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This report has been prepared by the Academy for Educational Development under Contract No. AID/afr-C-1131, Work Order No. 9 (Paraguay), for the Division of Education, Science, and Technology, Office of Development Resources, Bureau for Latin America, of the Agency for International Development.

MEMBERS OF THE ASSESSMENT TEAM

Academy for Educational Development, Inc.

Stephen F. Moseley, Senior Project Manager
Francisco X. Swett, Team Leader
Cheryll R. Greenwood, Coordinator and Editor

Eugene R. Braun
Gene Lamb
Patrick D. Lynch
Noel F. McGinn
Donald A. Swanson
Donald R. Winkler

USAID/Paraguay

Jon A. Gant, Chief, Education and Human Resources Division
Donald Dilworth

FOREWORD

The Academy for Educational Development initiated this assessment of the Paraguayan education sector in January 1977, at the request of the Agency for International Development. The work was contracted under Work Order No. 9 of IQC No. AID/afr-C-1131. After preliminary planning and data collection activities in Washington, Francisco Swett, AED Team Leader, established a field office in Asunción. The major portion of the assessment was carried out in-country, during the period from February to May. Throughout those months, each member of the team visited Asunción to work on the particular section of the report for which he or she was responsible. Information was obtained from reports produced by the GOP, USAID, and other agencies; through extensive interviews with personnel in the field representing USAID, the Government of Paraguay, and other organizations; and from direct observation in both the rural and urban areas of the country.

Many individuals gave unstintingly of their time to contribute to the information base required for a report of this nature. Personnel within the several Ministries contacted on a regular basis were most helpful, during direct interviews and when reviewing the report as each portion was written. The Academy is particularly indebted to representatives of the Ministry of Education and Worship, who met on an almost daily basis with members of the team throughout the conduct of the assessment.

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GLOSSARY

AUCA

Asociación de Usuarios de Crédito Agrícola

BNF

National Development Bank

CAES	Centro de Adiestramiento en Servicio
CAH	Crédito Agrícola de Rehabilitación
CARITAS	Catholic Relief Services
CEFEBEI	Centro Femenino de Educación Integral
CENFAE	Centro de Formación de Auxiliares de Enfermería
CEPADES	Centro Paraguayo de Estudios para el Desarrollo Económico y Social
CEPEP	Centro Paraguayo de Población
CNCE	National Council for Economic Coordination
CNPS	National Council for Social Progress
CONARAS	Comisión Nacional Republicana de Acción Social
CPES	Centro Paraguayo de Estudios Sociológicos
CREAS	Centros Regionales de Educación Agrícola
DAP	Development Assistance Paper
ECIEL	Programa de Estudios Conjuntos sobre la Integración Económica Latino Americana
FAO	Food and Agriculture Organization
£	Guaraní (131.50 = US\$1)
GOV	Government of Paraguay
IADSL	Instituto Americano para el Desarrollo del Sindicalismo Libre
IRR	Instituto de Bienestar Rural
IDA	International Development Association

IDB	Inter-American Development Bank
IDIA	Instituto de Desarrollo Integrado y Armónico
IDM	Instituto de Desarrollo
ISE	Instituto Superior de Educación
MAG	Ministry of Agriculture
MJL	Ministry of Justice and Labor
MOE	Ministry of Education
NFE	Non-Formal Education
OAS	Organization of American States
ODECO	Organización de Desarrollo Comunal
OMS/OPS	Organización Mundial de la Salud/ Oficina Panamericana de la Salud
ONP	National Projects Office
ONPS	Oficina Nacional de Progreso Social
PAEN	Programa de Alimentación y Educación
PIDAP	Integrated Agriculture Development Project
PMA	Programa Mundial de Alimentos
PREALC/ILO	Programa del Empleo para América Latina y el Caribe/International Labor Organization
REC	Regional Education Center
REDP	Rural Education Development Project
RTAC	Regional Technical Assistance Center
SCIDE	Inter-American Cooperative Education Service
SEAG	Servicio de Extensión Agropecuaria

SENASA	Servicio Nacional de Saneamiento Ambiental
SNPP	Servicio Nacional de Promoción Profesional
STP	Technical Secretariat of Planning
UNA	Universidad Nacional de Asunción
UNDP	United Nations Development Program
UNESCO	United Nations Education, Science and Culture Organization
UNIPACO	Unión Paraguaya de Cooperativas
YMCA	Asociación Cristiana de Jóvenes

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SECTION I

INTRODUCTION

The major theme of the Paraguayan education sector is educational reform based on curriculum change. The overall objective is to offer more and better education, where more implies the extension of educational opportunities and better refers to qualitative improvements based on the utilization of the new curriculum. This is hopefully to be achieved within affordable levels of cost. To meet this objective, an eleven-year educational development plan was formulated, based on the 1968 Diagnostico Educativo, and is now in the eighth year of implementation. From the context of what was to be achieved, the progress of the reform to date can be examined, and the prospects for the future can be assessed. That is the purpose of this study, with the intention of developing a series of recommendations for intervention, taking into account existing constraints which impede achievement of goals.

Central to the nature and function of this assessment is the awareness that it must serve a number of practical needs of both USAID and the Government of Paraguay. In this light, the education sector is identified as an area where public policy is conceived and carried out to fulfill objectives that are internal to the educational system of Paraguay, but which also have external projections and impact in the larger social and economic context.

The analytical boundaries of the assessment and its own frame of reference require that the greatest attention be paid to those areas where USAID is equipped to provide the necessary assistance to undertake initiatives that will result in positive changes in the country's educational development. Therefore, the focus of analysis is essentially limited to the more basic levels of the school system (the primary level), the neediest users of the system (those located in rural areas), and the diverse modalities through which educational services can be delivered (the schools, the activities of non-formal education, and the identifiable modes of informal learning). The upper levels of the formal system, while also considered, are analyzed perfunctorily, with a view to tracing their incidence into the larger socio-economic system of Paraguay.

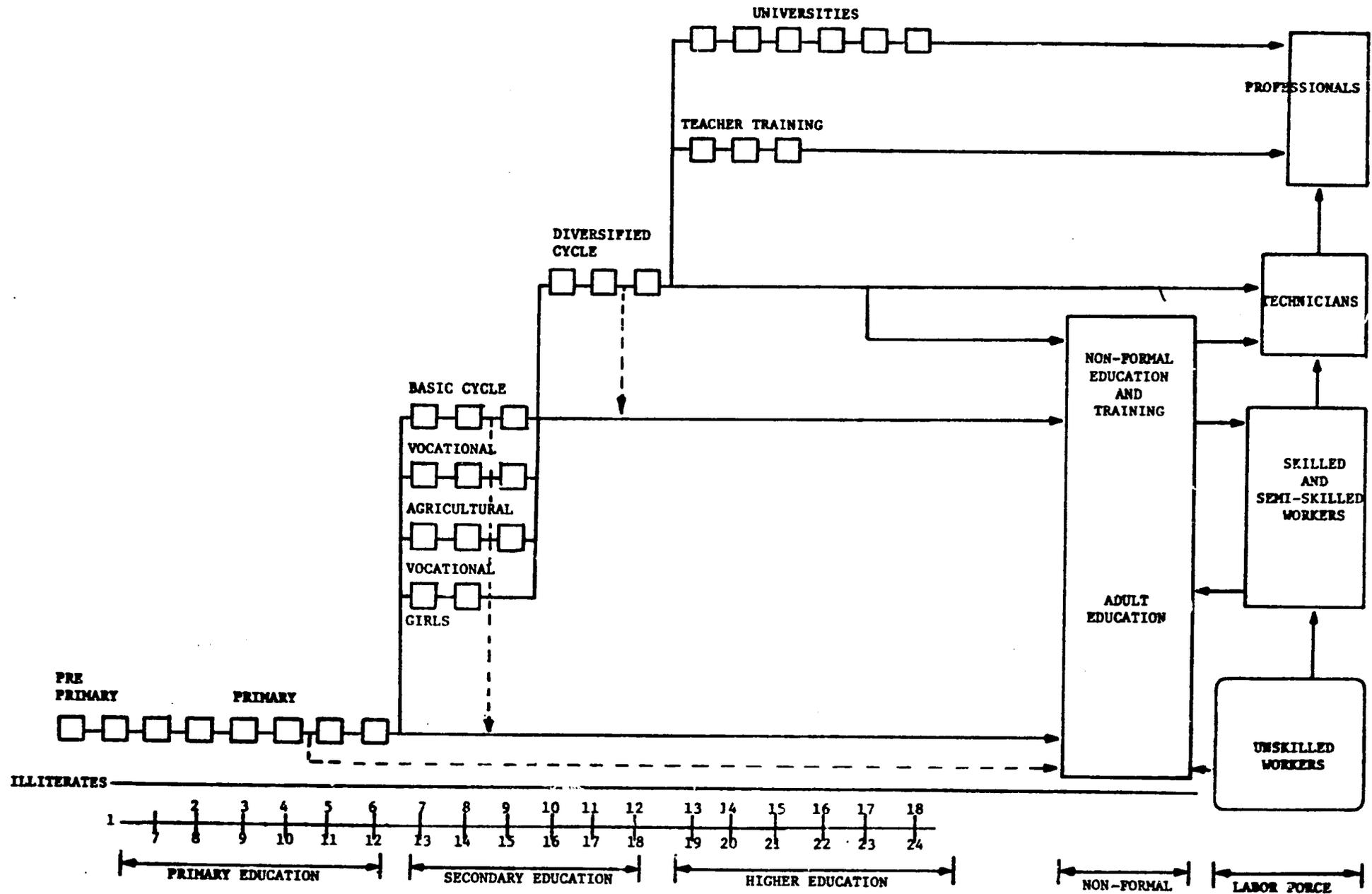
A. THE EDUCATIONAL SYSTEM: STRUCTURE AND PROCESSES

The educational system is the embodiment of the educational sector; it transcends those activities which are the exclusive province of the MOE, to include other educational initiatives, both formal and non-formal, which originate in the public and private sectors of society.

The structure refers to the mechanisms, levels, and connections of the system, as shown in Chart I-1. The formal system falls into the familiar pattern of primary, secondary, and higher education. In the rural areas, and as a result of external economic influences such as the

PARAGUAY:

STRUCTURE OF THE EDUCATION AND TRAINING SYSTEM, 1975



Source: Paraguay Education Project Sector Memorandum. International Bank for Reconstruction and Development, 1975 (based on MOE Statistics for 1974).

building of the hydroelectric dams at Itaipú and Yasi-Retá, the traditional structure of the formal system tends to become co-mingled with non-formal approaches that are geared to the fulfillment of specific learning needs.

The structure of the system is maintained and regulated by the MOE, which sets the standards for the management of the system and maintains them by means of its administrative apparatus and organizational procedures. This assessment makes use of available information to identify the organizational channels through which decisions are made. Ideally, it seeks to discern how the planning and management activities are carried out from their initial conception to their eventual implementation and, in a few cases, their evaluation.

The processes refer to the production functions of education, dynamically conceived. The emphasis is not only on quantitative data gathering, but also on the qualitative study of the processes by which educational services are produced and delivered. Generically speaking, the educational processes are those clearly identified components which generate and define what educators call a teaching-learning situation. They include:

- a. Location: a school or learning center, which is the site of educational activities. This component is tied to processes which come under the heading of physical facilities planning.
- b. Teacher: also a promoter, facilitator, or monitor, the personal representative of the system to the participant. The procurement and training of the teacher is carried out under the rubric of teacher training, both pre-service and in-service.
- c. Curriculum: the program of studies, designed to impart a specific educational message in a particular manner.
- d. Instructional materials: either print or non-print, this component represents the packaging of the curriculum in a format best suited to transmit the educational message. Traditionally defined as the production and distribution of texts, in its present conception, equal emphasis is given to the generation of all materials designed to produce learning outcomes in the classroom or in any non-formal education activity.
- e. Training methodologies, or the approaches taken to the transmission of the educational message.
- f. The users, or students, apprentices, and trainees. In a given location, the curriculum is presented through instructional materials delivered by a teacher using specific methodologies.

In any educational system, these components constitute the processes through which the educational message is designed, produced, transmitted, and received. In Paraguay, the new curriculum represents a departure from the traditional program of studies in terms of subject content, sequence, coverage, and depth. The educational reform based on its use affects every component of the educational system. Chart I-2 depicts its impact on the educational processes.

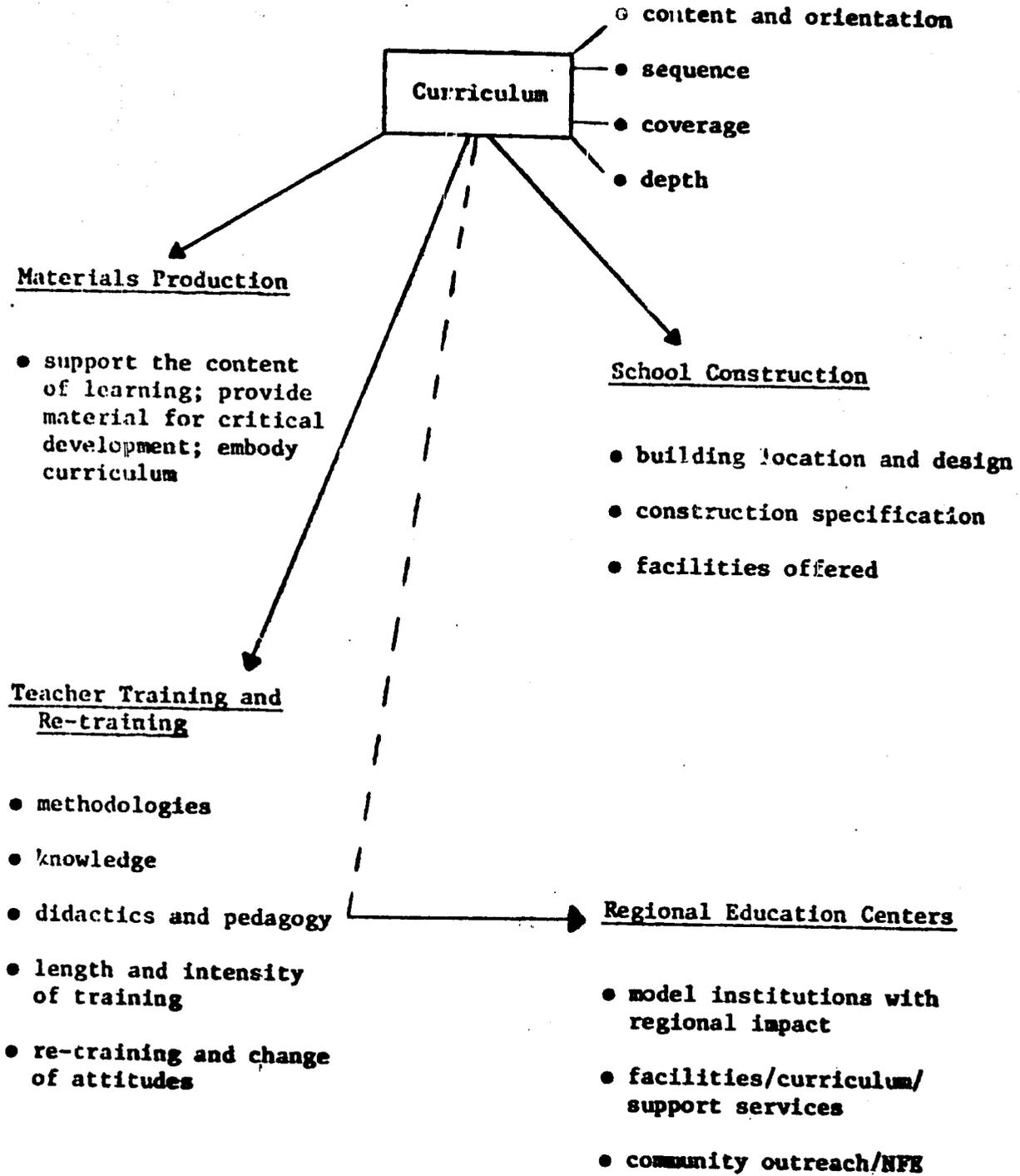
B. THE PARAGUAYAN CONTEXT

This assessment has set out to describe those factors which have endogenous or exogenous impact on the development of the Paraguayan education sector, including:

- the socio-economic context, including the statement of national goals (*Section IV*).
- the rural setting, and the characteristics of those most economically deprived members of the rural population, who are intended to be the primary beneficiaries of development planning (*Section V*).
- the educational policy framework, including the organizational structure, management, and decision-making capacity of the Ministry of Education (*Section VI*).
- the characteristics of both the primary and secondary levels of the formal system (*Section VII*).
- the process of curriculum reform and materials production, and the utilization of educational radio (*Section VIII*).
- the teacher training system, and the Regional Education Centers (*Section IX*).
- educational facilities planning and school maintenance procedures (*Section X*).
- the scope, outcome, and impact of existing non-formal education activities (*Section XI*).
- the finance and costs of formal education (*Section XII*).
- the internal efficiency of the formal education system, and the degree of equity provided by it (*Section XIII*).
- the external efficiency of the system, and the production and utilization of educational output (*Section XIV*).
- the way in which educational policies might be modified to accommodate existing shortcomings of the system (*Section XV*).

CHART I-2

IMPACT OF CURRICULUM REFORM



In addition, more in-depth treatment of special topics which bear on the educational system is provided in Annexes A through I. The statistical annex presents, in tabular form, the data which describe the system's quantitative aspects.

SECTION II

SUMMARY OF THE ASSESSMENT

This summary presents in condensed form the major factual and procedural contents of the complete report.

A. THE NATIONAL CONTEXT: CONDITIONING FACTORS AND DEVELOPMENT OBJECTIVES

Paraguay, located in the middle of South America's southern cone, is a landlocked country with a total land area of 406,752 km² and a population of approximately 2.7 million. While it has one of the highest land/man ratios in Latin America, the population is unevenly distributed. The northwest region (the Chaco) contains 60 percent of the land, but only 3 percent of the population; while the area of influence around the capital city of Asunción, demarcated by a semi-circle with a radius of 150 km, houses half of the population.

There is no urban explosion taking place in Paraguay; the population remains essentially rural. Emigration, particularly to Argentina, has been a significant phenomenon in the past, although it shows signs of tapering off.

The official language of Paraguay is Spanish, which is spoken by 55 percent of the population; but Guaraní is spoken by 92 percent of the people. It is the predominant language in the rural areas; and as all official instruction is now offered in Spanish, this has major implications for the educational development of the country.

The economy of Paraguay is essentially agricultural; the sector engages 50 percent of the economically active population, and generates 34.7 percent of GDP, as well as 95 percent of the total export receipts. In the 1960's, Paraguay's economic rate of growth was 4.2 percent; this rate increased to 6.1 percent during the period from 1971 to 1975.

Paraguay's per capita income is the second lowest in South America; and the distribution of national income is highly unequal. On the other hand, other welfare indicators, such as daily protein consumption and caloric intake, place Paraguay in an exceptional position among other Latin American countries.

Paraguay's long-term development objectives, as detailed in the current Development Plan (1977-1981), are the achievement of sustained high rates of economic growth to increase national income and labor absorption, and the continued implementation of social development policies which seek to improve the mechanisms for income redistribution. The goal, therefore, is one which incorporates both growth and equity.

In line with the objectives of Paraguay's overall development strategy, the Plan sets forth a series of policy guidelines, along with some global targets, for the social sectors. These include human resources

development, nutrition, health, education, housing, and integrated social development. Government strategies in this area are designed to promote social justice and improve the quality of life of Paraguayans.

The Development Plan stops short of making a direct connection between the educational system and the other social sectors. However, a number of program guidelines contained in the Plan are concerned with the quality of education, the coverage of educational services, the management of the system, and the forward linkages of education with the productive sectors of the economy.

**B. THE INSTITUTIONAL AND SOCIAL CONTEXT OF RURAL DEVELOPMENT:
POLICIES AND PARTICIPATION**

Participation in development entails a series of processes of learning; or, more generally, of becoming informed. Based on the assumptions that the economic and socio-cultural contexts largely determine learning needs, and that these change over time, the development of human resources should be viewed as being as much touched by overall development policies as by more narrowly defined educational policies.

Paraguay's rural development policies are based on agrarian reform, colonization, and the design and implementation of integrated rural development schemes. Increased agricultural production, through better utilization of human and land resources, will contribute to an improvement in the living conditions of the rural population, thereby contributing to the fulfillment of overall social equity.

Development axes (Ejes de Desarrollo), radiating from Asunción in all four directions, provide the physical structure for the implementation of the rural development strategy. Attention at this time is focused on the northern axis (Eje Norte) and the eastern axis (Eje Este); the Ejes program constitutes the core of Paraguay's rural development model. Integrated development packages are being developed, including community participation; land tenure; production and marketing; health and nutrition; education and human resources development; housing; and transportation and communication. The Ejes program is administered by a consortium of public institutions linked together in the National Council for Social Progress (CNPS).

The target audience for the rural development strategy is intended to be the most economically deprived portion of the rural population. This "poor majority," with an average per capita income of \$173.20, is judged to include some 72 percent of the national population. At least 82 percent of the rural population may be classified as "poor." Specific target groups for AID assistance are small farmers with 20 hectares of land or less, and artisans and employees of small industries with a maximum of 20 employees. The clientele for formal and non-formal education includes 45 percent of the target group, if only those in the 6-14 age group are considered, whether they are currently in or out of school. The potential audience increases significantly if youths and adults who could tangibly benefit from access to educational opportunities are included.

The bulk of educational services provided by the GOP in the rural areas are delivered by the schools to the population that is included within the primary-school age group. Other educational services are provided through a series of institutions which engage in NFE activities.

C. THE EDUCATIONAL POLICY FRAMEWORK: ORGANIZATIONAL STRUCTURE, MANAGEMENT, AND DECISION-MAKING

Educational policy is concerned with the employment and utilization of resources, and with their conversion into educational services. The Paraguayan MOE has operational, technical, and administrative Departments to carry out policy-related functions; the dominant theme is educational reform, based on the change of primary and secondary curricula.

All decision-making is carried out in the Ministry in Asunción; regional outreach is limited, and essentially achieved through the supervisory system. The quality of planning is dependent on the quantity, quality, and specificity of the information available; the generation and utilization of information by the MOE is currently inadequate. This situation arises both from limitation of resources and from insufficient coordination of technical units. Each Department has its own mini-investigative unit; this duplication of effort results in overlapping or inconsistent information. While each unit does have the need for specialized information, better coordination should be achieved, so that common information needs could be met more efficiently. It appears that the weakest area of management is the lack of concerted action to pool the information available to each Department for system-wide programming. Also, excessive emphasis is placed on the gathering of qualitative data, while insufficient attention is given to the collection of the qualitative information necessary to support the numbers that are reported.

