs until such time as the funds become self-supportive for 20 scholarships annually.
 - b) Loan fund long and short term training for key educational development personnel.
 - c) Grant fund appropriate study tours focused on specific, timely skills necessary for program development not covered by loan programs.
 - 2) Improve libraries and educational bookstores through distribution of donated or low-cost books, pamphlets and materials developed by AID regional programs.
 - 3) Loan pertinent technical films and filmstrips from the USAID film library.
 - 4) Maintain the USAID technical, consulting library for exparticipants, Ministry personnel and University level professors.
- b. Support specific project related to national, regional and local development needs through contracts or other arrangements between specific universities and the appropriate Ministries or planning agencies. Such programs will largely be loan funded.
 - 1) Provide special training programs for Ministry personnel.
 - 2) Strengthen research and evaluation related to the solution of key national development problems in education, health and agriculture.

- 3) Stimulate cooperative efforts for the critical examination of alternatives approaches to rural development delivery systems.
- 4) Foster inter-disciplinary approach among university departments for the study of Bolivian problems.
- 5) Support CNES efforts to strengthen its relationships with other levels of education.



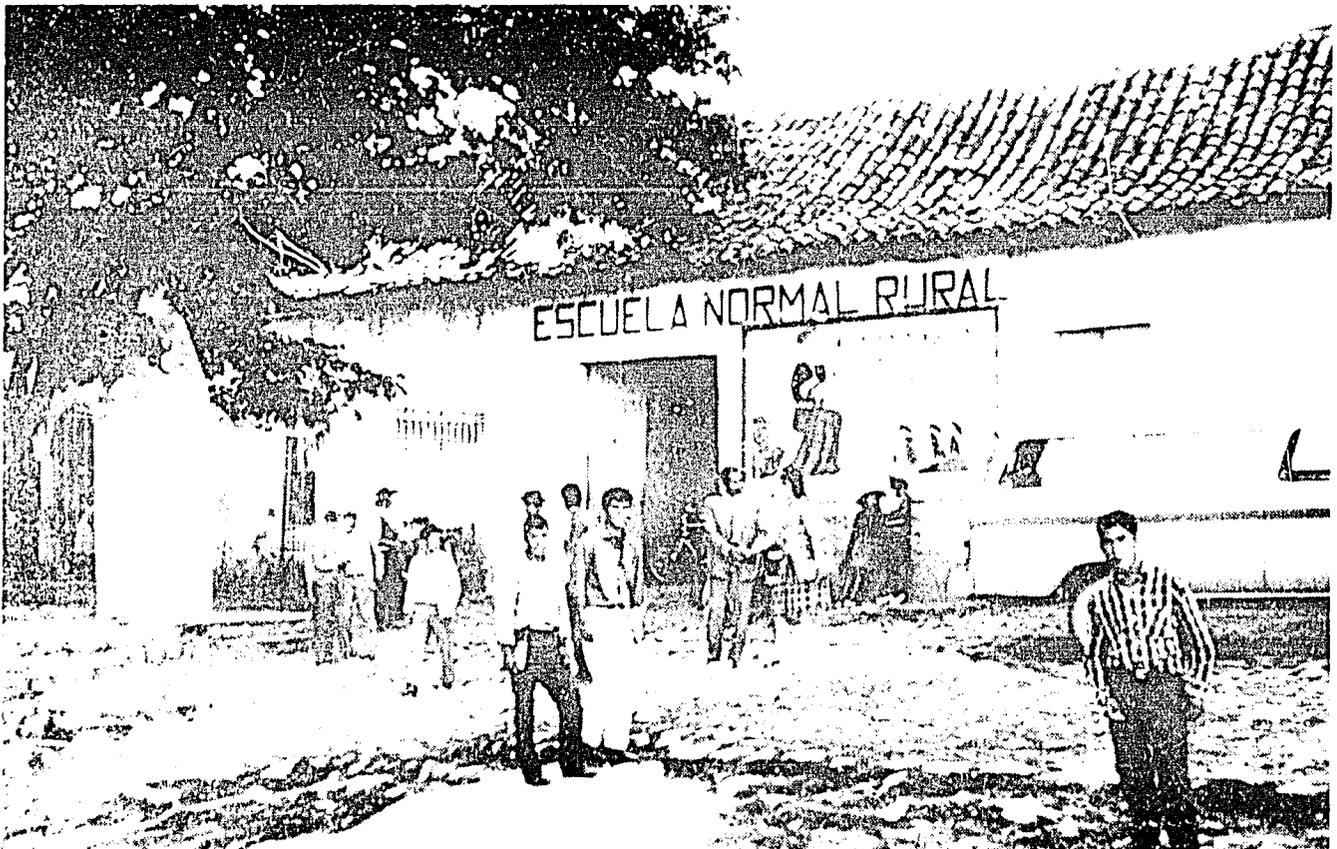
AN ALTIPLANO VILLAGE



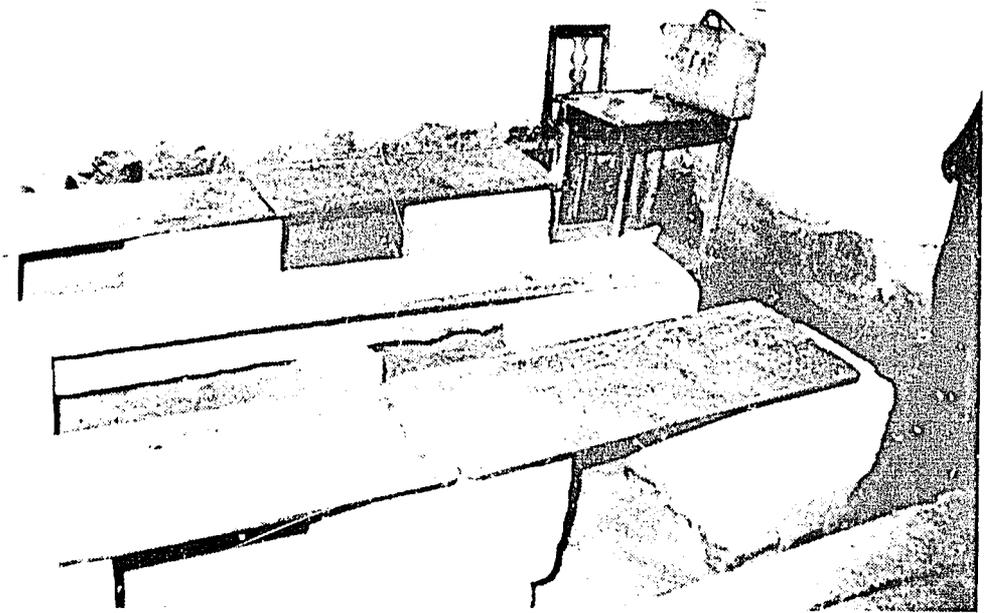
MODERN RURAL SCHOOL



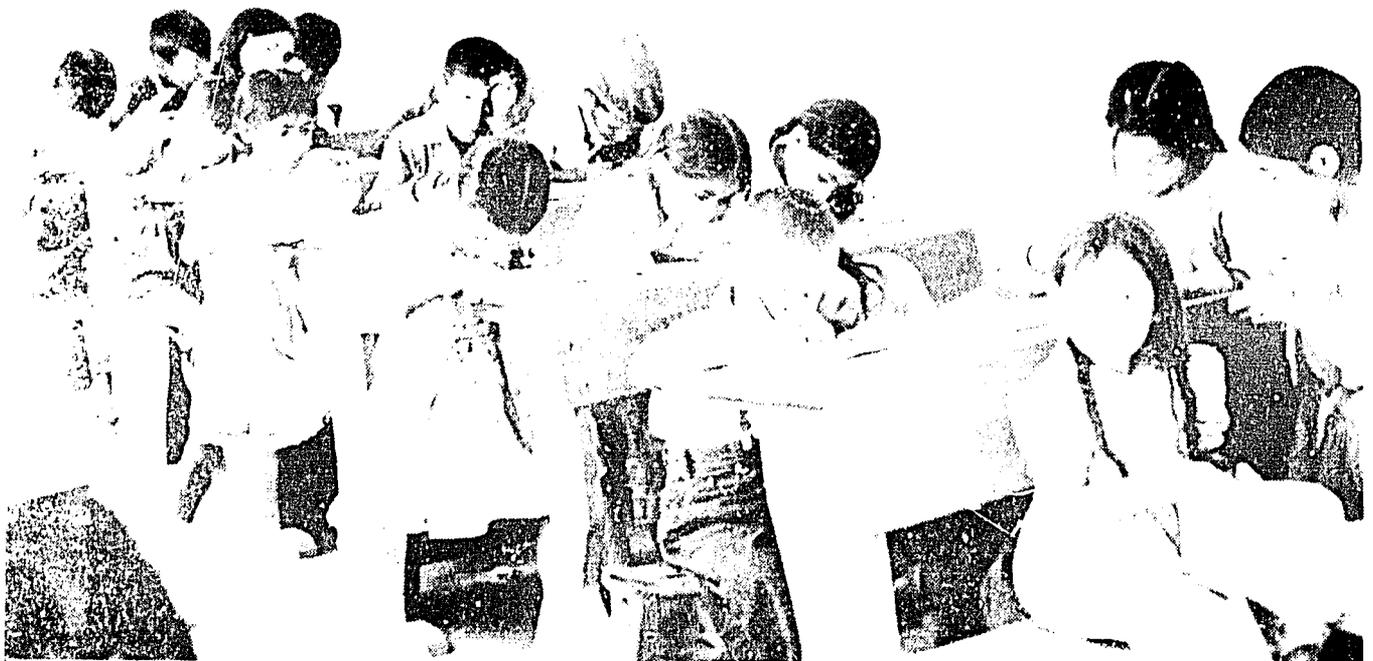
RURAL SCHOOL IN TROPICAL EASTERN PLAINS



RURAL NORMAL SCHOOL.



TYPICAL RURAL SCHOOL CLASSROOM



RURAL PRIMARY SCHOOL WITH NEW BENCHES

ANNEX 4

ASSESSMENT COMMITTEE

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David Jickling, Public Administration Officer

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Frank Brecher, Program Officer
Loc Eckersley, Financial Analyst
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OTHER ASSISTANCE

The Mission wishes to express its appreciation to the many people in public and private organizations who cooperated in providing data for this assessment. The Planning Office and the Administrative Reform Council of the Ministry of Education were particularly helpful.

COMMENTS AND OBSERVATIONS

As a preliminary assessment, comments on the contents of this document and observations on errors or oversights would be appreciated.

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Please forward them to:

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