The effectiveness of the Department of Planning is hampered by a lack of both material and personnel resources. Most personnel are engaged in the tedious tasks of data tabulation, which must be done by hand, as no computer services are available. However, many of the activities required for a comprehensive approach to educational planning and information management are within the purview of the Planning Department. The necessary inputs include additional personnel, access to electronic data processing facilities, improved logistical support, and short and long-term training for existing Ministry personnel.

D. THE FORMAL SYSTEM: PARTICIPATION IN PRIMARY AND SECONDARY EDUCATION

In Paraguay, primary education is free and compulsory for all children from 7 to 14 years of age. However, this legal standard remains to be realized, despite the significant increase in enrollments and the less significant progress in retention over the last few years. Still, participation rates are high: in the urban areas the rate is 95.6 percent at age 11, and in the rural areas the comparable figure is 87.4 percent.

Repetition is a major problem at the primary level. The highest rate is found in the first grade; official estimates place it at 26 percent, while independent research indicates it may be as high as 53 percent. Desertion is another critical factor in the primary system; 65 percent of all desertion takes place in the rural areas.

Secondary education in Paraguay consists of two cycles, each requiring three years of completion: the Basic Cycle and the Diversified Cycle, leading to Bachillerato. Two types of preparation are offered in the Diversified Cycle. One is in the humanities; the other is a technical track, in commercial, vocational, or agricultural areas.

There are no secondary schools, either public or private, in the rural areas of Paraguay. Many of those which are found in the towns in the interior are incomplete; that is, they offer only the Basic Cycle.

E. THE FORMAL SYSTEM: CURRICULUM REFORM, MATERIALS PRODUCTION, AND USE OF EDUCATIONAL RADIO

According to the curriculum reform law issued in 1973, the goals of Paraguayan primary education include the promotion of cognitive and affective learning and the development of psychomotor skills.

The new curriculum, which grew out of USAID technical assistance in the late 60's and early 70's, utilizes a multi-sensory approach, and emphasizes the fact that children learn in different ways, through different senses, and at different rates of speed. Individualized instruction is encouraged, as are practical learning activities. In field visits, the assessment team noted stark differences between schools using the old curriculum, where equipment was scarce, children were separated by sex, and rote memorization and recitation were the primary methodologies; and the schools using the new curriculum, where students were grouped together around tables, with effective instructional materials and aids, in an atmosphere of active, spontaneous participation.

Before a school can initiate the new curriculum, it must be authorized to do so; and the school director and teachers must have had approximately 2-1/2 months of training in theory and practice. An intensive parent orientation program is required, as is a more comprehensive assessment of students. In addition, the new curriculum is integrally related to new texts, materials, and innovative instructional practices which complement and extend goal statements, lesson plans, and physical facilities.

To date, the new primary curriculum has only been extended to 10 percent of the schools; it reaches only 5 percent of the children. This lag in implementation is closely related to the system's inability to re-train a sufficient number of practicing teachers.

The new secondary curriculum is designed to expand the secondary level beyond its present highly academic orientation. It is intended to be more relevant than the traditional program of studies; and, generally stated, to make secondary education adequate as an end in itself, as

something other than merely a path to higher education. To meet these objectives, the MOE has adopted an approach which combines academic and practical knowledge. The Basic Cycle represents a continuation of the second cycle of primary. In the Diversified Cycle, a core curriculum is common to both the liberal arts and vocational tracks. In the latter, actual practical experience is emphasized by combining theoretical instruction with workshop practice.

The new curriculum is being implemented slowly throughout the secondary system; at the present time, it has been implanted in eleven schools. It will continue to be initiated on a year-by-year basis in a small number of schools; simultaneously, it will be evaluated to determine its effectiveness. At the current rate of progress, over ten years will be required before it is installed throughout the system.

As mentioned above, successful implementation of the new curricula depends on the availability of complementary texts and other instructional materials. The Department of Educational Materials within the MOE is responsible for the design, production, and distribution in the interior, and production and distribution in Asunción is handled by private contractors. The combined output of the Department and the commercial firms meets only 50 to 60 percent of the potential demand. To date, texts have been produced only through the fourth grade; fifth-grade materials are currently in production.

To extend the current coverage of educational services, the MOE has chosen a delivery system based on the use of educational radio. The Rural Radio Project, currently in the initial stages of development, is a pilot project, designed to offer third-grade equivalent instruction to a target group of adults and out-of-school youths between the ages of 14 and 18. Financed primarily through USAID grant funds, the project is to be carried out in the Department of Caaguazú.

F. THE FORMAL SYSTEM: TEACHER TRAINING AND THE REGIONAL EDUCATION CENTERS

The current disparity in teacher qualifications is an important constraint to the implementation of the educational reform. Teachers are being trained in the use of the new curriculum in sufficient numbers to keep pace with Ministry hiring. However, the teachers currently practicing must be re-trained in the new curriculum before it can be implanted in their schools.

The pre-service teacher training program is a new plan, which adds additional years of study and specialization. Candidates must complete the secondary Diversified Cycle; those wishing to become primary teachers are required to complete two post-bachillerato years. Secondary school teachers must complete the primary-level training course as well as two additional years of training for the secondary level. In this way, all teachers are exposed to a common core of knowledge and experience.

Currently, in-service training is offered only at the Instituto Superior de Educación (ISE). Some 600 teachers per year are being re-trained; at this rate, discounting for attrition, from 10 to 15 years would be required to reach the entire teaching force. Consequently, the teacher training institutes (Centros de Formación Docente) and the Regional Education Centers (REC's) should be utilized to provide re-training programs both on-site and through mobile instructional teams.

There are presently six Regional Education Centers in Paraguay; and plans exist to add one more to the program. The REC's are designed to offer instruction at all levels of the system, from pre-primary through teacher training. They are intended to serve as centers of educational innovation; as community learning centers; and as models in teacher training, community education, and practical learning activities, to schools in their areas of influence.

G. THE FORMAL SYSTEM: EDUCATIONAL FACILITIES PLANNING AND SCHOOL MAINTENANCE

Two mechanisms for school construction and maintenance exist in Paraguay. One is the official MOE effort, carried out by the Department of Construction. The other originates from local community initiatives, to fill the gap created by the Department's lack of resources to meet all construction and maintenance needs throughout the system.

For example, funds allocated for maintenance are inadequate to enable the Department to meet more than 10 percent of the annual needs; and there is no assurance that funds allocated for maintenance will actually be used for that purpose. They are often diverted to cover the costs of new construction at the local level.

An existing schoolplant survey indicates that in 1972, only 20 percent of the schools were in good condition. Many of the 39 percent in regular condition are by now in bad condition. This means that within perhaps five years, the government may need to replace between 40 and 60 percent of its schools. In terms of actual cost, this is an enormous economic loss.

It is estimated that 50 percent of the total cost of completed maintenance is borne by local parent groups, who contribute time, materials, and labor to the extent of their ability.

H. NON-FORMAL EDUCATION ACTIVITIES: SCOPE, OUTCOME, AND IMPACT

Non-formal education activities are a significant component of Paraguay's education sector. Because of their diverse nature, however, they constitute autonomous efforts. The GOP has great interest in NFE, but has yet to develop a systematic action plan in this area. The formulation of such a strategy, however, is implied in the educational objectives for the 1977-1981 planning period. The goal is to "develop plans, programs, and content of non-formal education in the rural areas, to parallel the formal education efforts."

Currently, the responsibility for coordination of activities and institutions is vested in the National Council for Social Progress (CNPS); however, the number of institutions involved in this effort is limited, and it does not appear that coordination of educational activities, as opposed to overall program activities, is achieved.

I. FINANCING AND COSTS OF FORMAL EDUCATION

By most traditional standards of comparison, Paraguay's public financial effort in primary and secondary education is a relatively modest one. The MOE budget, as a percentage of GNP, declined from 1.85 percent in 1970 to 1.42 percent in 1975. On the other hand, the Ministry budget as a percentage of the total government budget has remained relatively constant over time, at about 15 percent.

Most schools in Paraguay receive their funding from a mixture of government and user sources. At the primary level, government finance of current expenditures ranges between 45.5 percent in rural private schools and 94.9 percent in urban public schools.

At the secondary level, while public schools still receive the bulk of their current revenue funds from the government, the proportion is considerably smaller than that at the primary level.

A very high proportion of total MOE funds goes to the salaries of teachers and administrators, in both sectors and at both levels of education.

Perhaps the most striking feature about school finance in Paraguay is the large private contribution to education in both public and private schools. At the public secondary level, parents contribute almost 25 percent of total current costs. If school-related expenditures are included, the figure increases to 64 percent, exclusive of opportunity costs of pupil time. Even at the public primary level, the comparable figure is 50.1 percent of total costs.

Unit costs vary greatly between levels, sectors, and zones, from \$41 in public primary schools to \$128 in those public secondary schools offering only the Basic Cycle. In rural public primary schools, the unit cost is \$39; in urban public primary schools, the comparable figure is \$48.

J. ECONOMIC ANALYSIS: SOCIAL EQUITY AND INTERNAL EFFICIENCY OF FORMAL EDUCATION

Equality of educational opportunity within Paraguay can be defined and measured in different ways: annual and lifetime resources received by pupils, opportunity for schooling, and educational outcomes such as years of schooling, repetition rates, promotion rates, and objective measures of learning. Particular emphasis must be given, however, to financial resources received by children, under the assumption that such resources are positively and significantly related to learning and that learning is positively related to future income and welfare.

Resources can be grouped into three categories: those provided by the school, those provided by the family for use in the school; and those provided by the family within the home.

Measuring equality of opportunity by educational outcomes implies that resources should not be equal between groups of Paraguayan children. Rather, they should be larger for the children from the lowest income homes and with the least educated parents.

At the primary level, in terms of school resources, children in urban schools receive more than children in rural schools. Children in private schools receive more than children in public schools. In terms of school-related expenditures by the family, the same conditions hold. In fact, children in urban schools have more advantages than children in rural schools in almost every measure of educational outcomes; the same is true for children in private schools as compared with public schools. These inequalities at the primary level are largely repeated at the secondary level.

Internal efficiency exists when a system either maximizes output for a given cost or budget, or minimizes cost for a given output. Costs are usually readily determined; the problem with determining efficiency in an educational system is consensus on and measurement of output.

The greatest cause of inefficiency in Paraguay seems to be repetition. The major source of financial waste is repetition which ends in desertion before the fourth grade. The expenditures incurred in repetition of those students who finish either fourth or sixth grade are also significant, in both urban and rural areas.

K. ECONOMIC ANALYSIS: EXTERNAL EFFICIENCY IN THE PRODUCTION AND UTILIZATION OF EDUCATIONAL OUTPUT

Central to the notion of external efficiency is the private and social utility of education, which can be measured in terms of economic returns. To the extent that education has an impact on labor productivity, it has a positive impact on national income growth. Education can also help to fulfill the objective of a more equal distribution of income.

Level of educational attainment and age of the individual are the most important factors which determine earnings in the modern, protected sector. The incremental value of secondary education over primary is \$961 per week, but it is only realized if the present Diversified Cycle is reached. The impact of primary and basic secondary is definitely more modest.

In the rural areas, since educational attainment is likely to be quite low throughout the population, it is quite possible that on the aggregate, the impact of the schools on the spread and levels of income is currently very low, and has been so in the past. Since the returns from technology-deepening inputs appear important, especially on the smaller

farms, a case is made for the development of learning packages which incorporate such technologies, whether in NFE activities, through informal learning mechanisms, or by their incorporation in the school curricula.

L. POLICY ANALYSIS

Strategies developed by planners to achieve Paraguay's national development goals include the development of the Itaipú hydroelectric project; entry into a program of agro-industry; and investment in import substitution industries. All three have major implications for Paraguay's education and training system. The educational requirements, which call for the provision of educational services to groups that are currently educationally deprived, will require the use of both formal and non-formal approaches.

The present system of primary education delivers an incomplete product to an insufficient number of students. The national development strategy requires not just a few persons educated to a high level of ability, but rather a large number of persons equipped with some minimal level of cognitive and communications skills. There is evidence that close to 100 percent of the primary age group would be enrolled in school if sufficient opportunities for enrollment were provided.

However, the rural schools are insufficient to provide minimal levels of education needed for social and economic development. Children who do spend two or three or four years in the system end up spending all of that time at the same grade level.

While the MOE has initiated an educational reform to meet the development needs of Paraguay, there are insufficient resources to complete the task. Options do exist, however, including the institution of an automatic promotion policy; and the utilization of existing local resources to construct and maintain schools. At the present time, it is recommended that public subsidization of secondary and higher education be kept at a minimum; and that resources be devoted to increasing coverage at the primary level and to expanding the capacity of the system to re-train primary teachers.

SECTION III

SUMMARY OF CONCLUSIONS AND RECOMMENDATIONS

The education sector examined in this assessment encompasses the formal system, non-formal education activities, and informal learning. However, in response to current GOP policy initiatives, the bulk of the assessment is devoted to the educational reform. Non-formal education and informal learning are discussed in relation to the larger context of rural development policies. In addition, non-formal education is examined in terms of its relationship to the development of formal education in the rural areas.

A. FORMAL EDUCATION

At the present time, the formal education system in Paraguay is undergoing fundamental changes based on the reform of the curriculum. As expressed in the analysis of national objectives in Section IV, more and better education is sought. More education means extending educational opportunities, particularly in the rural areas. Better education is based on a program of studies which seeks to attain higher levels of quality through the subject coverage; the depth, treatment, and sequence of content; the teaching methodology; and the evaluation of student performance. In order to be successful, the educational reform must achieve:

- the thorough design of the new curriculum for the primary and secondary levels.
- the generalization and implantation of the new curriculum throughout the educational system.
- the reform of the teacher training and re-training components.
- the production and distribution of textbooks and materials which support the new curriculum.
- the efficient delivery of educational services.
- the development of a comprehensive and effective mechanism for planning, monitoring, and evaluation.

The following are the main conclusions and recommendations emanating from the analysis of these issues contained in this report.

1. Curriculum (*Section VIII-A*)

It is concluded that the curriculum, as designed, can fulfill the objectives it is intended to achieve (*Table VIII-2*). It represents a clear departure from the traditional curriculum (*Table VIII-3*), and it has been well received by teachers and students in those areas where it has been implemented. However, to date, the new curriculum has been implemented in less than 10 percent of schools, and it is reaching only

5 percent of all primary students. Its implementation at the primary level is lagging due to the limitations of the teacher training system; the lack of fluidity in the decision-making apparatus, particularly in terms of inter-unit coordination within the MOE (*Section VI*); and the shortage of available resources. Similar problems have impeded the implementation of the curriculum at the secondary level, where the teacher training component is still not fully developed.

The following recommendations result:

- a. Expansion of the new curriculum. Teacher re-training is the most critical need. Through the Formación Docente system, an in-service professional renewal program should be developed to decentralize and generalize the functions of teacher re-training. An intensive teacher training program is needed, in which Regional Education Center staff and Formación Docente professionals would be trained to serve as facilitators for implementing the new curriculum at the local level. (*See also No. 2 below.*)
- b. Distribution of textbooks and materials. It will be necessary to provide schools and teachers with more and better instructional materials. Many of these could be provided through the Regional Education Centers, as well as by mobile instructional laboratories. (*See also Nos. 3 and 4 below.*)
- c. Construction and repair of classrooms. As efficiency and effectiveness are improved, the educational system will need more and better classrooms in both the rural and urban areas. USAID could complement World Bank efforts by providing assistance in the area of maintenance and repair. (*See also No. 6 below.*)
- d. Secondary education. Better coordination is required among the programs at the primary, secondary, university, and vocational levels. Any planning effort requires a clear definition of expectations for Paraguayan secondary schools and a demarcation of roles for these schools and for the technical/vocational institutes. Qualitative data, in addition to quantitative output measures, are necessary to assess the effectiveness of the system at all levels.

2. Teacher Training and In-service Training (*Section IX-A*)

It is concluded that improvement in this area is critical to the achievement of the educational reform. This is a most demanding task, in terms of the numbers of teachers involved and the complexity of effecting behavioral and attitudinal change on the part of teachers who have traditionally used different didactic approaches. For the majority of practicing teachers who need to be re-trained, habits such as lecturing to the class, requiring memorization, evaluating through examinations, and

following the same format year in and year out, are often easily acquired; but they are not easily lost. On the other hand, a large proportion of newly trained teachers must experience a letdown when they move from model training institutions with good facilities, sufficient inputs, and intellectually stimulating atmospheres, to the poorly equipped and inadequately housed rural schools.

The coordination among units within the MOE which would result in upgrading the teacher training component of the reform is not adequate. The coordination that does exist is reflected more through intent than through action. The initial sense of purpose and enthusiasm for carrying out the reform seems to have been lost. While this may be attributed to unrealistic objectives and expectations as well as to weak planning, it may also be the result of the failure to meet targets on schedule, and the concomitant policy changes that must be made without appearing to retreat from original goals.

The following recommendations are made:

- a. Planning and management. The monitoring of progress, and the resultant detection of potential problems, should become an integral part of the teacher training component. Starting with the specification of goals, necessary inputs should be identified and detailed. Annual or biannual targets capable of objective measurement should be adopted, and a continuous evaluation mechanism should be established.
- b. Acceleration of the re-training effort. Priority should be given to the establishment of a decentralized, in-service program to provide teacher re-training in the use of the new curriculum. This program would be a separate institutional program from the pre-service training program. This activity entails fulfillment of preliminary requirements having to do with:
 - Materials acquisition. The entire array of low-level media and instructional aids should be studied, and those materials which seem most appropriate should be purchased, or produced, and distributed.
 - Instructional development teams. The Regional Education Centers and Formación Docente institutes, including ISE, should establish a special corps of teachers to reach others in need of re-training.
 - Mobile in-service programs. Six decentralized teacher education centers currently exist. If given the resources to mobilize their preparation and renewal programs, they could very efficiently reach local teachers. The mobile training laboratories would have to be specially equipped to assist teachers with materials production, diagnosis, etc., on an extension basis.

3. Regional Education Centers (Section IX-B)

It is concluded that despite the relatively good educational profile of the REC's, there is reason for concern about their effective use. The laboratories, including equipment, facilities, and materials, are far too scarce and ill-used to function well as good practical learning areas.

Although the REC's were designed to set their own course, and to emphasize agricultural and technical education at the post-primary levels, very little is being accomplished in these areas.

The centers fail to a large extent in their role as dissemination points for good instructional methods and materials to the many surrounding schools in their service areas. They have focused attention on their own programs, to the detriment of their potential as the true regional agents for educational change.

Even though the centers were established to serve as model community learning centers, e.g., to meet basic formal and non-formal education needs of adults and out-of-school youth in such areas as health, agriculture, and family living, existing activities of this nature are relatively ineffective. The REC program does not now have the organizational capability to design, implement, and follow through with community-based, high-quality continuing education programs.

The REC's have been unable to fulfill another of their original purposes, which was to serve as model institutes for teacher development. This problem is also one of organizational capacity, including methods, human and fiscal resources, materials, and implementation plans. Two dimensions to this particular problem are the limited scope and coverage of the REC's, and the absence of a comprehensive design which would enable the centers to serve as decentralized teacher development institutes.

The following recommendations are made:

- a. Organizational development. The centers must develop the capacity to work with teachers in the regional service areas. They should serve surrounding schools as models for curriculum innovation and, more importantly, as dissemination points. There is a need to develop human and material resources, as well as the organizational and management expertise to design, develop, and implement a comprehensive teacher in-service education program which would lead to professional certification in accordance with the new teacher training program.

- b. Emphasis on Community Education Programs. The REC's should focus on becoming more effective learning resource centers, and build their capacity to serve the more broadly-based social, cultural, and economic development needs of the communities in the service areas. Emphasis must be given to providing more flexibility, perhaps through mobile libraries, seminars, health and nutrition units, etc., and creative organizational programming. The major criterion for success will be the degree to which the centers can integrate educational programs, formal and non-formal, to serve a larger segment of the regional population.
 - c. Dissemination of program activities. The REC's should be used as centers for in-service education, as models for teacher groups to observe on a released-time basis, and as settings for research and development activities. A special corps of trainers should work out of the REC's to reach teachers in the surrounding areas who have as yet received no instruction in the use of the new curriculum. The students and parent groups of the REC's could also assist other schools and communities in implementing their programs.
 - d. Emphasis on agricultural education. The lives of the rural children of Paraguay are oriented to agriculture; yet, the centers have not developed this phase of the secondary curriculum. The emphasis should be on providing practical experiences, through which children and adults could be given the opportunity to learn the techniques of raising and breeding animals, growing crops, processing milk, cheese, and butter, etc.
4. Production and Distribution of Textbooks and Materials
(Section VIII-B)

At the current stage in the progress of the reform, emphasis has been placed almost exclusively on the technical aspects of curriculum design. Insufficient attention has been given to the related issue of how the new program of studies is to be made generally available to the largest number of users through the provision of complementary instructional materials.

The Department of Textbooks and Materials Production appears to be located in a "residual" category. Its physical and production facilities are inadequate. The communication flow with other departments is not sufficiently comprehensive, in either the planning or the implementation phase. Within the MOE, there is excessive dispersion of effort, as each department concentrates on its own narrowly conceived tasks, rather than on the overriding issue of how the strategy of the reform can best be accomplished through coordination and cooperation among the various units. (See No. 7 below.)

The Department's limitations are therefore traceable to a lack of human and financial resources, compounded by a less-than-optimal utilization of existing ones. Texts are not being produced rapidly enough, or distributed widely enough, to keep pace with the implementation of the reform. Thus, the relative effectiveness of the teacher training component, for example, is further undermined: those teachers who are newly trained or re-trained in the use of the new curriculum are faced by a situation in which they have no materials, and their students have no texts, to complement its use.

The primary recommendation relating to the production and distribution of textbooks and materials is set forth in Section 1.a above. In addition to utilizing the REC's and mobile instructional laboratories as dissemination points, however, it is also suggested that the functions of the Department of Textbooks be more closely correlated with those of the other units within the NOE, so that appropriate instructional materials may be designed, produced, and distributed more efficiently.

5. Educational Radio (Section VIII-C)

The rural radio program is a pilot project which is still in its preliminary planning stages and therefore could not be fully evaluated. However, a number of areas related to the likelihood of successful implementation and the significance of the project's impact have been identified. These include:

- a. Adequate identification and assessment of learning needs, which are derived from a socio-economic profile of the population. The initial findings of a commissioned survey are now available to program personnel, although the tabulations represent a maze of new data which are not organized in any systematic fashion and therefore do not lend themselves to meaningful interpretation. The information already collected should be processed in such a way as to increase its utility during subsequent implementation phases.
- b. The definition of program content, based on the identified learning needs, and the design of curricula, including decisions on subject coverage, content, depth, and sequence. The intent in designing a curriculum for the radio program is to evolve an educational message which combines instructional aspects of third and fourth grades in the first level, and fifth and sixth grades in the second level. However, in the context of the radio project, the meaning of equivalent education and its implications for lesson design are still unclear.
- c. The training of personnel to carry out program-related activities. These include: deciding sequence of contents, writing scripts, broadcasting lessons, and producing related

materials. It is anticipated that the transfer of information and expertise should encompass both training for program design and formulation and organization for program delivery.

- d. The organization of the delivery system. This includes setting up the recording studio, establishing the radio network, organizing the listening posts, identifying and training the monitors or facilitators, producing and distributing the related support materials, and promoting and maintaining participation.
- e. The evaluation of the project. This should be aimed at establishing what the perceived value-added of the project might be. It includes the specification of evaluation criteria in different areas: learning achievement; user perception surveys; cost-effectiveness analysis; multiplier effects; and general impact, including demand and participation rates, renewed participation in school, and variation in socio-economic indicators.

6. Educational Facilities Planning and School Maintenance (Section X)

From the analysis of the facilities planning and school maintenance mechanism, a number of conclusions emerge which deal with current constraints.

A dual system for carrying out school construction and maintenance exists in Paraguay. One is based in the MOE and is carried out by the Department of Construction. The other, proceeding from community and user initiatives, is a result of fiscal constraints on the capacity of the MOE to attend to all construction and maintenance needs throughout the educational system.

Planning activities are carried out systematically within the Department of Construction. Procedures exist for carrying out school construction, designing and locating buildings, and determining the number of schools to be built. However, because of the limited scope of the planning mechanism, the system at large lacks the capacity to carry out planning activities on an informed and systematic basis.

Problems of lack of resources, lack of information, and lack of standardized procedures beset the area of school maintenance. Currently, there is no adequate school-by-school inventory which describes potential or actual problems. As a result, the work required cannot be identified or costed out, and no priority rankings can be established. The Department lacks resources. Its sources of funding are inelastic and, to some extent, uncertain; and therefore it cannot deploy sufficient manpower to deal with the multiple problems and emergencies that arise in any given year.

A significant economic loss is incurred through lack of proper maintenance. It is estimated that current replacement of the physical plant to provide adequate facilities throughout the system may cost anywhere from \$49 million to \$97 million, depending on whether 40 percent or 60 percent of the plant is replaced. These sources do not include the needed expansion in the system. By contrast, it is argued that new schools with adequate maintenance will require about 1 percent of the current equivalent of the original construction cost per year for that purpose. Thus, a comprehensive program of maintenance, if only new schools are assumed, would cost \$437 per school, and anywhere from \$1.2 million to \$1.6 million annually to cover the entire system.

The following recommendations are made:

a. A series of studies to provide an adequate information base.
These include:

- student concentration studies and socio-economic studies.
- a national inventory of all schools.
- space norm studies to facilitate planning for safe and useful space.
- the development of construction norms which correspond with regional construction codes such as those developed in the United States.
- the development of site selection criteria.
- the drawing up of a long-range plan for site acquisition and construction, prioritized by need.

Optional studies include:

- feasibility study for the establishment of factories to produce school furniture.
- feasibility study for the establishment of factories to produce modular, prefabricated school construction elements.
- exploration of the possibility of computerizing much of the data generated in the studies cited above.

b. Organization for managing a maintenance program. Two alternative plans are offered. The first one sets up a unified Construction and Maintenance Department, while the other separates the two. Included in the proposed organizational structure of the Department are planning, technical, legal, financial, and maintenance offices. Also,

regional offices should be developed, and the organizational design should take advantage of existing community support and participation.

7. Management, Decision-Making, and Planning Mechanisms (Section VI)

A number of recommendations emerge from the analysis of information management and utilization within the MOE.

Information generation and utilization are weak areas of management in the Paraguayan MOE. The current inadequacy of the information system arises both from limited resources and from insufficient coordination of technical units.

The information-gathering mechanism is disaggregated, as each technical unit essentially has its own mini-investigative unit. While the diversity of information requirements justifies, to some extent, the division of labor, this disaggregation also has some pernicious effects. Much effort is currently spent on collecting information that is too limited in scope. A significant amount of duplication and overlap is taking place. The duplication often causes different figures to emerge about subjects which otherwise appear to be the same.

Although a tremendous amount of information is collected, a significant portion appears to be of peripheral value in contributing to systematic policy design. Excessive emphasis is placed on the collection of quantitative data, such as enrollment and numbers of teachers, while insufficient attention is given to qualitative analysis, which is needed to support the number that are reported.

The utilization of information and inter-unit coordination is less than optimal. Although department heads are generally articulate about the programs they manage and supervise, there is a lack of concerted action to pool the information available to each department. This impedes the development of planning as a system-wide function.

The Department of Planning has produced a number of studies and documents, and is also charged with drawing up annual budget proposals. The Department's role is still limited, however, in terms of planning and evaluation activities. Resources are not available to carry out specialized technical planning functions on a continuous basis.

The following recommendations are made to strengthen the planning mechanism:

- a. Additional personnel, perhaps some on loan from the Ministries of Agriculture (MAG) and Justice and Labor (MJL).
- b. Electronic data processing facilities are required at an early stage.

- c. Improved data collection, which will require logistical support as planners and supervisors spend more and more time in the field.
- d. Short and long-term training of Ministry personnel.

8. Education Finance and Economic Analysis

No explicit recommendations are made in these areas. However, a number of conclusions have been set forth which bear on substantive issues. In addition, constraints on system performance have been identified. These are stated, in turn, in relation to each of the areas.

• Education Finance (Section XII)

- a. The MOE budget as a percentage of GNP has declined from 1.85 percent in 1970 to 1.42 percent in 1975, while the MOE budget as a proportion of the government budget has remained constant, at about 15 percent. However, all school expenditures, inclusive of private sector spending, are 1.96 percent of GNP. And if family, school-related expenditures are also included, the total educational effort is estimated to be 3.24 percent of GNP.
- b. At the primary school level, government finance of current expenditures ranges between 45.5 percent in rural private schools and 94.9 percent in urban public schools.
- c. A very high proportion of total MOE funds goes to the salaries of teachers and administrators. Very small amounts of government funds go to maintenance and repairs, and non-personnel services.
- d. Private contributions to education are high in both public and private schools. At the public secondary level, parents contribute almost 25 percent of total current costs. When all school-related expenditures are included, the proportion increases to 64 percent. At the public primary level, family contributions amount to 50 percent of total costs.
- e. Unit costs vary by levels, sector and locations, as follows:

• by level and source of support (Table XII-9)

	<u>Public</u>	<u>Private</u>
Primary	\$ 41	\$ 61
Secondary (Basic cycle only)	128	142
Secondary (Complete)	97	157

Commercial	123	N/A
Humanities	95	204

• by sector and location, primary level (Table XII-10)

	<u>Public</u>	<u>Private</u>
Rural	\$ 39	\$ 43
Urban	48	78
Asunción	47	92

• by sector and location, secondary level (Table XII-11)

	<u>Public</u>	<u>Private</u>
Urban	\$ 97	\$ 157
Asunción	98	313

• Social Equity and Internal Efficiency (Section XIII)

- a. Statistically significant differences of the value of school resources received by children are as follows. Children in urban schools receive more (\$57) than children in rural areas (\$39). Children in private schools receive more (\$61) than children in public schools (\$41).

In terms of school-related expenditures by the family, higher expenditures are incurred in the urban (\$40) than rural areas (\$21); higher expenditures in Asuncion (\$57) than other urban areas (\$25); and higher expenditures in private (\$35) than public schools (\$25).

In terms of lifetime resources received, children in private schools receive almost double (\$281) the total primary school resources received by children in public schools (\$145). Children in urban areas receive almost double (\$250) the resources received by children in rural areas (\$126). The differentials between public primary and private secondary indicate that eight rural public primary school children could be educated for the cost of one private secondary student in Asunción.

- b. Children in urban schools fare better than children in rural schools in almost every measure of educational outcomes. Pupils in Asuncion do better on objective tests of cognitive achievement, both verbal and science, than do pupils in rural areas. Pupils in private schools do better than pupils in public schools. No statistically significant differences are found within the rural areas (Table XIII-2).

The only measure which is approximately equal in all cases is the drop-out rate; the difference is statistically significant only between high-income and low-income students.

- c. The cohort performance in urban and rural areas through grade six is as follows:

	<u>Urban</u>	<u>Rural</u>
● Number of years to produce a 6th grade finisher	10.40	11.77
● Total student/year count	3,845	3,915
● Student/year count with apparent return <u>1/</u>	3,466	3,081
● Student/year count with no apparent return <u>2/</u>	1,575	1,945

- d. In terms of financial flows and cost effectiveness resulting from the cohort performance:

- For each 1,000 initial entries, the educational system spends:
 - in the urban areas: \$279,272 through the sixth grade.
 - in the rural areas: \$196,769 through the sixth grade.
- Of total expenditures:
 - in the urban areas, 69 percent is spent on finishers of the cycle, but 31 percent is lost through desertion.
 - in the rural areas, the figures are 61 percent and 39 percent, respectively.

1/ Includes those who finished the prescribed course of studies (including repeaters).

2/ Includes those who dropped out before fulfilling the required cycle.

- On a per unit basis, the required outlay for producing a sixth-grade finisher is \$575 in the urban areas, and \$461 in the rural areas.
- For each additional year that a student is in the system in the urban areas, approximately \$96 is spent if the student is expected to finish sixth grade. In the rural areas, the amount is \$74.
- Assuming equality of value-added by the school, and ceteris paribus conditions, rural schools are more cost-efficient than urban schools. It would cost \$223,080 to produce 486 sixth grade finishers (the number of 6th grade finishers in the urban schools) in the rural schools, is opposed to \$279,272 in the urban schools.
- External Efficiency (Section XIV)
 - a. The structure of the labor market

Three segments are clearly recognizable: the modern, protected sector with its set of procedures for entry, assignment, promotion, and leave; the urban autonomous sector, which absorbs individuals who lack the credentials, education, skills, or connections to enter into the protected sector; and the rural labor market, which is traditional and oriented to family labor participation. Of the three, the last is undoubtedly predominant in Paraguay, with a labor force estimated at 400,000. The autonomous urban market comprises 52 percent of those employed in the urban areas.
 - b. Under-employment and sub-utilization of human resources

While open unemployment is low, a PREALC/ILO study estimates that the equivalent rate of unemployment in Asunción through under-employment is 22 percent. The sub-utilization of labor resources in the rural economy is equivalent to an unemployment rate of 35 percent.
 - c. The characteristics of participation in the labor force
 - The Paraguayan labor participation model is based on a distinctive queueing mechanism. Entry and placement are largely determined by individual characteristics such as sex, age, and educational level. Heads of families are given preference in participation; their unemployment rate is only 2.5 percent. In the rural areas, the labor force is 80 percent male. Due to the nature of agricultural production, overall participation rates fluctuate between 28 and 41 percent. Because

male participation is stable throughout the year, additional labor requirements are met from increased female participation (which ranges from 18.5 to 40.6 percent) and youth participation (from 3.2 to 16.6 percent).

d. The impact of education on earnings and on labor participation in the modern and autonomous sectors of the urban market

- The modern, protected sector is geared to stable employment with fixed incomes, while the traditional, autonomous sector is geared to stable employment with variable incomes. The first category attracts those with higher educational attainment, whereas the reverse takes place in the autonomous sector.
- The queueing system at work in the market is an effective mechanism for discrimination by sex. The spreads between male and female remuneration widen as higher levels of specialization are reached in the private sector (*Chart XIV-4*).
- Education, or the possession of an educational certificate, is an important determinant of access to more privileged positions in the labor market and hence higher lifetime earnings. Educational attainment is the most important predictor of earnings (explaining 12 percent of the variance). The incremental value of secondary education over primary is \$961 per week, but it is only realized if the present Diversified Cycle is reached. The impact of primary and basic secondary education on additional income is definitely more modest (*Tables XIV-5 and XIV-6*).

e. The rural labor market and factor productivity

- Males are the biggest contributors to family labor on the small farms. The youngest males (aged 6 to 12) make the largest contribution, particularly on farms of 10 to 19 hectares in size.
- Differences in farm capital endowment are not related to the utilization of different technologies of production.
- Farmers in all groups are income maximizers, but factor markets are not totally fluid.
- All farmers adjust the composition of output in order to utilize those factors which can be obtained most cheaply.

- The returns per unit of investment in fixed capital and land vary inversely to the size of the farm. Gross returns as a proportion of fixed capital range from 1.26 on the smallest farms to .66 on the largest farms.
- Gross farm income goes up with the size of farm. However, the increase in income is not concomitant with the increase in the size of the farm. While the land size ratio ranges from 1.0 to 4.7, the net farm income ratio ranges from 1.0 to 7.6. Further, the labor productivity ratios range from 1.0 to 4.15.

f. Implications of findings for rural education

- The structural aspects of the labor market are important determinants of the level and spread of incomes.
- As educational attainment in schools is likely to be low on the average throughout the rural areas, it is quite possible that the impact of schools on income determination has been and continues to be low.
- The returns to technology-deepening inputs appear important, particularly on the smaller farms. This argues in favor of the design of learning packages which incorporate such technologies, whether in NFE activities, through informal learning mechanisms, or by their incorporation in the school curricula.

B. NON-FORMAL EDUCATION ACTIVITIES

Although the development of NFE is explicitly stated as one of the educational objectives of the GOP, there is currently no policy for accomplishing this goal. In this regard, a distinction should be made between the existence of NFE activities, even if they are sponsored by central government institutions, and the existence of a NFE policy.

However, there are important elements which may constitute the basis for constructing policy. One is the concerted government action displayed in the Eje areas, which has already linked a number of institutions, and their actions and activities, in a specific geographical setting which is judged of highest national priority. Another is the strengthening of the Servicio Nacional de Promoción Profesional (SNPP), to promote its capacity to carry out operations in the rural areas and the interior. The existence of these mechanisms reveals that the GOP is not engaged in a piecemeal approach.

There are a number of institutions which provide NFE services. Their activities are varied and fulfill a number of needs. A typology of such

activities by their functions and purposes indicates that they provide pre-employment training, in-service training, production training, and basic education.

The existing information base, however, is inadequate for carrying out substantive analyses or for programming policy. Substantial gaps exist in such areas as costs and financing, delivery and methodologies, and impact and benefits.

Two recommendations result.

- a. The development of a useful data base. A number of institutions, particularly those which appear to have a measurable impact, should be surveyed closely. The following areas in the organizations and activities should be examined: specialization, location, and scope; organization, management, and coordination; delivery; and methodologies. Also, the economic aspects should be examined, including the ability to utilize community resources. Equal emphasis should be placed on collecting information on the participants: tracer studies, perception surveys, and socio-economic and individual profiles. The information should be of sufficient quality and specificity to allow the testing of hypotheses in those areas which are amenable to this kind of measurement.
- b. Aspects of organization and delivery. In the Eje project areas, the effort should concentrate on strengthening the capabilities of the Oficina Nacional de Progreso Social, in an attempt to develop a mechanism for coordinating, supervising, and strengthening the NFE components of the institutions which are currently operating in the areas. One of the main tasks would be to find the most efficient means of mobilizing community resources for participation; and organizing the content and sequence of the program offerings.

The participation of the Regional Education Centers (REC's) in the development of NFE was already voiced when listing the recommendations regarding their role and functions (*See No. A.3 above*). The REC's are in a particularly favored position to be community-based learning resource centers, as well as training centers. They have model facilities and access to land, the best qualified teaching force, and highly motivated students; and they are located in central communities which have a radius of impact over other communities. Their location is also strategic due to their geographical distribution throughout the country.

C. INFORMAL LEARNING AND DEVELOPMENT PARTICIPATION (*Section V*)

The following diagnosis can be made regarding the educational input into the rural development strategy of Paraguay:

- There is a need to strengthen participation in rural development just as there is a need to reinforce the capacity of GOP institutions to deliver their services.
- The schools, by their very nature, concentrate their efforts in one segment of the population and their impact must be observed over the long run.
- There does not exist a highly developed NFE infrastructure in rural Paraguay, and the resources are lacking to adopt systematic actions to create such an infrastructure in the short run.

This leads to the conclusion that a major effort must be undertaken to understand the importance of informal learning as a concomitant feature of development participation. The tangible result would be the incorporation of learning and communication as integral components of the different programs that are undertaken.

This conclusion is consistent with three important findings of the study: (a) just like any other group, small farmers have a highly developed capacity to make rational decisions; (b) there already exists a well-developed informal mechanism for communication and individual and social interaction in rural Paraguay; (c) both individuals and institutions face critical constraints for carrying out their actions and operations.

On this basis, it is recommended that a study be undertaken in which a detailed analysis of the learning and social organization implications of proposed development programs can be spelled out. The identification of educational implications should result in concrete guidelines for producing possible learning packages which would be included as program components. The identification of learning packages must be complemented with decisions concerning the delivery of the packages. Print materials can be designed and produced. Radio scripts can be written. Person-to-person and group patterns of communication can be explored, whether in small towns or cooperative settings. Information packages can become elements of NFE activities. They can also become a part of the school curricula.

It should be understood that the goal of this exercise is to strengthen, on a systematic basis, the flow of information and learning in the rural areas. While education cannot by itself bring about social change, it is clear that the effectiveness of the development process is largely dependent on the extent to which individual and institutional participants are informed about each other.

SECTION IV

THE NATIONAL CONTEXT: CONDITIONING FACTORS AND DEVELOPMENT OBJECTIVES

Educational policy and performance are determined in large measure by the particular social, economic, cultural, and political environment from which they emerge. In addition, they are affected by the demographic and geographic characteristics of the region which they are designed to serve.

The purpose of this section is to analyze the Paraguayan setting, tracing to the extent possible the implications for carrying out educational policy. The first part of the section identifies the factors which affect or condition educational policy in Paraguay, while the second examines Paraguay's social development strategy.

A. FACTORS THAT CONDITION EDUCATIONAL POLICY AND PERFORMANCE

1. Geography and General Characteristics

Paraguay is a relatively small country by South American standards, with a total land area of 406,752 square kilometers. It is landlocked, located in the middle of South America's southern cone, and bordered by Argentina, Bolivia, and Brazil. Paraguay's geographic location has been an important factor in limiting the country's economic and population growth. Asuncion is 1,000 miles up river from Buenos Aires, the traditional port for Paraguay's exports. Access to markets was a prime factor in attracting settlers to Brazil, Argentina, and Uruguay, rather than to Paraguay. Although the present road and river network offers improved access to export markets, Paraguay continues to be at a considerable transportation disadvantage.

The Paraguay River divides the country into two geographical regions: the Chaco in the northwest and the oriental region to the southeast. Asunción, the nation's capital, is located in the southeastern region. Eastern Paraguay is an area of spacious plains, broad valleys, and low plateaus, with rainfall averaging 60 inches per year. About 30 percent of the area consists of soils suitable for intensive agriculture; 20 percent is suitable for livestock and occasional agriculture; 40 percent is usefully mainly for livestock; and the remaining 10 percent, for forest use only. The most fertile soils are found in the Itapúa and Alto Paraná areas, which are still very sparsely populated, although much colonization is taking place. The most densely settled areas surrounding Asuncion have depleted soils and small land holdings.

The population of Paraguay was approximately 2,700,000 in 1976. Sparsely populated, with a population density of only 6.6 per km², the country has at the same time one of the highest land/man ratios in Latin America. However, the population is unevenly distributed in relation to the land: the Chaco contains 60 percent of the land but has only

3 percent of the population, while the area of influence of Asunción, demarcated by a semi-circle with a radius of 150 km, houses half of the population.

The population is essentially rural; and unlike other South American countries, no urban explosion is taking place. Emigration, particularly to Argentina, has been a significant phenomenon in the recent past, although it shows signs of tapering off.

The Paraguayan population also shows a marked degree of racial homogeneity. Guaraní is spoken by 92 percent of the population; but Spanish, which is spoken by 55 percent of the population, is the official language. The political history of the country has been shaped by periods of strong governments, interspersed by periods of instability, and marked by two devastating wars, in 1870 and 1934. For the past 22 years the country has been governed under the presidency of General Alfredo Stroessner.

The economy is predominantly agricultural. The sector engages 50 percent of the economically active population, and agricultural activities generate 34.7 percent of the GDP as well as 95 percent of the total export receipts. In addition, agriculture accounts for 60 percent of the gross value of industrial production, and 70 percent of industrial exports.

Paraguay's per capita income is the second lowest in South America. The distribution of national income is unequal; in 1970, the top 5 percent of households received 30 percent of all income; the upper 20 percent received 62 percent, while the lowest 20 percent received only 4 percent of the national income.^{1/} On the other hand, daily caloric and protein intake, both important welfare indicators, place Paraguay in an exceptional position among Latin American countries. Daily caloric intake is equivalent to 119 percent of estimated requirements; protein intake is 73 grams per day.^{2/}

^{1/} International Bank for Reconstruction and Development, Report No. 1945-PA, November 23, 1976. By comparison, estimates for Honduras and Costa Rica, also for 1970, show the following distribution:

	<u>Honduras</u>	<u>Costa Rica</u>
• Highest 5% of households	28.0	23.0
• Highest 20% of households	60.6	50.4
• Lowest 20% of households	2.5	5.4
• Lowest 40% of households	8.4	14.6

^{2/} Ibid. By comparison, in Honduras the caloric intake is 96 percent of requirements, with a daily protein intake of 58 grams. In Costa Rica, the corresponding figures are 110 percent and 63 grams. In El Salvador, they are 87 percent and 43 grams.

2. Population Distribution and Urbanization

The distribution of the population is highly unequal throughout Paraguay. Gini coefficients of population concentration derived in a study published by the Centro Paraguayo de Estudios Sociológicos (CPES) for the period from 1950 to 1972 are as follows: 1950 = .70; 1962 = .71; and 1972 = .67.^{1/} In 1972, 70 percent of the population lived on 18 percent of the land. From 1950 to 1972, the urban population increased from 34.6 to 37.4 percent of the total population (from 460,000 to 881,000 in absolute numbers), while the rural population declined from 65.4 to 62.6 percent (from 862,000 to 1,474,000).^{2/} Between 1962 and 1972 the area of highest population growth was the Department of Alto Paraná, where the urban population grew at an annual rate of 23.27 percent, and the rural population increased at the annual rate of 11.35 percent.^{3/}

The rate of change in urban population indicates that, unlike many other Latin American countries, there has been no urban population explosion in Paraguay. Besides Asunción, the urban foci of internal migration have been Caaguazú (which grew at the rate of 13.27 percent in the 1962-72 period), Pilar (9.17 percent), and Pedro Juan Caballero (7.54 percent). However, all three are small urban centers, ranging from 8,000 to 21,000 inhabitants.

In terms of the total population, the relative importance of immigrants is rather low in most areas of the country, with the highest concentration of immigrants in urban areas found in the Department of Alto Paraná. The greatest points of migrant concentration are the rural areas around Asunción. As a rule, the immigrants are between 15 and 25 years of age, and they typically engage in small manufacturing activities (e.g., artisan crafts), construction, commerce and trade.

3. Recent Economic Performance: Labor Absorption and Employment Structure

Current economic statistics from the 1977-1981 Development Plan show that the economy experienced more vigorous growth in the last five-year period than during the 1960's, when the growth rate was 4.2 percent.

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- ^{1/} Rivarola et al., La Población del Paraguay, Asunción, CPES, 1974.
- ^{2/} The urban population in Paraguay is defined as the population living in urban centers (district capitals and towns).
- ^{3/} The urban population's growth in the Central District, where Asunción is located, was 6.23 percent per annum. The departments where a net population loss took place were Paraguairí, Guairá, and Caazapá. Cf. Rivarola et al.

The rate of growth increased to 6.1 percent during the period from 1971 to 1975. The highest annual rates were in 1973 (7.8 percent) and in 1974 (8.3 percent).1/

By sectors, the value of agricultural output grew at a rate of 6.6 percent during the 1971-75 period, as compared with .9 percent in the 1960's. Again, the performance in the last two years was the strongest (8.7 percent and 9.2 percent in 1973 and 1974, respectively). The rate of growth of industrial output was 5.3 percent in the same five-year period.2/

It is estimated that 77,000 individuals were incorporated into the ranks of the employed in 1972-75 (an annual rate of absorption of 3.4 percent), as compared with 173,000 individuals during the 1960's (2.7 percent) when the economy was sluggish. The greatest absorption, however, was in the service sector, as the share of both agriculture and industry in employment declined.3/

Putting these figures in a different perspective, the evolution of employment indicators shows that from 1962 to 1972, the growth of the population employed was higher than the growth of the economically active population (EAP), while the gross participation rate in the labor force declined slightly, from 32.2 to 31.9 percent.4/ This made the "economic burden" of each individual employed equal to 2.1. Due to the faster population growth which started in the mid-1960's, the population officially classified as being of work-age increased at the annual rate of 3.04 percent, while the total population went up by 2.7 percent.

The structure of the labor force by occupations reveals the extent to which Paraguay's economy is geared to the primary sector, as well as the participation by sex.

Four out of five participants in the labor force are males. Significantly, however, females surpass males in absolute numbers in the professions (17,250 vs. 14,330).5/ Fully 62 percent of the male labor

1/ Cf. Plan Nacional de Desarrollo Económico y Social 1977-1981, Asunción, Secretaría Técnica de Planificación, 1976, Vol. I, p. 13.

2/ Ibid.

3/ Ibid., p. 39.

4/ In 1974 the work-age population (age 12 or higher) was estimated to be 1,494,000. Of these, 752,000 were classified as being employed, while the remainder were unemployed, including approximately 483,000 housewives and 202,000 students.

5/ Cf. Rivarola et al., Table VI, p. 150.

force is employed in activities geared to the primary sector, while approximately 6 percent are engaged in white-collar activities. The service sector, on the other hand, absorbs the majority of female participants.

The traditional structure of production is also revealed by the relative weights of traditional and modern modes of organization for production: 57 percent of the labor force is classified as being self-employed or family laborers; workers and employees account for an additional 41 percent; and employers make up the remaining 2 percent.^{1/}

Unemployment figures have been calculated variously at 2.9 percent in the 1972 census, and at 6 percent in a PREALC/ILO survey taken in 1973. Open unemployment is particularly significant in the male age groups from 12 to 20, where it ranges between 10 and 19 percent. Male urban unemployment by age group varies between 5 and 10 percent, while female urban unemployment rates vary between 1 and 2 percent. Open unemployment is significantly lower for males in the rural areas. However, in Paraguay as well as in other LDC's, the problem is one of under-employment. The PREALCO/ILO study estimates that approximately 47 percent of the rural labor force is fully employed, i.e., engaged in productive activities 250 days out of the year; while 53 percent is only seasonally employed.

B. SOCIAL DEVELOPMENT STRATEGY

As detailed in the current Development Plan (1977-1981), Paraguay's long-term development objectives are the achievement of sustained high rates of economic growth to increase national income and labor absorption, and the continued implementation of social development policies which seek to improve the mechanisms for income redistribution.^{2/} The overall national goal, therefore, is one which contemplates both growth and equity.

The redistribution objectives are envisioned primarily in terms of extending the coverage of basic social services to hitherto marginal sectors of the population, improving the planning and operational capabilities of the public sector, and fostering technological change to be able to take advantage of the favorable economic conditions created by the hydroelectric projects.

The quantitative targets adopted in the development strategy propose a gradually increasing rate of economic growth, from 7.6 percent per annum in the immediate past to 7.9 percent in the 1977-79 period, and to 8.4 percent in 1980-81. With population growth projected at 3 percent,

^{1/} Ibid., Table VII, p. 154.

^{2/} Cf. Plan Nacional de Desarrollo Económico y Social 1977-1981, Asunción, Secretaría Técnica de Planificación, 1976, Vol. II.

real economic growth should be 4.6 percent per annum. This translates into \$462 of GDP per capita and \$400 of income per capita by the end of the Plan period, as opposed to current levels of \$370 for per capita GDP and \$320 for per capita income. The output of the primary sector is expected to expand at the rate of 6.1 percent and that of the secondary sector, at 9.8 percent.

1. Development Objectives

In line with the objectives of Paraguay's overall development strategy, the Plan sets forth a series of policy guidelines, along with some global targets, for the social sectors. These include human resources development, nutrition, health, education, housing, and integrated social development. Government strategies in these areas are designed to promote social justice and improve the quality of life of Paraguayans.

The Development Plan stops short of making a direct connection between the educational system and the other social sectors. However, a number of program guidelines contained in the Plan are concerned with the quality of education, the coverage of educational services, the management of the system, and the forward linkages of education with the productive sectors of the economy.

a. Educational Objectives and Policy Areas 1/

The objectives of Paraguayan education are:

- to raise the quality standards of education at all levels and specializations;
- to increase educational opportunities throughout the system;
- to stimulate the training and production of middle-level managers and technicians; and
- to improve inter-institutional coordination and to achieve the effective integration of efforts in the technical, financial, and administrative areas of the system.

These objectives are to be achieved through the implementation of a mix of strategies which themselves contain policy elements that have yet to be spelled out in adequate detail. The following areas have been

1/ Cf. Plan, op.cit., Vol.II, pp. 209-213.

identified as those which will require special attention:

1. Educational Delivery

- extend basic educational opportunities to all potential users, particularly in the rural areas.
- develop plans, programs, and content of non-formal education (NFE) in the rural areas to parallel the formal education efforts.
- develop alternative mixes of educational delivery systems in areas which are particularly affected due to lack of facilities, difficulty of access, and population dispersion.

2. Cost and Resource Deployment

- achieve efficiency in the construction and location of buildings by designing structures which are equipped to handle multi-grade (pluri-grades) teaching.
- adopt "optimum utilization of installed capacity" as a criterion for building schools.
- provide the necessary equipment and furniture in the schools.

3. Teaching Force

- continue to develop and improve current teacher training programs.
- emphasize the development and utilization of techniques for multi-grade teaching.
- develop training programs for bilingual education.
- provide incentives to develop a full-time teaching force.

4. Research and Evaluation

- adopt a research strategy designed to update, on a continual basis, information regarding the changing conditions that determine educational supply and demand.

5. Development of Middle-Level Technicians

- foster the growth and implementation of technical education and of programs of capacitación.

6. Development of High-Level Manpower

- support the development plans of the institutions of higher education.

More and better educational outcomes are sought. While no direct connection is made between these outcomes and the participation of individuals in the labor market, it is implied that a better qualified labor force is more productive and efficient, and that this condition is necessary for attaining higher income levels.

This is standard economic treatment of the subject: the educational system provides the inputs (qualified manpower) needed to carry out productive (i.e., income-generating) activities. The labor market's absorption mechanism, therefore, must be smooth enough and sufficiently developed to create income-generating opportunities for the labor force.

b. Employment and Utilization of Human Resources

The objectives of the employment policy envisioned in the Development Plan include the areas of labor absorption, incentive policies, and institutional development. The following objectives are spelled out in each of these categories: 1/

1. Labor Absorption

- set up the standards, procedures, and goals of a full employment policy.
- raise the levels of employment and lower current levels of under-employment.
- generate jobs which complement slack periods of employment in the rural areas.
- create a larger number of units of production.

2. Incentive Policies

- design and implement policy incentives to increase labor absorption.

1/ Cf. Plan, op. cit., Vol.II, pp. 182-193.

- promote policy actions designed to "fine tune" labor demand and supply.

3. Institutional Development

- promote and strengthen manpower training and apprenticeship plans and institutions.
- design a system for the certification of occupational status.
- identify institutional and market obstacles which impede labor force participation.
- promote inter-institutional planning mechanisms.

The human resources strategy is designed to increase the productivity of export activities while fostering the substitution of imports. The export expansion model establishes specialization on the basis of comparative advantage. This specialization should result in greater efficiency in production, which would accelerate the absorption of available labor. By promoting agro-industrial growth, the strategy should bring about a decrease in seasonal unemployment, a greater absorption of female employment, and an increase in opportunities for labor training. In the area of import substitution, the strategy seeks to develop artisan crafts, small enterprises, and opportunities for labor specialization.

The thrust of this strategy, the Plan notes, is to "shift the distribution of employment away from traditional agriculture to agro-industry and services which have an essentially technological orientation." The emphasis is on technological. The inputs include a mix of institutional mechanisms, such as creation of a national system of incentives which are to be incorporated into the labor code; the incorporation of employment criteria into the design and evaluation of projects; the development of rural resettlement and agrarian reform projects; and the reorientation of educational content and teaching methodologies.

SECTION V

THE INSTITUTIONAL AND SOCIAL CONTEXT OF RURAL DEVELOPMENT: POLICIES AND PARTICIPATION

Participation in development entails a series of processes of learning; or more generally, of becoming informed. The cultural and economic environment conditions the way in which recipients perceive the costs and benefits of development participation. From this perspective, educational opportunities should be viewed in terms of a global conception of knowledge and skill generation. Based on the assumptions that the economic and socio-cultural contexts largely determine learning needs, and that these change over time, the development of human resources should also be viewed as being as much touched by overall development policies as more narrowly defined educational policies.

Paraguay's rural development model rests on a given set of policies and on a number of institutions which represent the embodiment of those policies. As expected, the institutions and their programs transcend what is conventionally considered to be the province of education. Development actions seek to elicit participation in different ways. It is assumed, from the government's point of view, that for this participation to take place, the intended clientele has to be made aware of the types of actions that are being pursued; they, in turn, have to make these actions and objectives their own.

Following these prescriptions, this section is made up of three parts. The first part examines the policies and institutional context of rural development in Paraguay. The second part provides a profile of Paraguay's poor majority. The third part spells out the conclusions which derive from the analysis of education as an input of the government's social and economic policy.

A. THE RURAL DEVELOPMENT MODEL: POLICIES, PROGRAMS, AND INSTITUTIONS

The objectives of agricultural development provide clear guidelines for the design of rural development policies.^{1/} As stated, programs undertaken in this area should seek to (a) bring more land into production and make more intensive and rational utilization of this resource; (b) localize or regionalize agricultural production; and (c) improve the quality and use of farm labor through training, the incorporation of improved production techniques, and a more intensive utilization of human labor. Specialization in agricultural production should seek to increase the production of current export commodities, the introduction of new export commodities, the substitution of imports, and the production of raw materials for industry. An intermediate result of this strategy would be an improvement in the living conditions of the rural population, thereby contributing to the fulfillment of overall social equity.

^{1/} USAID/Paraguay, Small Farmer Sub-sector Assessment, Asuncion, 1976; as extracted from the GOP's 1971-75 Agricultural Development Plan.

The achievement of these objectives requires the formulation of strategies to overcome structural constraints, one of which is the inadequate utilization of land and human resources. To this effect, Paraguay's overall rural development strategy is based on agrarian reform, colonization, and the design and implementation of integrated rural development schemes.

The peculiar geographic and ethnic characteristics of the country, as well as its formidable agricultural potential and incipient industrial development, justify the thrust of the policy. Rather than setting up compartmentalized regions, the regional typology in rural Paraguay contemplates the formation of development axes (Ejes de Desarrollo), which radiate from Asunción to the north, south, east, and west. At the present time, attention is concentrated on the northern axis (Eje norte), which includes an area north of Coronel Oviedo in the Department of San Pedro; and the eastern axis (Eje Este) extending into the Departments of Caaguazú and Alto Paraná, which are connected to Asunción by an all-weather highway completed in 1965.

The Ejes program constitutes the core of Paraguay's rural development model. Integrated development packages are to be developed, which include the following elements: community participation; model patterns of land tenure; production and marketing schemes; health, nutrition, and recreation programs; education and human resource development initiatives; housing schemes, and road, transportation, and communication networks. All these elements are to be backstopped by the necessary institutional support, guidance, and coordination.^{1/}

Other programs are either being coordinated with or carried out as components of the Ejes program. These include the Integrated Agriculture Development Project (PIDAP), and a number of small and medium farmer credit and support programs. Practically all of these projects are financed through international donor agencies and counterpart GOP funds.^{2/}

^{1/} Consejo Nacional de Desarrollo Social, Programa Integrado de Desarrollo Social, Eje Norte de Colonización, Plan de Acciones Ejercicio, 1974-1975, Asunción, June 1975, pp. 31-35.

^{2/} The individual project operations are geared to the attainment of specific rural development policy objectives. In the past, most have financed credit and inputs for medium and commercial farmers. The IBRD Small Farmer Credit and Rural Development Project assists small farmers in the communities of Mallorquín, Repatriación, and General Stroessner by providing farm credit to cover requirements for long-term investment and short-term working capital, technical assistance, and rural infrastructure (largely feeder roads). Additional components include schools, and health and community centers. The USAID project is aimed at small farmers, to "increase their net income, productivity, and nutrition standards." Project elements include

1. Institutions Charged with Agricultural Development Policies

The GOP has an extensive institutional mechanism for agricultural and rural development. Agricultural development policies are essentially managed by the Ministry of Agriculture and Livestock (MAG). Rural development policies, specifically the Ejes program, are administered by a consortium of public institutions linked together in the National Council for Social Progress (CNPS). Participating institutions include the MAG, the MOE, the Ministry of Health and Public Welfare, the Ministry of Justice and Labor, the Rural Welfare Institute (IBR), and the Technical Secretariat of Planning (STP).^{1/}

provision of supervised credit, and working capital to a marketing cooperative to enable it to purchase and market small farmer crops.

PIDAP, for its part, represents the embodiment of the GOP's agricultural policy. The total cost of the project is \$21.7 million, of which \$14.8 million is financed through an IDB loan. The project pursues a number of different objectives which relate to improving the management, institutional coordination, and delivery of agricultural support services directed to small farmers. The overall purpose is to improve the production levels of this group. PIDAP has four components: utilization and spread of improved agricultural technology; marketing, agricultural education, and agricultural credit. Under the agricultural technology component, the project is directed to agriculture and livestock research; agricultural extension; production, processing, and distribution of improved seeds; and production and sale of breeding stock. The marketing component includes the creation of a network of grain storage silos with a total capacity of 14,000 metric tons; it also includes the creation or strengthening of institutional and financial services to promote exports. Agricultural education involves the upgrading of four Centros Regionales de Educación Agrícola, to improve the content of agricultural instruction to raise the qualifications and standards of middle-level agricultural technicians. The agricultural credit component is designed to provide technical assistance and credit packages to small farmers and their cooperatives. Small Farmer Sub-sector Assessment, op. cit., pp. 381-391.

^{1/} A distinction may be made between agricultural development and rural development. The former, one of the major components of rural development, is concerned with agricultural production, productivity, land tenure, marketing arrangements, extension and cooperatives, and other such "hard" program areas. Rural development, on the other hand, is inclusive in that it brings together all possible elements of public policy, including welfare policies (e.g., health and nutrition); labor and employment policies; education programs; public works, including infrastructure and communications development; community development strategies; and the administration of justice. These actions involve, from the government's perspective, a series of social investment outlays which are programmed in accordance with the National Development Plan.

At the top of the hierarchical structure, agencies such as the National Council for Economic Coordination (CNCE) and the STP operate directly under the Presidency. Among other functions, CNCE is charged with evaluating taxation laws, revising the execution of the national budget and the evolution of the public debt, and coordinating financial policy to achieve economic growth targets. STP is jointly responsible with GOP ministries for the formulation of the country's economic and social development plan by sectors and regions. Its National Projects Office (ONP) is responsible for preparing projects and carrying out feasibility studies of proposed government actions.

CNCE and STP are the overall orchestrators and monitors of national policy, while the Ministry of Finance is charged with directing public expenditures. These institutions provide the general guidelines and resources for MAG operations. MAG's structure includes the Secretariat for Technical Coordination, which is responsible for PIDAP; a policy planning and programming unit (Gabinete Tecnico); and a number of operational divisions, which include Agricultural Research and Extension, Agricultural Standards and Controls, and Marketing and Agricultural Economics. It is through these divisions that MAG actions reach down to the user level.^{1/}

Agricultural development programs are financed by such institutions as the Fondo Ganadero (Livestock Fund) and the Banco Nacional de Fomento (National Development Bank). Credit and technical assistance are also provided through a number of commodity programs. The Fondo Ganadero is an agency of the Central Bank of Paraguay set up to administer funds made available under an IBRD loan to finance the development of large-scale commercial livestock projects. The Banco Nacional de Fomento is the largest banking institution in Paraguay, controlling about half of the country's loan balances and almost one-sixth of the deposits held by the banking system. BNF's scale of operations make it by far the most important source of medium and long-term development loans. The Bank's operations throughout the country are carried out through a network of 37 agencies.

Of special interest to this assessment are those BNF operations which provide financial and technical assistance to small and medium farmers. Such operations include credit for agricultural promotion, for specific projects, and for cooperatives. Promotion credit programs are geared to commodities such as cotton, tobacco, soybeans, and vegetables. The credit made available to specific projects finances investments in fixed and semi-fixed assets related to a number of priority activities, including bee and dairy cattle, poultry, and seri-culture projects. The credit operations for cooperatives are granted either for specific projects undertaken by cooperatives, or to upgrade the economic position and management of cooperatives. BNF operations emphasize the use of supervised credit and the provision of technical assistance.

^{1/} The descriptions of institutions that follow are adapted from the Small Farmer Sub-sector Assessment, pp. 338-393.

On the other hand, the National Commodity Programs are directed to specific agricultural commodities which have high commercial value and which therefore constitute the bulk of Paraguay's export crops. Currently, programs have been established for wheat (set up in 1967), tobacco (1967), cotton (1972), and soybeans (1973). Program design and participation are carefully planned through definition of financial requirements and available resources; identification of marketing constraints and the measures needed to overcome them; and specification of research components. The commodity programs produce detailed guidelines for participating agencies in the public and private sectors. Such guidelines identify the types and amounts of inputs required, such as research, extension, credit, marketing, and proposed budgets.

2. Small-Farm Credit and Cooperative Schemes

Three institutions are particularly active in the provision of small farm credit and the fostering of the cooperative movement in Paraguay. These include the Credito Agrícola de Habilitación (CAH), CREDICOOP, and the Union Paraguaya de Cooperativas (UNIPACO).

The Credito Agrícola de Habilitación (CAH) is a hybrid institution, since it incorporates in its structure the provision of financial services and the mobilization of community resources through the formation of cooperative groups. CAH provides credit and technical assistance in production and marketing through producer committees, or Asociaciones de Usuarios de Crédito Agrícola (AUCA's). These are formed by groups of at least 25 individuals, who are required to have titles or leasing rights to at least 6 hectares of land. Credit is provided for production of cash crops and purchase of farm implements and work animals. For the most part, credit takes the form of inputs rather than of outright cash outlays. Interest rates are subsidized; the rate is 9 percent plus a 2 percent service charge on outstanding balances, versus a 14 percent rate from commercial sources. CAH has its own corps of field technicians who advise the AUCA's by providing technical assistance, supervising group marketing of crops, and helping in the preparation of loan requests.

CREDICOOP, chartered in 1974, is a central credit union; it is charged in its bylaws with providing leadership and financial and technical assistance to the Paraguayan credit union movement. It promotes and organizes new credit unions, trains managerial and administrative personnel, and gives assistance in accounting and auditing cooperative accounts.

CREDICOOP administers a credit program which is intended to channel funds to small farmers who otherwise could not qualify for loans from either public or private agricultural lending sources. In 1976, CREDICOOP assisted 25 rural cooperatives with approximately 7,000 members. This organization also works in conjunction with MAG and the agricultural extension service (SEAG) to provide technical assistance and extension services. Technical assistance is coordinated by the extension supervisor from CREDICOOP, who designs the overall package of instruction and implementation, and advises the SEAG extension agent accordingly. The

SEAG agent in turn trains field assistants and supervises field operations. Field assistants from the credit union are in charge of day-to-day operations and, as such, they are the primary contact between the farmer and the credit union.

UNIPACO was established in 1970 as a result of the amalgamation of 12 large producer cooperatives. Last year, 21 cooperatives with a total of 2,700 members were affiliated with the union. UNIPACO's functions complement, but also overlap, those of CREDICOOP, CAH, and the small-farmer operations of BNF. In the past, UNIPACO has provided assistance in educating, organizing, and supplying technical and financial support to new cooperatives and pre-cooperatives; it has also trained the managerial personnel of a number of member cooperatives. Other support services which UNIPACO has provided include rental of grain drying, cleaning, and storage facilities; marketing services for cotton, soybeans, castor beans, tobacco, and rice; distribution of improved corn and sorghum seeds to member cooperatives; and sale of limited amounts of farm supplies and agricultural implements.

3. Operations in the Eje Areas

The institutions described above do not provide extensive coverage to the majority of the rural population, particularly those sectors which are most economically deprived. This is due to the fact that the resources of the institutions, particularly when each is acting individually, are very limited; they cannot cope with the size of the problems. Also, selectivity criteria and requirements are such that the poorer groups are excluded; and the institutions themselves lack the management and technical capacities to carry out this type of action.^{1/}

The design of the Eje program entails a conscious effort to overcome the limitations that arise from uncoordinated action; this is to be accomplished through the organization of the program, and the range of activities and concomitant coordination of participating institutions.^{2/}

Unlike conventional organizational designs, in which all decisions originate at the top of the pyramid and are transmitted to the base in a one-way flow of communication, the Ejes program relies on a multi-tiered organizational structure. At the top are the different institutions which participate in the National Council for Social Progress (CNPS).

^{1/} A case in point regarding the effects of selection criteria is provided by the AUCA's, organized under CAH. As noted, members are required to have title or lease right to at least six hectares of land. This disqualifies about half of the small farmer population from participation in the program.

^{2/} The program description that follows is taken from Programa Integrado de Desarrollo Social, op. cit.

In the Ejes, regional coordination is provided by the Operational Committee for Social Progress, which is made up of representatives from the various institutions. The Committee is charged with the coordination of program design and implementation. Regional programs are spelled out at this level, and their progress is checked at monthly meetings. Special projects are submitted to the National Projects Office (ONP) for costing and feasibility testing, as are the yearly plans of operations.

The regional committee monitors the progress of programs at the local level, through field agents of the institutions involved who work with participant groups. Community involvement is encouraged to foster motivation, complementation of community resources, continuity of the action undertaken, community development and capacitación, and the strengthening of communication flows.

Typically, each institution acts in its own area of influence. In the Eje Norte, the clientele is made up of nearly 10,000 farm families, occupying 7,500 parcels of land of about 20 hectares each.^{1/} They are, in effect, subsistence farm families. One of the major goals of the project is to encourage them to become involved in commercial agriculture, and limit the subsistence component to raising vegetables, basic crops, and domestic animals.

A summary description of the different subprograms carried out in 1975 and 1976 follows:

- a. Community Participation. Carried out by the National Office for Social Progress (ONPS), the purpose of this component is to develop, orient, and integrate community groups. ONPS works through promotores who are in charge of organizing the groups and maintaining liaison with them.
- b. Land Tenure. This program is managed by IBR. The activities carried out are essentially of a technical nature and have to do with the demarcation, allotment, and titling of plots to carry out the colonization portion of the overall scheme.
- c. Production and Marketing. This effort is conducted jointly by MAG (through its extension services), CAH, BNF, and IBR. The clientele includes small farmers who do not qualify for any of the other credit and technical assistance schemes. Cotton, soybeans, and tobacco are among the crops which are emphasized.
- d. Public Health. The Ministry of Health and Public Welfare (through its Rural Health Department), the National Sanitation Service, and the Peace Corps are charged with

^{1/} The area of colonization has 101,163 hectares, not all of which had been demarcated by the end of 1975.

carrying out the activities under this subprogram. In the rural areas, infant mortality is very high (152.6 per thousand); and morbidity, which is also very high, is largely attributable to poor sanitary conditions. In response to these needs, the main activities that are carried out include hospitalization and out-patient care, dental services, environmental sanitation, vaccination, and construction and maintenance of health posts and latrines.

- e. Education. This subprogram is the responsibility of the MOE. Activities undertaken at the primary level are geared to the implementation of the basic elements of the educational reform: curriculum change, teacher re-training and training in accordance with the new plan, school construction, and provision of materials. The purposes of these activities are to improve the quality of educational services, to extend coverage, and to improve retention. In addition, the MOE's Department of Adult Education is involved with literacy and functional education programs.
- f. Rural Professional Training. This subprogram is the responsibility of the Ministry of Justice and Labor (MJL) through its Human Resources Development Division and the Servicio Nacional de Promocion Profesional (SNPP). These non-formal education activities are directed to youth, through apprenticeships and pre-employment training courses, and to adults, through topic-specific courses. To carry out these activities, the 1975-76 Plan contemplated the construction and equipment of two rural training centers in the towns of Choré and San Estanislao, to be managed by the Human Resources Division and SNPP, respectively. Also, it provided for the recruitment of ten instructors for the centers.

Other subprogram activities include food aid, home education, and the development of physical and communications infrastructure. The provision of food is administered by the IBR, which is the executing agency for a GOP/World Food Program convenio, through which a million dollars worth of food will be distributed in the area of the project, over a four-year period. The home education component is another NFE activity to encourage the raising of domestic animals, the planting of vegetable gardens, and the adoption of home management practices.

The housing and infrastructure development components were not implemented until last year. The Ministry of Public Works is responsible for the construction of main roads. Feeder roads (calles) are built through local initiatives, and serve the specific purpose of facilitating communication in the colonies and providing access to the main roads. The plan of operations also calls for the development of basic housing models; however, it is not known to what extent this initiative has gone beyond the planning stage.

4. Perceived Constraints for Institutional Actions and Participation

In public affairs, there is a universal rule that a gap always exists between what is planned and proposed, and what is carried out. To compound this situation, one of the major characteristics of the development process is that currently available resources are not adequate to meet immediate needs. Deviations from planned models are therefore to be expected; and it is recognized that the scale of the efforts that can be undertaken are not commensurate with the size of the particular problems. There is also a definite time dimension to all development initiatives; significant social and economic changes do not take place in a short time. Even when they do occur, they often are not easily perceived, because by definition they become part of the new "reality."

This preamble provides an appropriate context for explaining the existing constraints that impede the achievement of Paraguay's rural development strategy. The attainment of the growth objective implies that the incomes of the population which makes a living in the rural areas have to be raised. The achievement of social equity, in addition, demands that the poorer members of the population have to be favored by the strategy. Theoretically, both objectives can be achieved by increasing agricultural production, or improving agricultural productivity, or achieving higher returns in agriculture; or, more likely, by a combination of all three.

In terms of production and productivity, the following items should be noted:

- the annual rate of growth of agricultural output in the 1971-75 period was 6.6 percent. This is considered a good performance. In particular, it should be noted that the value and output of export crops grew at the rate of 16.6 per cent per year, while domestic consumption crops grew at the rate of 1.4 percent per year.1/
- the estimated area of arable land in Paraguay is about 8.8 million hectares. At the present time, some 953,000 hectares are under cultivation.2/
- Paraguayan yields are significantly below those obtained in the United States as far back as 1960. On the other hand, and this is a more valid standard, they compare favorably with those obtained in the neighboring countries of Brazil, Argentina, and Bolivia.3/

1/ Small Farmer Sub-sector Assessment, op. cit., p. 456.

2/ Ibid.

3/ Ibid.

- the average productivity of a Paraguayan farm worker is estimated at 60 percent of the average productivity of farm workers in Latin America.^{1/}

Viewing agriculture as an economic activity, it is possible to separate the different elements which determine its ultimate impact on the country's economic growth. Efficiency in production necessitates optimal absorption and utilization of labor inputs; land of good quality; and effective utilization of capital in the form of appropriate technologies and inputs. The sustained rentability of agriculture is dependent on stable and remunerative prices. Moving the produce from the farm to the marketing center necessitates adequate communication and transportation networks. An efficient marketing system is also necessary, in order to transfer the produce and commodities from the production to the consumption centers. The expansion of agricultural output has to be matched by an expansion of demand; particularly, in the case of Paraguay, by an expansion in the demand for agricultural exports. Finally, to the extent that the additional value-added justifies it, agricultural output has to be processed and industrialized to derive the benefits accruing from the sale of these products.

Paraguay faces important constraints in almost all of these areas. Some can be solved or alleviated through policy initiatives, but others are exogenously determined or are structural in nature, and therefore can be dealt with only indirectly.

Among the latter, there are such factors as the geographical location of the country and its lack of direct access to the sea. This essentially causes delays, creates processing bottlenecks, and increases the cost of Paraguayan exports, thereby decreasing their competitiveness.^{2/} Despite significant progress in the last few years, the country still lacks an adequate transportation system.^{3/} It consists largely of dirt roads, which in some cases are impassable for up to one-third of the year due to rains. This exacerbates the difficulty of moving the produce and commodities from the production to the consumption centers. Inadequate transportation causes the spoilage of a significant portion of the country's agricultural output. The marketing mechanism is not fluid enough to absorb, transport, store, process, and market the products.

^{1/} Ibid.

^{2/} The Small Farmer Sub-sector Assessment (p. 458) notes that a 1973 study indicated that freight costs, including handling charges in ports, ranged from \$30 to \$80 per metric ton from the major Paraguayan ports to FOB Buenos Aires. The additional cost to a European port would be between \$25 and \$50 per metric ton.

^{3/} The road system was increased from 1,345 miles in 1960 to 4,144 in 1972, but only 733 miles are paved, all-weather roads. Small Farmer Sub-sector Assessment, op. cit., p. 461.

Institutions lack the financial resources to achieve their proposed objectives. Lack of resources also results in the inability to attain sufficient managerial and operational expertise to carry out assigned functions. The lack of a good information base impedes efficient decision-making, particularly when the decisions are related to the minute details of implementation.

Inadequate transfer of technology also poses a constraint at the level of the system and at that of the farm. At the system level, the Sub-sector Assessment reports that extension services reach only about 6 percent of the potential population.^{1/}

For the farmer, the problem of technology has to do with finding the means to expand output on the land to which he has access; or, alternatively, to increase the utilization of land, including adding more for cultivation, without incurring the need to hire outside labor other than that provided by members of his family. The Small Farmer Sub-sector Assessment reports that the farm sector is currently faced with an important structural constraint which disallows the possibility of achieving efficient production levels: some farms lack enough land, others lack enough labor. It is estimated that farms of less than 5 hectares cannot achieve efficient production levels, since most commercial crops need more extensive land. On the other hand, when the size of the farm exceeds 5 hectares, the labor provided by members of the family is not sufficient; recourse has to be taken to outside labor. However, additional labor is scarce in certain areas; and it is not possible to increase production due to lack of technology, or lack of means to purchase and adopt the appropriate technology.

While the rationality of farmers as decision-makers is not in doubt, the constraints under which they operate constitute some of the most formidable challenges for any rural development strategy.^{2/} As stated earlier, access to land is not a major constraint, in theory. However, in cases such as those described above, the distribution of land is in fact a constraint. Even assuming the availability of land in convenient proportions and optimal allocation, farmers face problems of labor utilization, and they have limited access to capital. While credit is available through institutions such as BNF, CAH, and CREDICOOP, and a highly developed informal credit system also exists, in aggregate terms, credit availability is limited and average individual levels of credit are low. Farm capitalization is also low. Calculations made for the Small Farmer Sub-sector Assessment indicate that on the small farms, the ratio of on-farm consumption to gross farm income ranges from .487 to .312. Net cash income, which includes sales minus annual expenses, is low in relation to net income, which includes on-farm consumption; it ranges from .44 in

^{1/} See Annex G.

^{2/} The analysis of use of technology from the farmer's perspective is taken up in the next part of this section.

the smaller farms (less than 3 hectares) to .63 in the larger farms (from 10 to 19 hectares).1/

These constraints are faced throughout the system, including the Eje areas of colonization. The analysis confirms, however, the critical importance and potential of agriculture in the Paraguayan economy. The policy orientation of the Ejes program, and its multi-institutional approach, are judged here to be appropriate. It is clear that one of the important challenges of rural development in Paraguay is the development of human resources through the participation of the population in the programs undertaken. Education in this sense can play an important role in the dissemination of information concerning appropriate technologies for land-short and/or labor-scarce areas. The learning of specific applications of these technologies is also an educational activity, the delivery of which can be specified and designed. While resources are currently inadequate to undertake these efforts on a sufficiently large scale, the need is critical enough to merit systematic exploration of these and other "learning activities" which are implied in the programs.

B. THE POOR MAJORITY: DEFINITION AND SOCIO-ECONOMIC PROFILE

The analysis carried out in Section IV indicated Paraguay's relative position in terms of development indicators. Compared to the rest of Latin America, Paraguay's per capita income is low. However, important social welfare indicators, such as life expectancy at birth and daily caloric and protein intake, place Paraguay in an exceptional position when contrasted with other Latin American countries.

Also, while the contrasts between opulence and misery are not as visible as elsewhere, inequality persists. Existing records on income distribution show that 5 percent of households receive 30 percent of national income, while 20 percent receive 4 percent of income. Other standard of living indicators collected by the Ministry of Health in the Eje Norte project are equally revealing. Contrasting mortality in the Eje area with the mortality that prevails in the country at large, the following results are given:2/

	<u>Country</u>	<u>Project Area</u>
Infant mortality (per 1,000 live births)	89.9	152.6
Neo-natal mortality	39.9	60.8
Mortality (1-4 years)	5.7	16.4
Maternal mortality	4.2	12.0

1/ Small Farmer Sub-sector Assessment, op. cit., Table F-I, p. 454.

2/ CNPS, Programa Integrado de Desarrollo Rural, op. cit., p. 69.

Almost four out of ten deaths (37.8 percent) occur in the 0-4 age group. Mortality is caused primarily by gastro-intestinal disorders (11.8 percent) and respiratory diseases (8.8 percent), which are related to poor sanitary conditions or improper sanitary practices, such as drinking contaminated water.^{1/} These conditions also determine to a large extent (72.9 percent) the incidence of morbidity. Malnutrition is also present in the pre-school age group; 24.6 percent of children suffer from second-degree malnutrition, and 4.1 percent suffer from third-degree malnutrition.^{2/} Housing conditions are inadequate, since nearly all structures are one-room shacks occupied by an average of 4 to 5 persons. The disposition of sewage and refuse is satisfactory in only 12 percent of cases observed, while open latrines predominate in 80 percent of all cases.^{3/}

Concerning income levels, the definition of cut-off points to decide where poverty ends or begins is at best an adventurous exercise. A 1973 study indicates that the poor majority of Paraguay is defined as a group having an average per capita income of \$173.20 (in 1972 dollars), which includes 72 percent of the population. The study applies this figure to the total population; the proportion of the rural population, excluding Asunción and the intermediate cities, that may be classified as poor is at least 82 percent.^{4/} The groups defined as poor include the under-employed, unskilled workers, low-level civil servants, and the majority of farmers.^{5/}

Using 80 percent as a compromise figure on the proportion of the rural population that may be considered poor, and excluding the population of greater Asunción and the Chaco, USAID/Paraguay estimates the number of rural poor to be 1,376,292, which represents 58.5 percent of the 1972 population. Of this total, the two target groups for AID development assistance are small farmers having 20 hectares of land or less, and artisans and employees of small industries with a maximum of 20 employees. The Mission estimates that approximately 1,000,000 people were included in these groups in 1975. The common characteristic of these groups is a low average per capita income, which the Mission estimates at less than \$200 a year.

^{1/} The CNPS report indicates that the table water in the project area is located between 40 and 70 meters below the surface (except in Choré where the figure is 13 meters), which makes the excavation of wells very difficult.

^{2/} Ibid.

^{3/} Ibid.

^{4/} Agustín O. Flecha, Distribución de Ingreso y Subdesarrollo, Instituto de Desarrollo Integral y Armonico, Asunción, 1975, p. 63.

^{5/} The typology of Paraguay's labor market is developed in Section XIV.

Thus, the rural clientele of education consists of the school-age population (6 to 14 years of age), and youths and adults who could tangibly benefit from access to educational opportunities. STP population projections for 1975 indicate that the rural group aged 6 to 14 included 449,500 individuals, while an additional 165,900 were in the 15 to 19 group. MOE records show that 319,762 individuals were enrolled at the primary level in the same year.^{1/} Of these, the MOE classified 261,034 as being enrolled in rural schools, with 87 percent enrolled in grades one to four. The clientele for formal education, therefore, represents from one-fourth to one-third of the target group identified by the Mission. When those who are currently out of school are included, the size of the possible clientele of formal and non-formal education rises to 45 percent if only the 6 to 14 age group is considered.

Further refinement of these figures indicates that the 30 percent of the school-age group whose exposure to schooling is minimal or non-existent could receive some kind of compensatory non-formal education. Since those who are in school remain for an average of 3.21 years, they could also theoretically benefit from access to educational services which would extend their educational experience.

Also, those who are entering their prime productive years (15 to 19, and 20 to 35) constitute an additional one-seventh and one-fifth of the Mission's defined target group. Their educational needs cannot be met solely through organized education, whether formal or non-formal. This is the justification for strengthening informal education through concerted development action which seeks to elicit active participation from community groups, to strengthen the flow of learning stimuli and thereby promote change.

1. National Stratification and Spatial Distribution

Paraguay has an essentially rural economy and society. Two-thirds of the people live in the rural areas, and half of the country's labor force is occupied in agriculture. Despite the significant economic evolution that has taken place in recent years, there has been no concomitant urban explosion. Major population shifts, in fact, have taken place within the rural areas. This situation is not the result of pure coincidence. One of the tenets of GOP national policy is to encourage both the development of agriculture and a "spread-out" spatial distribution of the population. As the GOP views it, this policy makes eminent sense from an economic as well as a strategic stance.

Within this context, the social, economic, political, and hierarchical lines are well demarcated. Asunción is at the top of the hierarchy as the country's only metropolitan area and point of contact with the

^{1/} Excludes enrollment in Asunción, the Central District, and the Chaco.

international economy and external influences. There follow the intermediate cities, the rural towns, and the rural countryside (campo) in a continuum that steadily acquires more clearly marked rural elements: smaller population concentrations, and increasing preponderance of agriculture in the local economy.

While the socio-economic pyramid resulting from this hierarchical arrangement based on demography and economics is not unique to Paraguay, neither is it typical of the rest of Latin America.^{1/} At the base of the pyramid are the small farmers, or campesinos. There are no sharp social distinctions within this group. They constitute an essentially homogenous social, economic, and ethnic mass. They are primary producers organized in family enterprises and who are largely able to meet their subsistence needs from their own labor. Farmers, however, live in a cash economy. The surpluses they accumulate have to be traded to obtain the necessary cash to purchase needed goods and services.

The rural towns and intermediate cities, which range from Encarnación with 20,000 inhabitants to villages of less than 500 habitants, are the marketplaces where the economic transactions of farmers take place. The towns and cities have the required specialization and resources to absorb and process these transactions and to accumulate their own surplus. The importance assumed by commerce gives rise to a more delineated, less homogenous, social structure where economic success is rewarded with social prestige. The intermediate cities also provide the links between the national government and the population, since most government agencies have a seat in these centers, and people visit them to demand the services provided.

Asunción, finally, is the seat of power; and organizationally, it is the most complex center. National directives and policy flow from the capital, where all government agencies are located. The power of the purse rests in Asunción and it receives the lion's share of the resources. However, there is strong commercial, economic, and political interaction with the rest of the country. Prominent government figures, from the President on down, are not native-born Asuncenños. This geographical heterogeneity in the highest government spheres is reflected in the very strong national outlook of policy which reflects priorities in areas geographically removed from Asunción (e.g., the development of the Alto Paraná and Itapuá regions).

^{1/} The descriptions that follow are the result of consultations, travel notes, and impressions gleaned from informal conversations. Written sources include Ned Ewart's Descriptive Ethnography of Paraguay, written for USAID/Paraguay (March 1977) from which this section borrows heavily. The Small Farmer Sub-sector Assessment, and AID's Paraguay Area Handbook, have also provided background material for this analysis.

2. Migration, Land Tenure, and Colonization

The current patterns of land tenure and the resulting colonization schemes follow from directives first laid out in the Agrarian Reform Law of 1962. Partly due to the impact of policy, but also as a result of natural developments, there have been substantial population shifts within the rural areas of Paraguay. Table V-1 indicates that the major population movements have taken place from the Departments of Cordillera, Guairá and Paraguairí, to Alto Paraná, Amambay, Caaguazú and San Pedro. To a lesser extent, the Departments of Caazapá, Misiones, Ñeembucu, and Concepción have also generated migration flows, while Itapúa seems to have experienced a moderate in-flow. The start of the hydroelectric project at Itaipú in Alto Paraná, and the opening up of the agricultural frontier through the Ejes projects, have largely determined the size and direction of the flows.^{1/}

The IBR has been actively involved in providing titles to land. During the period from 1962 to 1972, some 40,000 provisional and clear titles covering over 2,000,000 hectares of land were issued. This contributed significantly to a reduction in the proportion of squatters, from 45 percent in 1961 to 29 percent in 1971. IBR has colonized three times more land in its decade of existence than had been settled during the previous half-century. Moreover, IBR land sales have increased markedly in the last few years. In 1973, the Institute sold 516,000 hectares, as compared to 245,714 hectares in 1972. The increase is due in part to the fact that more new settlers, especially those granted larger lots, pay for their land in full at the time of allotment. Rising agricultural prices have also put the small farm settler in a better position to pay installments on the purchase of his land.

However, this record has been marred by a less outstanding performance in making the transition from provisional to clear titles. As a result, anywhere from 10 to 30 percent of rural households do not have legally recognized land rights. Ewart notes that this situation is highly variable; in the community of Pastoreo, located in the Eje Este, IBR has been able to provide clear title to 50 percent of colonists. In Itacurubí del Rosario, on the other hand, only 5 percent of IBR colonists have been able to obtain clear titles.^{2/}

^{1/} Also, as noted in Section IV, significant migration flows to Argentina have taken place. Census records for 1972 in that country listed 358,762 Paraguayans with legal resident status. The GOP insists these out-migration flows have in fact reversed in more recent years, but no detailed information in that regard could be obtained for this assessment.

^{2/} Ned Ewart, Descriptive Ethnography of Paraguay, op. cit. The report, it should be noted, is based on case studies of the communities of Caraguatay, Itacurubí del Rosario, and San Manuel Frutos. As stated by Ewart, Caraguatay is considered to be representative of a long

TABLE V-1
POPULATION GROWTH AND DISTRIBUTION BY REGIONS
IN PARAGUAY, 1962 AND 1972

Region	Department	1962	1972	% of Relative Increase
<u>Chaco</u>				
	Presidente Hayes	29,870	38,515	29
	Boquerón	40,405	26,142	-35
	Olimpo	<u>3,854</u>	<u>5,368</u>	39
		<u>74,129</u>	<u>70,025</u>	
<u>Eastern Region</u>				
	Central	125,343	139,173	11
	Cordillera	188,313	194,365	3
	Guarí	114,949	124,843	9
	Paraguari	<u>203,012</u>	<u>211,704</u>	4
		<u>631,617</u>	<u>670,085</u>	
<u>Other Eastern Departments below the growth rate</u>				
	Concepción	85,690	108,198	26
	Caazapá	92,401	103,002	11
	Misiones	59,441	69,315	17
	Ñembucú	<u>57,878</u>	<u>72,978</u>	26
		<u>295,410</u>	<u>353,493</u>	
<u>Eastern Departments above the national growth rate</u>				
	Caaguazú	125,138	213,356	70
	San Pedro	91,804	138,091	50
	Amambay	34,505	65,527	90
	Alto Paraná	24,067	78,037	224
	Itapúa	<u>149,821</u>	<u>201,776</u>	35
		<u>425,335</u>	<u>696,787</u>	

Source: 1962 and 1972 Census.

The limitations of IBR in carrying out systematic institutional action on the required scale are understandable. The semblance of formality created by institutional intervention is often lost; and spontaneous solutions arise. Therefore, in addition to the planned colonization schemes, titles to government lands which have been traditionally occupied are shifted to occupants under the colonization scheme. There are also private colonies where the original owners have parceled their original holdings and sold portions to new settlers. Finally, there is land which has been invaded by squatters, often creating problems and conflicts; particularly when the lots have already been parceled out.

For these reasons, such functions as farm management and use of technology depend on variables which include the degree of autonomy of the individual producer, as contrasted with access to government services; his relative economic position, including access to and quality of land, crop specialization, and access to credit; the environment in which he works, including transportation and communication facilities; and the socio-cultural milieu of which he is a part. Small farmers have often been maligned in the past for their alleged sense of fatalism and lack of entrepreneurial initiative. Yet it should be understood that given the small margin for error, which can result in something as critical as not being able to feed one's family, the lack of information on market conditions, and the precarious conditions of production, it is entirely reasonable to expect that farmers should be risk-aversers rather than profit-maximizers. This attitude entails the consistent utilization of traditional methods which, according to the farmer's perceptions, allow him to survive and accumulate a surplus; or alternatively, allow him to spend some time off the farm if there are available employment, or cash-generating, opportunities.

Since the economic position, ability, and external circumstances vary for different groups of farmers, it is logical to expect the co-existence of different techniques of agricultural production. Ewart points out that a useful categorization of agricultural practices in Paraguay can be based on the tools used. Such production inputs include the digging stick and/or hoe, the animal drawn plow, and motor mechanization.

Agricultural production can be efficiently undertaken by using a digging stick and hoe technology when there is sufficient land to allow for long periods of fallow. The digging stick is much less destructive to the soil than is the animal drawn plow. However, the plow is a more efficient mode of production when extensive agriculture is practiced.

established Central Zone community located in the area characterized by minifundia in the agricultural sector. Itacurubi del Rosario is representative of a long established community undergoing rapid economic change and experiencing sustained growth in agricultural production. Juan Manuel Frutos is located in one of the colonization projects.

When the size of plots and the kinds of crops allow it, farmers make the necessary investments to purchase the animals. This is a non-marginal investment since it requires not only the initial outlays, but also the subsequent costs of maintaining the animals. It also entails a radical change in the mode of production.

Similar considerations arise when decisions have to be made about the use of machinery. Certain conditions have to be met for machinery to realize its potential as an economically efficient input. Such conditions include the size of the plot, the type of crop, and the configuration of the terrain; the initial cost and the costs of maintenance and fuel also condition a decision to utilize machinery. These considerations help to explain why the utilization of machinery is not widespread. Small farmers usually lack the required capital to make the outlays; since machinery has to be maintained, this necessitates the existence of repair facilities, mechanics, and the availability of spare parts. The high cost of fuel is also a factor. Unless the higher costs of machinery utilization can be recouped through greater productive efficiency, or if the costs can be passed on to the buyers of the commodities, it does not pay to incur the additional expense.

Farmers employ crop rotation methods in six to eight-year cycles, depending on soil, crop mix; total land area, frequency of land use, and the economic position of the farmer. As described by Ewart, in the first year after land clearing, a parcel is usually planted with tobacco, or in corn and manioc. The second year is followed by corn with manioc or manioc alone, sometimes also including tobacco. The third year, a permanent crop such as acid orange or banana may be planted, or manioc. The fourth year, cotton is usually planted. In the fifth year, cotton or, in poorer soils, some green crop or fertilizer crop may be planted. During the sixth year, crops which improve or at least take very little from the soil are favored, or else the cycle ends. When this occurs, the cycle may be repeated, or the land may be allowed to lie fallow.

The rotation of crops represents another rational choice of techniques, given available resources. When the cultivation of land is carried out on an intensive basis and with little rotation, the exhaustion of the soil can become an important problem. Taking care of this problem requires fertilization, which in turn creates demand for weed and insect control. The cost of these inputs and the need to hire additional labor effectively curtail the cost-efficiency of utilizing these methods. Rotation not only defends the productivity of the soil, it also guards farmers against the vagaries of the market because production is constantly being diversified.

3. Sources of Income and Access to Credit

Farmers receive the bulk of their income from cash crops. Additional income is derived from cottage activities, such as animal husbandry, sale of charcoal and firewood, small commerce, and off-farm employment. Typically, on-farm employment is intensive during seeding, cultivation,

and collection periods: peak labor utilization is in September, while lowest employment occurs in July. The ILO study reports that for youths, the participation in the rural labor force ranges from 3 to 18 percent; for females, it ranges from 18 to 45 percent.^{1/} During the slack periods of agriculture-related activities, female and youths engage in off-farm employment.

Farmers are cautious money managers. Since they are so heavily dependent on local creditors to meet their financial needs, they usually give first priority to maintaining their credit rating. This is true whether the credit is obtained from commercial or public sector institutional sources: the farmers are required to pay their dues and installments on time. The family budget also includes appropriations for clothing and family needs, the education of the children, the purchase of farm implements, and the pursuit of leisure and social activities. Farmers do not accumulate savings in the form of cash, due to a rational fear of inflation and the relative value of paper money. They prefer to accumulate or invest in real assets, or to engage in the consumption of tangible goods.

The access of farmers to credit, and the role of credit in the local economy, merit special attention. Earlier, the programs of such institutions as CREDICOOP, CAH, and BNF were described. Their scope is usually limited to the more organized sectors in the rural areas. Therefore, the primary source of credit for most small farmers is provided by businessmen.

The credit network in Paraguay is extensive, reaching from Asunción all the way to the small rural towns. As analyzed by Ewart, it constitutes a fascinating system of symbiotic relationships which foster efficiency and promote higher levels of production. At the base, farmer credit needs arise from (a) temporary cash shortages; (b) required financing of crop production; (c) emergency situations, such as illness or special situations in the family; and (d) required financing of farm improvements and purchase of equipment and hardware. The businessman is interested in meeting these credit needs, particularly (b) and (d), which finance the farmer's purchase of inputs, which the businessman sells. The credit arrangements are informal, since they do not entail the signing of any legal documents; and the provision of credit is ultimately based on the farmer's repayment record and past credit performance.

Because there is competition among businessmen, the chances for abuse and usury are reduced. Businessmen often maintain their profit level through merchandise mark-ups which range from 20 to 30 percent.

^{1/} The report findings are analyzed in Section XIV. Adult male participation is usually steady at 80 percent.

Customer-creditor relationships undergo a slow and elaborate period of gestation, during which farmers can get to know their potential creditors and make informed decisions. Creditors in turn are cautious lenders and risk increasing amounts of funds only when past performance and current prospects merit it. For businessmen, these operations represent a sizeable portion of their total commercial operations. Ewart notes that capital invested in primary production credit by the commercial sector frequently represents 60 percent of the capital reserves of local businessmen.

The situation, therefore, can lead to mutually satisfying relationships. Creditors want to circulate their money and create a robust cash flow. Farmers want to obtain fast credit without too many questions asked and without an excessive amount of paperwork. To the extent that mutual trust prevails, and performance is consistent with expectations, the informal arrangements work.

The network that originates in the villages and the campo extends upwards to the medium-sized cities, and to Asunción itself. The role of credit in fueling economic activities appears critical even at these levels. Local businessmen obtain their credit from Asunción banks, wholesale purveyors, and commodity buyers. Credit takes the form of financial outlays or provision of inventories to be paid over a period of time. With capital and inventories, businessmen provide needed goods and services, sometimes to other creditors (sub-acopiadores), and sometimes to the farmers themselves. Payment is often required in the form of produce rather than in cash. Again, because a competitive market prevails, prices are not unilaterally fixed; in general, they respond to supply-demand conditions.

In this scheme, the presence of institutional financial intermediaries can bring additional advantages, but also provides some drawbacks. In theory, the services and financing provided by the institutions can complement those available through the informal mechanism. Also, since institutions provide financing at subsidized rates, this can lower the costs to the farmers. However, participation in the formal institutional schemes often results in a retraction of the informal credit arrangements. Institutional rigidities and limited expertise conspire against efficient and timely response to the credit needs of the farmers. And the quality of technical assistance, as when extension is provided, is sometimes not entirely satisfactory.

4. Social Relations: The Family, the Community and Patterns of Authority

The basic social unit in the rural areas is the nuclear family. There is no strong extended family tradition in Paraguay, and even the fabric of the nuclear family is not as strong as in other Latin cultures. The nominal head of the household is the male who is the economic provider. Yet his role is not clearly defined, as he is often absent. The relationship between the mother and the children, on the other hand, is clearly demarcated. She provides the spiritual support and care and is

the biggest influence on the children's early life. When the family ties with the male break down, as often happens, the females take on the responsibility for raising the children.

By and large, females are the functional heads of household. They make the bulk of the important decisions concerning the children; they see to their welfare and make the decisions regarding their schooling.

Social status is determined by the economic standing of the individual or the family. In the campo, the distinctions among groups are slight; but they may be based on the sources of credit and the size of the line of credit. The economically successful farmers are more innovative and accumulate ever larger surpluses. Their reward is social prestige. Along with prestige comes education for the children, participation in community activities, and opportunities to represent the community; natural leadership traits begin to emerge and are discerned within the group.

In the towns, the patterns of social stratification become more clearly delineated, and social classes begin to emerge. At the bottom are the transient campesinos who come to town regularly but do not reside there. The town's working class is made up of migrants who perform some of the most basic services, and serve in a subordinate capacity; their educational attainment is low. There is a middle class, consisting of teachers, government employees, professionals, merchants, and business people, which provides the town's leaders. Existing patterns of mobility allow the possibility of entry into the middle class by new arrivals who have had a campesino origin, but who have ascended either because of their education, their natural talents, or their entrepreneurial abilities. The members of the upper class usually reside in Asunción, but trace their origin to the town in question and visit on occasion, particularly to participate in local festivities.

Social distinctions are implied rather than explicit; yet, however subtle, the distinctions emerge on specific occasions and the patterns of authority bring out a discernible pecking order.^{1/} Ultimately, authority is determined by the political connections of an individual in Asunción, or with politicians who represent the central government. Other steps in the pecking order are determined by such relationships as the patron/cliente, and employer/employee interaction. Significantly, while Paraguay

^{1/} Ewart reports that at the fiesta of a town's patron saint, there will usually be two dances, one "official" and one "popular." Anyone is allowed in the popular dance and no dress rules apply. For the official dance, however, entrance requires an invitation and there are rules for dress. He adds that rowdy behavior will usually be humorously overlooked at the popular dance, but participants in the official dance would be scandalized by such improprieties in the context of celebrating their social distinctness (p. 42).

is officially a Catholic country, the social and political prominence of the Church as an institution has been diluted in the rural areas. Campesinos hold religious beliefs which are essentially based on the veneration of saints, but contacts with priests occur rarely. The result of this infrequent interaction is that priests do not figure prominently as authority figures. The campesinos do not have a perception of the Church as a socially oriented institution which exercises leadership.

C. CONCLUSIONS ON EDUCATION AS AN INPUT OF THE GOVERNMENT'S SOCIAL AND ECONOMIC POLICY

The bulk of educational services provided by the GOP in the rural areas is delivered by the schools to the population that is included within the primary school-age brackets. Other educational services are provided through a series of institutions which engage in NFE activities. It is not known with certainty what the coverage provided by these services is, since their scope is not amenable to conventional measurement. On the other hand, it can safely be said that the impact of these activities on rural educational development is quite marginal.^{1/}

Formal education in Paraguay is expected to fulfill one set of purposes, largely related to the development of individual abilities to deal with complex and abstract issues; to have direct access to mass communication, through reading and writing; to be critical and analytical; and to be prepared to learn more, by continuing in the formal system or by being able to process information received from the outside.^{2/} Following these objectives, it may be argued that the "functionality" of formal education therefore should reside in providing individuals with the needed tools that allow them to adapt to changing work and living conditions. By definition, the impact of formal education is not immediate or patently obvious in the short run. When the schools accomplish their objectives, their impact is diffused through the person's lifetime. Insofar as the technical knowledge and habits are reinforced through continued learning, the schools also fulfill the purpose of allowing individuals to reach their own potential.

Although no uniformity of purposes can be ascribed to non-formal education, it can still be said that these are generally more operative. Leaving aside those non-formal activities which are really formal education in disguise, the orientation of NFE activities is usually toward the fulfillment of immediate and tangible needs. The participants in these activities are usually adults who can only give part of their time and who seek concrete rewards (e.g., learning a skill for which there is demand, or being promoted in a job). The impact of NFE on any individual is therefore more specialized, because its original purpose is more specific.

^{1/} See Section XI.

^{2/} See Section VIII on the purposes and objectives of Paraguayan formal education as embodied in the new curriculum.

The justification for NFE can be based on the need to develop specific sets of operational skills and knowledge in the rural areas of Paraguay. This is well understood by the GOP, when it proposes that NFE should be an integral component of the country's educational strategy.^{1/} At the same time, the lack of resources, the limited absorption capacity, and the lack of expertise in delivering an NFE-based strategy in the rural areas on a significant scale, constitute critical and binding constraints for such action to take place, and to have a generalized impact on the rural population, in the foreseeable future.

The current situation in Paraguay may, therefore, be typified as follows:

- first, there is a need to strengthen participation in rural development, just as there is a need to reinforce the capacity of GOP institutions to deliver their services;
- second, the schools, by their very nature, concentrate their efforts on one segment of the population and their impact must be observed over the long run;
- third, there does not exist a highly developed NFE infrastructure in rural Paraguay and the resources are lacking to take systematic action to create such an infrastructure in the short run.

It is concluded as a result that a major effort must be undertaken to understand the importance of informal learning as a concomitant to development participation. This idea is already implicit in the government's action programs, but it needs to be made explicit. The tangible result would be the incorporation of learning and communication as an integral component of the different programs that are undertaken.

This conclusion is consistent with at least three important points made in this section. First, just like any other group, small farmers have a highly developed capacity to make rational decisions. Second, there already exists a highly developed informal mechanism for communication and individual and social interaction in rural Paraguay. Third, both individuals and institutions face critical constraints for carrying out their actions and operations. Some of these constraints can be alleviated by improving the information base on which individual and institutional decisions are made.

While a blueprint cannot be developed here, it is possible to establish some guidelines. A study can be proposed in which a detailed analysis of the learning and social organization implications of proposed programs can be spelled out. The components to be analyzed may be those

^{1/} See Section IV.

which are included in the description of the Eje program. The identification of educational implications should result in concrete guidelines for spelling out possible learning packages which would be included as program components.

The identification of learning packages must be complemented with decisions concerning the delivery of the packages. Print materials can be produced. Radio scripts can be written. Person-to-person and group patterns of communication can be explored, whether in small towns or cooperative settings. Information packages can become elements of NFE activities, as well as part of the school curricula.

Understanding the crucial factors for development participation is also an important part of this exercise. The utilization of community resources as a point of departure (e.g., through the development of community working groups and associations) may prove important. Given the strong community spirit that prevails in much of rural Paraguay and the accessibility of most places to government institutions, this initiative could strengthen communication between the government and the participants. It may also result in a more efficient deployment of community resources.

It should be understood that the goal of this exercise is to strengthen, on a systematic basis, the flow of rural information and learning in the rural areas. While education cannot by itself create social change, it is also clear that the effectiveness of the development process is largely dependent on the extent to which the participants and the institutions are informed about each other.

SECTION VI

THE EDUCATIONAL POLICY FRAMEWORK: ORGANIZATIONAL STRUCTURE, MANAGEMENT, AND DECISION-MAKING

Educational policy is concerned with the deployment and utilization of resources, and with their conversion into educational services. The availability and quality of those services are the tangible results of policy choices which may or may not be systematic and informed. In order to assess the effectiveness of educational decision-making in Paraguay, this section describes the process of policy formulation in the Ministry of Education. The generation and utilization of information for decision-making are also analyzed, as is the role of the Department of Planning within the MOE.

A. ORGANIZATIONAL STRUCTURE OF THE MOE

Chart VI-1 shows the present organization of the Ministry of Education. In common with all bureaucratic structures, the Ministry has a number of offices and departments to carry out different functions. The specialized groups and commissions which provide liaison with foreign financial and technical assistance agencies are located at the upper levels of the organizational structure. These groups inform the Minister about proposed activities and discuss, at this level, alternative choices. The Minister is also advised by a number of offices which handle legal affairs, public relations, and special areas such as worship and the national libraries and museums.^{1/}

Immediately below the Minister is the Director-General of Education, who is essentially in charge of the day-to-day operations of the Ministry. The Director-General is the direct principal of the technical, administrative, and operational departments of the Ministry. He usually chairs inter-departmental meetings, such as those regularly scheduled for the Council for Primary Education. The Director-General is also the Chairman of the Board of Directors of the Instituto Superior de Educación (ISE).^{2/}

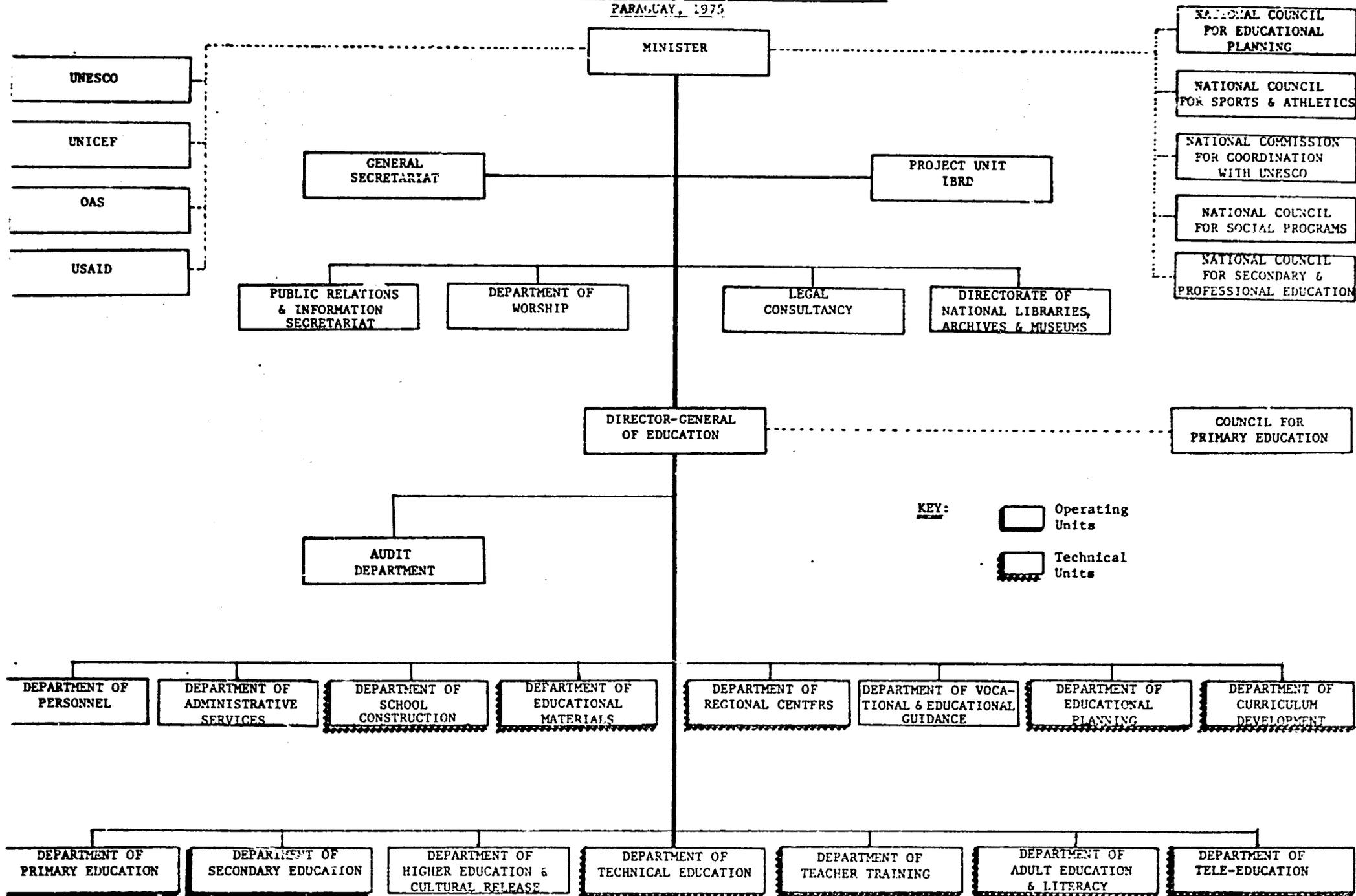
The mechanics of administration are carried out by the Departments of Personnel and Administrative Services. The Departments of Vocational and Educational Guidance, and Higher Education and Cultural Release, provide ancillary services.

The technical departments are the units where educational policy is framed and the needed support services are planned. The Departments of Primary and Secondary Education are essentially the operational arms of the Ministry, where policies are translated into programs and plans of action.

^{1/} Relations with the Catholic Church are a function of the MOE because Catholicism is the official religion of the country.

^{2/} See Section IX.

ORGANIZATION OF THE MINISTRY OF EDUCATION AND WORSHIP
PARAGUAY, 1975



1. Mechanisms for Educational Policy-Making

Educational policy processes may be viewed as a series of activities directed to the initial conception, design, production, distribution, and delivery of services expected to generate educational outcomes. Educational resource inputs include buildings, teachers, instructional materials, and curricula.^{1/}

The Paraguayan situation provides a clearly defined example of policy orientation. The leitmotif of the policy is educational reform, which is based on the change of curriculum and the structure of studies at the primary and secondary levels. The changes in curricula necessitate a re-orientation of the overall policy planning mechanism. Accordingly, teachers have to be trained under the new plan, and those currently in service have to be re-trained. Educational materials have to be designed in accordance with the new curriculum guidelines; textbooks have to be made generally available to the largest possible number of users in the system. The Regional Centers, which combine all levels of schooling and teacher training, and which are model institutions for educational delivery, have to adopt the new curricula and plans of study and monitor their progress in their own areas of influence. Construction models have to be adapted to the space and facilities needs of the new curriculum. The Planning Department must provide the technical and information inputs necessary to monitor and control the progress of the reform. The Primary and Secondary Education Departments must receive the guidelines provided by the other departments and execute the directives on a day-to-day basis.

2. Patterns of Decision-Making

Decisions have to be made on a continuous basis to carry out the proposed educational policies. The organizational structure of the Ministry insures that final decisions are made by the Minister, who is advised by the Director-General and the heads of the technical units. In this regard some units (e.g., Planning and Curriculum Development), by the nature of their functions, have greater impact on decision-making than others where functions are more specialized and limited in scope (e.g., Materials Production and Tele-education).

At the present time, however, policy decisions are essentially determined by and largely related to attaining the targets contemplated in the reform. These objectives provide a sense of direction. This, coupled with the fact that the educational system is undergoing a process

^{1/} Strictly speaking, the users of the system are also resource inputs. However, users are both subjects and agents of the educational process; their demeanor and performance in the classroom are determined exogenously as well as endogenously. The weight of exogenous factors on the determination of learning outcomes indicates the limitations faced by educational policy when it seeks to promote educational results.

of growth, causes the essential need to be the provision of more and better education: where better implies utilization of the new curricula, and more implies extension of educational opportunities. However, the scarcity of financial resources and an essentially inadequate information base combine to constrain the identification of choices and alternatives. Decisions, therefore, are limited to how the curricula should be implemented in the teacher training programs, rather than whether the curricula and plans of studies are relevant and adequate throughout the system.

All decision-making is centralized in the Ministry in Asunción. Unlike other countries, where the ministry network includes regional delegations to provide local administrative services, in Paraguay the outreach of the MOE is essentially accomplished through the supervisory system. There are few school supervisors; and as a result their work load is heavy, although it consists largely of filling out forms. The evaluative capacity of the supervisory system is limited.

The impact of policy can be diluted as the cultural and geographic distance increases between the planner and the place or environment where the policy is carried out. It may be argued that centralized planning is feasible in Paraguay, as distances are essentially short, the geography is gentle, and the communications are largely manageable from Asunción. However, it may also be argued that the overall quality of decision-making would be considerably improved if greater coordination were achieved at the local level, thereby improving feedback and information flows. In this sense, the facilitating forces present in Paraguay indicate that decentralization of decision-making away from the Ministry could be easily achieved and would be effective.

B. ASSESSMENT OF INFORMATION MANAGEMENT AND UTILIZATION

The prevailing situation within the MOE may be assessed in terms of information generation and utilization, and the technical capabilities of the units to coordinate policies at the systems level.

1. Generation and Utilization of Information

The quality and utility of planning is largely dependent on the quantity, quality, accuracy, and specificity of the information available. The information system incorporates the generation, collection, verification, processing, and utilization of the data required to carry out planning activities.

Information generation and utilization are recognized as two of the weakest areas of management in most ministries of education. This observation can easily be extended to the Paraguayan MOE. The current inadequacy of information generation and utilization arises both from limitation of resources and from insufficient coordination of technical units.

a. Structure of the Information-Gathering Mechanism

The information requirements in the MOE are substantial and wide-ranging; moreover, the information needed is of different and often unrelated kinds. In the organizational model of the MOE, the information-gathering mechanism is disaggregated, as each technical unit essentially has its own mini-investigative unit.

No unqualified criticism can be leveled against this situation. The information requirements of each unit are different, and range from the general to the specific. For some units (e.g., Curriculum Development, Educational Materials, and Technical Education), the information requirements are general, in that the data do not have to be broken down into the minutiae of specific operational details. The useful longevity of the information usually exceeds one year. The principles which determine some of the core information requirements (e.g., a theory of learning) are universal and not subject to constant and significant variations.

Units such as Teacher Training, Regional Centers, and Construction, on the other hand, need information which is more operational in content. All three units have to make decisions which are one or two steps removed from actual implementation. Information must only be sufficiently specific to allow these units to make decisions concerning programs and approaches in different areas of the system (e.g., urban and rural areas).

Finally, units such as the Departments of Primary and Secondary Education, which are essentially executive units, need detailed information inputs. Such functions as teacher assignments, training needs, program content, and school performance necessitate a continuous flow of reasonably accurate and up-to-date information.

The diversity of information requirements therefore justifies, to some extent, the division of labor. Each unit is presumably best able to cope with its own information requirements and to generate the information as it sees fit. Some flexibility might be lost were a mega-information unit established to provide all the information needed. Further, given the limited financial and human resources and the bureaucratic nature of the Ministry, a disaggregated system of information-gathering appears most appropriate.

However reasonable these arguments appear, the disaggregation of information-gathering also has some pernicious effects. Interviews with heads of technical departments revealed that much effort is currently spent on collecting information that is too limited in scope. This could be alleviated if, as a result of departmental coordinations, master instruments were developed which would take into account the information needs of a number of departments at the same time.

The limited scope of the information that is gathered also implies that a significant amount of duplication and overlap is taking place. The Department of Primary Education, for instance, collects its own data on student enrollment to plan its yearly programs. The Planning Department, on the other hand, carries out independent efforts in order to produce its statistical yearbooks.

This duplication also causes different figures to emerge about subjects which otherwise appear to be the same. Estimates are often significantly different and seem to bear no relation to each other, especially when they concern enrollment, numbers of teachers, and numbers of schools. The discrepancies are caused by differences in criteria, data collection sites, instruments used, procedures for information reporting, and techniques of information processing. The existence of these widely varying data only exacerbate other problems in the formulation of systematic policies.

b. Quantity and Quality of Information

A tremendous amount of information is collected by departments of the MCE, although a significant portion appears to be of peripheral value in contributing to systematic policy design. Frequently, information planners do not ask themselves, what type of information is needed to serve which purposes; and whether this is the kind of information that best serves the particular purposes.

As a result, excessive emphasis is placed on the collection of quantitative data, such as enrollment and numbers of teachers. Scant attention is paid to the qualitative information which is needed to support the numbers that are reported. The information lacks history, and consequently, the information-gathering exercise often constitutes a "rediscovery of the wheel." The information is not processed in such a way that emerging trends can be easily recognized. The yearly statistics compiled by the Planning Department, for instance, show that enrollment has declined in absolute terms in the last four years, from 201,461 to 193,722.^{1/} This finding does not agree with the fact that the population is growing, that the urban population is growing at a faster rate than the total population, and that school enrollment is growing at an even faster rate.

The evaluation studies produced by departments such as Curriculum also emphasize the most basic form of qualitative evaluation, which is a conventional read-out of figures on percentages and averages. It appears that many if not most of the departments have the qualified manpower to do more sophisticated types of analyses.

^{1/} MOE, Department of Planning.

The current situation, therefore, may be characterized as follows: a significant amount of information of varying quality and utility is generated; the information base, however, is not comprehensive enough, due to the partial coverage provided and the disaggregated collection system and sources of information. Excessive emphasis is placed on numbers, while far too little attention is given to qualitative interpretation.

c. Utilization of Information and Inter-Unit Coordination

The ultimate value of the information base depends to a large extent on its utilization in policy design and decision-making. The situation in the Paraguayan Ministry of Education can best be described as a less-than-optimal utilization of available information. Department heads are generally articulate about the programs they manage and supervise; this is a reflection of awareness on their part about the information available. Although no direct evidence on this point could be gleaned from interviews or meetings, it appears that the weakest link in the chain is the lack of concerted action to pool the information available to each department for system-wide programming. The best forum available for exchanging views and concerns is the weekly meeting of the Board of Directors of ISE. Yet these sessions are not conducted as brainstorming exercises to elicit possible solutions to common problems.

A case in point is the current crisis of the curriculum reform, which is impeded by the lack of coordination among the Departments of Curriculum, Teacher Training, and Primary Education (see Section VIII). The problems of the latter department are essentially operational in nature, and in this case are related to the co-existence of the new and the old curricula in the same schools. To alleviate this situation, the teacher training effort should include the production of and adherence to a careful implementation plan. The Department of Teacher Training complains that it lacks the resources to accelerate the training and re-training to the point where a smooth transition can take place in the educational reform. The Department also maintains that the curriculum guidelines are frequently not detailed enough to aid the specification of program design.

The solution of such conflicts and bottlenecks necessitates the continuous generation of information on which more comprehensive and specific program planning can be based. Using the same example, data on users and teachers are needed by both the Curriculum and Teacher Training Departments to design more detailed training and re-training programs and to plan their implementation. The Department of Primary Education can provide some of these data from existing information derived through its own surveys. This department also needs to adopt the necessary criteria, and to communicate these to the other two departments, for implementing the reform throughout the system. Primary Education, in other words, is not only a recipient unit; it must also influence and condition the content of policies initiated in the other units.

C. THE DEPARTMENT OF EDUCATIONAL PLANNING

The Department of Educational Planning, created in 1959 and reorganized along present lines in 1972, is headed by a director, and consists of the divisions of Information, Statistics, Budget and Programming, and Organization and Methods. The Department is charged with "carrying out studies of the different levels of the system and making them available for the formulation of educational policy; coordinating the elaboration of plans, programs, and educational projects and providing technical assistance for their implementation; elaborating the MOE budgets and evaluating budget execution; elaborating educational statistics; analyzing work methods and procedures; and studying manuals and regulations."^{1/} Currently, the tasks which engage most of the Department's resources are the development of budget projections, the elaboration of educational statistics, and the production of specialized studies. In addition, the Department provides the necessary liaison for most projects with international agencies.

The Department has produced a number of studies and documents, including the 1968 Diagnóstico Educativo and the Educational Plan for 1969-1980; and reports on internal efficiency, teacher attitudes, and educational costs. The documents produced by the Department are distributed to department heads throughout the system.

The Department also sends budget forms to the different Ministry offices each year, and draws up budget proposals on this basis. In addition, statistical yearbooks are produced annually, although they are not usually released until the following year.

In terms of planning and evaluation activities, however, the Department's role is rather limited. In order to effectively perform these functions, the Department would have to generate the major portion of the information base necessary to serve the needs of all the other technical units. A data bank and depository system would be required, so that the Department could process information and provide the other units with detailed guidelines for action. The Department should have the necessary monitoring capability to evaluate on a continuous basis the progress toward planned targets; or, alternatively, the feasibility of achieving such targets.

At present, the scarcity of resources voids the possibility of achieving these technical functions. While there are a number of individuals in the Department with varying amounts of training in social science research techniques and experience in survey research, most personnel are engaged in the tedious tasks of data tabulation. Currently, the Department lacks access to computer services, and all calculations have to be performed by hand or with desk calculators.

^{1/} MOE, Desarrollo de la Educación: Segundo Proyecto MEC/BIRF, Asunción, 1975, p. III/G/1.

1. Guidelines for Developing the Planning and Information Mechanism

Many of the activities required for a comprehensive approach to educational planning and information management are within the purview of the Planning Department. The tasks to be accomplished are listed on Table VI-1, according to three major categories:

- Access and coverage, which deal directly with issues of equitable distribution of educational opportunities.
- Internal efficiency, which deals with the evaluation of the operation of the education and training system according to organizational criteria.
- External efficiency, which refers to the relevance of the products of the education and training system, given the national development objectives of Paraguay.

Table VI-2 describes the major research and development efforts to be accomplished.

Data required for determining the distribution of educational opportunities can be obtained from demographic information available in existing censuses and surveys, or could be collected through special surveys, where necessary. For example, current estimates of participation in the formal education system can be derived from the 1972 census. These estimates should be updated; the figures should be disaggregated to identify localities with special problems, and broadened to include participation in other kinds of educational and training programs.

A second set of tasks involves the review and analysis of existing studies on determinants of schooling and training, and the development of indicators to allow a continuous assessment of the success of efforts to extend participation in education and training programs.

One of the major tasks for the Planning Department over the next several years should be the development of an efficient and effective system of collection and analysis of basic statistics. This will require an analysis of the process of policy formulation and decision-making within and among the various organizations in the education and training system. It will also necessitate the development of new reporting formats and procedures, the installation of equipment adequate for the processing and storage of large amounts of data, and the development of analytical procedures to provide a regular flow of information to decision-makers and others, in a form that is immediately usable.

Given an improved data base, it will be possible to develop and apply simulation models of the system that allow evaluation of the impact of various policies on flows and throughputs. Models of this kind are essential to assess the efficacy of existing policies and indicate potential bottlenecks. They should also facilitate the coordination of programs run by different agencies.

TABLE VI-1

WORK PLAN FOR DEVELOPING COMPREHENSIVE PLANNING
OF EDUCATION AND TRAINING SYSTEM 1/

ACCESS AND COVERAGE (EQUITY)

1. Demographic Data
 - a. Censuses
 - b. Rates (components)
 - c. Register data
 - d. Projections

2. Socio-economic Studies
 - a. Register data
 - b. Special studies

INTERNAL EFFICIENCY

1. Enrollment and Flow Statistics
 - a. Creation of an information system
 - design of forms
 - systems of data collection
 - systems analysis
 - equipment for processing
 - b. Flow models (parameter estimations, especially rates)
 - c. Flow studies
 - by creation of synthetic cohorts
 - through direct measurement

1/ Prepared by Russell G. Davis, Harvard University.

TABLE VI-1
(Continued)

2. Input Inventories
 - a. Buildings/equipment
 - condition, maintenance
 - location (development of map)
 - b. Teaching staff
 - c. Supervisory staff
3. Cost Analysis
 - a. Budget studies
 - global figures
 - process and organization
 - b. Unit cost studies
refine using categories relevant to organization of system
(O and M)
4. Estimation of Academic Achievement
 - a. Design of instruments
 - b. Design of samples
 - c. Collection and analysis
 - d. Cost-effectiveness, cost-benefit
5. Organization and Methods
 - a. Budget
 - b. Personnel
 - c. Administration
 - d. Supply

EXTERNAL EFFICIENCY (RELEVANCE)

1. Analysis of National Objectives: Economic, Social, Educational

TABLE VI-1
(Continued)

2. System Analysis
 - a. Description of present system
 - present structure
 - alternative structures
 - b. Description at organizational level
 - structure
 - process
 - relations of educational system with other sectors, e.g., National Planning Office, Executive Branch
3. Studies to Relate Social/Economic Goals with Objectives and Goals of Educational System
 - a. Demand for manpower
 - b. Supply by system in global terms
 - c. Work requirements and educational outputs
 - measurement of achievement (abilities)
 1. cognitive
 - information acquisition
 - reasoning, problem-solving
 2. psychomotor
 3. social
 4. others
 - measurement of work requirements in parallel dimensions
 - d. Programs that link work experience with formal instruction

TABLE VI-2

MAJOR RESEARCH AND DEVELOPMENT ACTIVITIES REQUIRED

- Development and application of measures of program outputs. Development of instruments to measure outputs of education and training programs, relevant to national objectives for educational system. Linked to curriculum reform as well as effort of other training organizations to identify programs with higher cost-effectiveness.
- Cost-benefit analyses. Development and utilization of instruments for periodic measurement of costs of programs, resulting in identification of programs with positive cost-effectiveness. Includes training of staff in cost-benefit analysis and use of information in annual programming and budgeting cycle.
- Physical facilities inventory. Continuation of work on building facilities map, which is critical to the development of a maintenance program, and assessment of needs for additional construction.
- Non-agricultural employment survey. Designed to complement existing Small Farmer Survey, to provide data on labor force participation and employment characteristics as related to education and training. This study should be done with the Office of Human Resources of the Ministry of Labor and Justice. May contribute to development of periodic employment survey and establishment of labor market information service.
- Assessment of work force requirements. Designed to go beyond quantitative estimates of demands for occupations to description of occupational requirements in terms of outputs of education and training system. Should cover both urban (industrial/commercial) and agricultural (farm and off-farm) employment.
- Program evaluation studies. Follow-up or tracer studies on graduates of existing and planned education and training programs. Should include SNPP and agricultural training programs, implying close collaboration with other Ministries.
- Program development. Use of information collected above to design new formal and non-formal education programs and structures that develop knowledge, attitudes, and skills required in projected labor force.
- Decision-making and policy formation in education and training system. Description and analysis of present structure and process of decision-making, with attention to information flows and utilization, leading to design of improved networks for data transmission in the system.

The rapid expansion of the system is dependent upon the efficient use of scarce resources. This can be accomplished given accurate and timely information on the condition, location, and utilization of existing resources, including buildings, educational materials, teachers, and supervisory personnel. Development of a register of teaching and supervisory personnel is already an objective of the Personnel Department of the Ministry of Education, but progress has been slow, due to a shortage of technical staff.

The Planning Department will also need to improve its capacity to lend technical assistance in budgeting and cost analysis to other organizations within the education and training system. The Department has recently conducted a study on costs; these data can be reviewed and analyzed in more detail, and thus form the basis for a regular program of collection of expenditure data on various aspects of the education and training process. Armed with better estimates of populations to be served and more precise knowledge of present resources, the Department will be in a position to help implementing departments prepare annual operating plans consistent with the objectives of the multi-year Ministry program. Similar services could be provided to outside agencies, once the Department has acquired the necessary capability and made its services available to other departments.

The combination of cost information and data on educational output will permit an evaluation of education and training programs. It should be possible to develop a national achievement examination, or a functional equivalent, for assessing primary education. Because there will be natural variations in combinations of inputs (teachers, buildings, materials, and students), it will be possible to do research on the most effective means of organizing schools. It is expected that other education and training agencies will develop similar summative evaluation instruments, with varying degrees of sophistication, that will enhance comprehensive planning of the system.

The Planning Department is also the logical place for coordination of studies on organization and methods for the various departments within the Ministry. Some progress is already being made in working with the operational divisions to help them improve administrative practices.

The third set of tasks is intended to provide information about the outcomes of education and training, to increase the system's contribution to national development. The first phase is therefore an analysis of national planning objectives, deriving educational objectives from economic and social goals. A second step analyzes the structure of the present system of education and training, in terms of how its products link with other sectors, as well as how demands from other sectors are registered in the education and training system.

The next step is a series of studies to assess the amount and type of demand (e.g., of graduates) on educational and training programs, compared with the capacity of the system to meet these demands. What is

contemplated would go beyond traditional manpower analysis, in which the process stops with merely matching numbers of graduates with numbers of positions. Especially given the development strategy being pursued in Paraguay, it will be necessary for each of the organizations in the education and training system to do detailed studies of the role requirements graduates should meet, as well as to develop assessment devices to measure educational achievement in adult role terms rather than through curriculum-based measures.

It is expected that the initial result of these efforts will be the recognition that existing programs do not provide the skills and attitudes necessary for increased productivity, either in agriculture, in agro-industry, or in low-technology substitution industry in urban areas. An active collaboration between the Ministries of Education, Agriculture, and Labor should encourage the development of new alternatives to education and training that do provide requisite skills and attitudes. Given the experience of other countries, one alternative would be programs that combine work and education.

2. Required Inputs

The realization of the activities proposed above will not be possible given the present level of staffing and funding of the Planning Department and the other agencies involved. The following general list suggests the kinds of additional inputs needed.

- The Planning Department will require additional personnel, perhaps some on loan from the Ministries of Agriculture, and Justice and Labor. Electronic data processing facilities are required at an early stage in the process, to facilitate the development of computer-compatible data collection and analysis procedures, and to allow for maximum use of the computer in development of planning models.
- Improved data collection will require logistical support as planners and supervisors spend more and more time in the field. Although most of the research discussed above can and should be done through the Ministry itself, it will be necessary to place some studies in local research centers with special skills.
- Both short and long-term training of Ministry personnel will be required. Much of the short-term training could be provided on-site, using local resources and technical advisors. In addition to on-the-job training with counterparts, technical advisors could run regular training courses.

SECTION VII

THE FORMAL SYSTEM:
PARTICIPATION IN PRIMARY AND SECONDARY EDUCATION

A. THE PRIMARY LEVEL: STRUCTURE AND SCOPE

1. Scope and Coverage

As prescribed by Article 84 of the Paraguayan Constitution, primary education is free and compulsory for all children from 7 to 14 years of age. In line with the spirit of the law, education is recognized as a continuous process leading towards individual growth. Primary education is considered the entry point to an educational system whose philosophy is to provide maximum growth and development opportunities on a non-discriminatory basis to all Paraguayan children.

Despite the significant increase in enrollments and the less significant progress in retention over the last few years, the standard set forth in the Constitution still remains to be realized. In 1975, for example, the primary education system served 452,000 urban and rural children in some 4,000 schools, representing a 3 percent increase in participation over 1974.^{1/} Of the total, approximately 191,000 went to urban schools and 261,000 to rural schools. The public/private breakdown was 386,000 to 66,000, respectively.

Table VII-1 provides enrollment data for 1975 by region, sex, and source of support.

TABLE VII-1
ENROLLMENT DATA FOR PRIMARY EDUCATION, BY PUBLIC AND PRIVATE
SECTORS, SEX, AND RURAL AND URBAN AREAS, 1975

Sex	Totals			Source of Support					
	Total	Urban	Rural	Public			Private		
				Total	Urban	Rural	Total	Urban	Rural
Male	237,790	97,909	139,881	204,391	75,639	128,752	33,399	22,270	11,129
Female	214,459	93,306	121,153	181,523	69,680	111,843	32,936	23,626	9,310
Total	452,249	191,215	261,034	385,914	145,319	240,595	66,335	45,896	20,439

Source: MOE Statistics for 1975.

^{1/} An alternative source puts the number of schools at 2,800, while another cites 3,700 as the accurate figure (see Section X).

TABLE VII-2
ENROLLMENTS IN PRIMARY EDUCATION BY DEPARTMENT AND ZONE, 1974

DEPARTMENT AND ZONE	Total	7 years	Percentage of Enrollments by Age					Enrollments		
			8 years	9 years	10 years	11 years	12 years	7-15+	7-12	%
Total										
Urban	42	37	39	41	44	46	47	454,853	375,531	83
Rural	58	63	61	59	56	54	53	195,533	158,095	81
								259,320	217,436	84
Asunción										
Urban	100	100	100	100	100	100	100	62,099	50,870	82
Rural	-	-	-	-	-	-	-	62,033	50,870	82
Concepción										
Urban	37	35	33	36	38	40	42	19,620	15,707	80
Rural	63	65	67	64	62	60	58	7,761	5,843	76
								11,949	9,854	83
San Pedro										
Urban	24	21	21	23	25	27	29	29,156	23,595	81
Rural	76	79	79	77	75	73	71	7,326	5,731	78
								21,830	17,864	82
Cordillera										
Urban	35	32	32	33	27	38	39	41,899	34,493	82
Rural	65	68	68	67	73	62	61	14,930	12,039	81
								26,969	22,454	83
Cuairá										
Urban	40	33	34	37	42	47	49	25,964	21,691	84
Rural	60	67	66	63	58	53	51	10,948	8,669	79
								15,016	13,022	87
Caaguazú										
Urban	26	20	23	25	27	29	32	43,994	36,972	84
Rural	74	80	77	75	73	71	68	11,613	9,507	82
								32,381	27,465	85
Caazapá										
Urban	26	17	23	24	29	33	36	33,689	19,295	85
Rural	74	89	77	76	71	67	64	6,050	4,996	83
								16,639	14,299	86
Itapúa										
Urban	27	23	25	25	27	30	30	40,393	36,284	85
Rural	73	77	75	74	73	70	70	11,033	9,153	83
								29,360	25,131	86
Misiones										
Urban	45	39	41	43	46	51	50	14,796	12,290	83
Rural	55	61	59	57	54	49	50	6,706	5,510	82
								8,090	6,780	84
Paraguari										
Urban	28	25	26	26	31	31	31	41,117	33,833	82
Rural	72	75	74	72	69	69	69	12,136	9,640	79
								28,981	24,193	83
Alto Paraná										
Urban	30	25	27	30	32	34	34	17,235	14,007	81
Rural	70	75	73	70	68	66	66	5,310	4,213	79
								11,926	9,794	82
Central										
Urban	39	36	36	37	40	40	42	61,708	50,847	82
Rural	61	64	64	63	60	60	58	24,253	19,584	81
								37,415	31,763	84
Neembucu										
Urban	45	41	42	45	45	50	48	13,230	10,854	82
Rural	55	59	58	55	55	50	52	6,111	4,894	80
								7,119	5,960	84
Amanbay										
Urban	50	45	50	50	50	52	50	9,878	7,873	79
Rural	50	55	50	50	50	48	50	4,819	3,874	80
								5,059	3,949	84
Pto. Hayes										
Urban	36	31	37	37	39	39	35	5,921	4,849	82
Rural	64	69	63	63	61	61	55	2,104	1,761	84
								3,817	3,088	81
Boquerón										
Urban	35	26	29	34	47	42	45	4,313	3,529	82
Rural	65	74	71	66	53	58	55	1,583	1,240	79
								2,730	2,285	84
Olimpo										
Urban	96	96	94	95	97	96	95	847	592	70
Rural	4	4	6	5	3	4	5	808	567	70
								39	25	71

Source: Paraguay Education Project Sector Memorandum, International Bank for Reconstruction and Development, 1975 (based on MOE Statistics for 1974).

Participation rates are relatively high. In urban areas, the rates range from 79.5 percent at age 14, to 95.6 percent at age 11. The rates in rural areas range from 70.3 percent at age 7, to 87.4 percent at age 11. Table VII-2 provides the details of participation in each of the Departments by urban and rural areas, in 1974.

Despite the relatively high participation rates, the school pyramid is steep, particularly in the rural areas. Chart VII-1 shows that in 1974 there were 84,300 students enrolled in the first grade in the rural areas, while 40,400 were enrolled in the urban areas. At the fourth grade level, however, urban enrollment exceeded rural enrollment (31,800 vs. 31,500); and by the sixth grade, there were nearly twice as many urban students (23,700 vs. 12,800). The secondary level is not offered in the rural areas. The pyramid also shows that in the urban areas in 1974, for every 1,000 students who were enrolled in first grade, 492 were enrolled in the first year of secondary school; 163, in the last year of secondary school; and 134, in the first year of higher education. Twenty were graduating from university.

Participation rates vary considerably when examined by age and sex of individuals. Table VII-3 illustrates, for example, that females show consistently lower participation than males. Participation rates decline radically for both sexes, however, after age 9.

TABLE VII-3
PARTICIPATION RATES IN PRIMARY SCHOOLS BY AGE AND SEX, 1975

Age	Population		Enrollments		Percentages ^{1/}	
	Male	Female	Male	Female	Male	Female
7	40,195	39,183	64,163	57,573	160	147
8	38,984	38,042	52,724	46,415	135	122
9	37,793	36,917	42,598	39,291	112	106
10	36,610	33,799	33,534	30,229	92	89
11	35,420	34,675	25,324	22,959	71	66
12	34,326	33,636	19,447	17,992	56	53

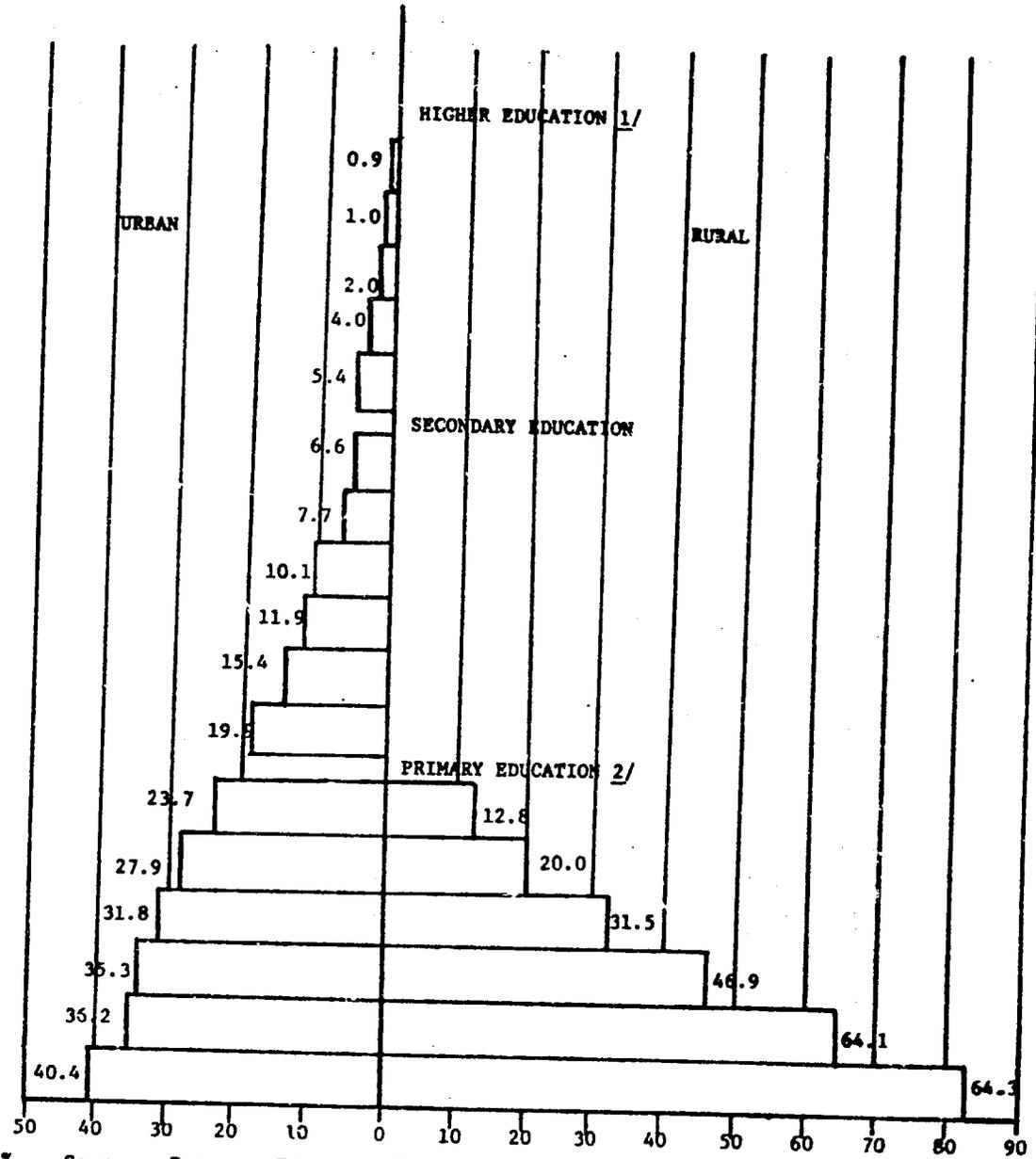
Source: Paraguay Education Project Sector Memorandum, International Bank for Reconstruction and Development, 1975.

^{1/} In common with most educational statistics, the participation rates surpass the 100 percent mark. This statistical aberration is best interpreted here as full participation.

CHART VII-1

EDUCATIONAL PYRAMID: ENROLLEES IN PUBLIC AND PRIVATE INSTITUTIONS, 1974 (IN THOUSANDS)

AGE	POPULATION	GRADE	ENROLLMENT	TOTAL ENROLLMENT	GROSS % OF AGE GROUP
19-23	249.9			13.3	5%
23	45.6	5	0.9		
22	48.3	4	1.0		
21	50.4	3	2.0		
20	52.2	2	4.0		
19	54.0	1	5.4		
13-18	361.3			71.6	19%
18	55.9	6	6.6		
17	57.7	5	7.7		
16	59.4	4	10.1		
15	61.1	3	11.9		
14	62.7	2	15.4		
13	64.3	1	19.9		
7-12	429.5			454.9	105%
12	66.2	36.5			
11	58.2	47.9			
10	70.4	63.3			
9	72.7	82.2			
8	74.9	100.3			
7	77.1	124.7			



1/ Estimated. 2/ Net age group participation rate 82%.

Source: Paraguay Education Project Sector Memorandum, IBRD, 1975 (based on MOE Statistics for 1974).

Unpublished MOE data indicate that participation rates continue to decline after age 12, and that the decline is much higher for rural youths. For instance, while 41 percent of all urban children (and 44 percent of those in Asunción) aged 15 to 19 are enrolled in school, the corresponding figure for rural children is only 13 percent.

2. Performance Indicators

The performance of the system is analyzed from an economic perspective in Sections XIII and XIV. At this point, it is appropriate to examine the system's performance in relation to flow indicators which incorporate information on drop-out and retention rates. Student flow is a good proxy for measuring the efficiency of formal education in terms of the attainment of basic objectives such as intake and retention.

Table VII-4 shows student repetition by sex, grade, and location. Males are more likely to repeat a grade than females: 57 percent of all repeaters in 1975 were male. Sixty-eight percent of all repetition in 1975 took place in the rural areas. As expected, the highest repetition rate is found in the first grade, where official figures place it at 26 percent. This figure, however, appears to underestimate the problem of repetition. Independent research by Schiefelbein indicates that the repetition rate in Paraguay in the first grade is approximately 53 percent, using one method of calculation; using a second method, Schiefelbein has derived a repetition rate of 35 percent.^{1/}

Desertion is also a major problem in the system. As shown in Table VII-5, of the 40,798 children who dropped out of school in 1975, some 26,628 (65 percent) were from rural schools. The greatest number of drop-outs leave the system at the first grade level (4,705 students, representing 35 percent of all the drop-outs for all six grades). The lowest number of drop-outs occurs at the sixth grade level.

Table VII-6 shows that proportionately, through all six grades, more males than females leave the system. Fifty-six percent of the total number of drop-outs in 1975 were male.

^{1/} E. Schiefelbein, "La Sub-Estimación del Problema de la Repetición en América Latina," unpublished paper submitted to the Revista del Centro de Estudios Educativos, March 1977. Schiefelbein argues that the questionnaire formats used for the collection of educational statistics usually do not make adequate discrimination of individuals who transferred between schools, those who left the grade before finishing the school year, those who did not take the finals, and the new students. There is therefore a built-in bias to report all these students as new entrants. Furthermore, because of the stigma attached to repetition, many parents fail to report that their children are, in fact, repeaters.

TABLE VII-4
NUMBER OF REPEATERS BY SEX, GRADE, AND LOCATION, 1975

<u>By Grade and Sex</u>							
Sex	Number of Students						
	Total	1st grade	2nd grade	3rd grade	4th grade	5th grade	6th grade
Male	39,796	15,997	10,928	6,727	3,675	1,688	781
Female	29,582	12,755	7,775	5,219	2,428	1,000	405
Total	<u>69,378</u>	<u>28,752</u>	<u>18,703</u>	<u>11,946</u>	<u>6,103</u>	<u>2,688</u>	<u>1,186</u>

<u>By Sex and Location</u>									
Sex	Totals			Source of Support					
	Total	Urban	Rural	Public			Private		
				Total	Urban	Rural	Total	Urban	Rural
Male	39,796	12,394	27,402	36,265	10,631	25,634	3,531	1,763	1,768
Female	29,582	9,495	20,087	26,668	7,923	18,745	2,914	1,572	1,342
Total	<u>69,378</u>	<u>21,889</u>	<u>47,489</u>	<u>62,933</u>	<u>18,554</u>	<u>44,379</u>	<u>6,445</u>	<u>3,335</u>	<u>3,110</u>

Source: MOE Statistics for 1975.

3. Innovative Programs in Primary Education

During the past few years, the MOE and the Department of Primary Education have experimented with innovative strategies designed to alleviate the more critical problems in the rural primary system. The MOE has expressed interest in expanding these pilot programs, as well as in improving the system's ability to meet the basic education needs of those aged 7 to 14. Two of the programs currently underway involve multi-grade teaching and equivalency examinations.

- Plurigrado. Rather than being held to highly structured grade levels in rural schools, some 66,000 students are currently participating in multi-age, multi-grade schooling programs. The Department of Primary Education views these programs as a realistic approach to the problem of the wide range in ages of rural students in the lower and middle grade levels.

TABLE VII-5
NUMBER OF PRIMARY SCHOOL DROP-OUTS, BY SECTOR AND LOCATION, 1975

Grades	Total	Number of Drop-outs			
		Zone		Support	
		Urban	Rural	Public	Private
Total	40,978	14,350	26,628	34,065	6,913
1st Grade	14,705	4,007	10,698	11,581	3,124
2nd Grade	8,910	2,653	6,257	7,287	1,623
3rd Grade	6,627	2,366	4,261	5,779	848
4th Grade	5,069	2,197	2,872	4,448	621
5th Grade	3,313	1,825	1,488	2,931	382
6th Grade	2,354	1,302	1,052	2,039	315

Source: MOE Statistics for 1975.

TABLE VII-6
NUMBER OF PRIMARY SCHOOL DROP-OUTS, BY SEX AND GRADE, 1975

Grades	Total	Number of Drop-outs	
		By Sex	
		Male	Female
<u>TOTALS</u>	40,978	23,133	17,845
1st Grade	14,705	8,182	6,523
2nd Grade	8,910	4,976	3,934
3rd Grade	6,627	3,569	3,058
4th Grade	5,069	2,944	2,125
5th Grade	3,313	1,982	1,331
6th Grade	2,354	1,480	874

Source: MOE Statistics for 1975.

- Equivalency Examinations. The Department has provided the opportunity for students who are more than two years beyond grade age level to receive schooling credit by passing free, competency-based examinations. In 1976, some 600 students qualified for the sixth-grade certificate through this program, of 1,050 who took the examination.

B. THE SECONDARY LEVEL: STRUCTURE, PARTICIPATION, AND PERFORMANCE

1. Structure

Secondary education in Paraguay consists of two cycles, each requiring three years for completion: the Basic Cycle, and the Diversified Cycle leading to Bachillerato. Entrance to the Basic Cycle is open to all those who have completed primary education. Entry into the Basic Cycle is at about age 13; by the time they are 16, students begin the Diversified Cycle. After graduation, depending on career choice, as many as six years of post-secondary education may be required.

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

2. Enrollments

As shown in Table VII-7, nearly 75,000 students were enrolled in 430 secondary schools in 1976. Of the 46,375 students in public secondary schools, 61 percent were enrolled outside Asunción. Slightly under half of all students in the capital were enrolled in private schools, but 35 percent of all students in towns in the interior attended private schools. Thus, the public schools carry a greater burden of the secondary attendance in the interior than in the capital. In the Chaco there were two schools in 1976; one public and one private. There are still no secondary schools, in the Department of Nueva Asunción.

TABLE VII-7

SECONDARY SCHOOL ENROLLMENTS BY SECTOR AND LOCATION, 1976

	Public Schools	Private Schools	Total
Asunción	17,857	16,647	34,504
Rest of Country	28,518	10,229	38,747
Total	46,375	26,876	73,251

Source: MOE, Department of Secondary Education, 1976.

Table VII-8 shows the number of schools by type of support and by programs offered. Many of these schools are incomplete; that is, they offer only the Basic Cycle.

TABLE VII-8

SECONDARY SCHOOL PLANTS, BY LOCATION AND SOURCE OF SUPPORT, 1976

	Public	Private	Total
Asunción	64	71	135
Interior	199	96	295
Totals	<u>263</u>	<u>167</u>	<u>430</u>

Source: MOE, Department of Secondary Education, 1976

Table VII-9 shows the number of students enrolled in all secondary schools during the period from 1969 to 1976.

TABLE VII-9

NUMBER OF STUDENTS ENROLLED IN SECONDARY SCHOOLS, BY SPECIALIZATION, 1969-1976

	Basic Cycle	Diversified Cycle		Total
		Humanities	Technical	
1969	28,169	8,524	2,513	39,206
1970	28,948	9,732	3,002	41,682
1971	31,412	11,731	2,792	45,935
1972	41,324	16,697	3,527	61,548
1973	44,253	18,873	3,624	66,750
1974	43,490	20,040	3,016	66,546
1975	47,403	21,486	2,833	71,722
1976	48,841	22,149	3,262	74,252

Source: MOE, Department of Planning, 1976.

From 1969 to 1976, enrollments increased by 35,046, or 89 percent. Enrollment in the Basic Cycle rose at the annual rate of 7.12 percent in this eight-year period. The percentage of Diversified Cycle enrollment in the humanities in 1969 was 77 percent; by 1975, it increased to 88 percent. In 1976 the proportion was 87 percent. The percentage of students enrolled in the humanities might be expected to diminish, as more emphasis is placed on technical training rather than preparation for university studies.

a. Enrollment by Sex

Table VII-10 shows the enrollment distribution between males and females in 1975.

TABLE VII-10
PARTICIPATION IN THE SECONDARY LEVEL BY SEX, 1975

	<u>Basic Cycle</u>	<u>Diversified Cycle</u>	
		<u>Humanities</u>	<u>Technical</u>
<u>TOTAL</u>			
Males	25,693	10,544	1,824
Females	<u>23,710</u>	<u>11,956</u>	<u>1,697</u>
Total	<u>49,403</u>	<u>22,500</u>	<u>3,521</u>
<u>PRIVATE</u>			
Males	8,610	4,330	1,147
Females	<u>8,905</u>	<u>5,066</u>	<u>1,056</u>
Total	<u>17,515</u>	<u>9,396</u>	<u>2,203</u>
<u>PUBLIC</u>			
Males	17,083	6,214	677
Females	<u>14,805</u>	<u>6,890</u>	<u>641</u>
Total	<u>31,888</u>	<u>13,104</u>	<u>1,318</u>

Source: MOE, Department of Planning, 1975.

As is shown, there are more females than males in the humanities track of the Diversified Cycle, which offers preparation in fields that traditionally have been the venue of participation by women. The significant number of females in the technical track reflects the fact that initial training is offered for traditionally female technical careers, such as nursing.

There is a slightly higher retention rate among females, leading to the tentative conclusion that while females are less likely to enter secondary school, they are more likely to complete all six years.

b. Age Distribution

Table VII-11 shows the age distribution of students in secondary schools by sex, year, and grade.

Nearly 10 percent of all females enrolled are over 18 years of age while the comparable figure for males is 8.7 percent. Using 13 as the expected age for the first year of study, and adding one year per grade through the secondary cycle, a large number of people in different age cohorts can be observed in any given course. In the third and sixth year of study, there are more males in the one-year younger cohort than in the expected year cohort. Some 2,879 males and 2,039 females were over the age of 14 in the first year of secondary school in 1975. The proportions have not changed significantly from 1972, when 25 percent were over age 14, or from 1974, when the figure was 28 percent.^{1/}

c. Absorption

The absorption of the system in 1968 and 1974 is presented in Table VII-12.

Absorption, as expected, is greater for 14 and 15-year-olds than for older age groups; 13-year-olds are found at the primary as well as the secondary level.^{2/} Other intake figures available from the 1972 census show the following trends:^{3/}

- A higher proportion of males than females aged 15 to 19 are absorbed into the system.

^{1/} MOE Department of Planning, Investigación Sobre Rendimiento del Sistema Educativo, Asunción, 1976, pp. 254-255.

^{2/} Ibid., p. 181.

^{3/} Ibid., p. 21.

TABLE VII-11
SECONDARY EDUCATION: ENROLLMENT AND AGE DISTRIBUTION
BY SEX, YEAR, AND GRADE

	E N R O L L M E N T						
	Total	G R A D E Y E A R					
		First	Second	Third	Fourth	Fifth	Sixth
TOTAL	75,424	20,709	16,013	12,681	10,540	8,434	7,047
Less than 13 years	6,393	5,840	548	5	-	-	-
13	10,803	5,901	4,388	504	10	-	-
14	13,110	4,050	4,948	3,730	377	5	-
15	12,363	2,477	3,019	3,852	2,743	264	8
16	10,797	1,143	1,621	2,242	3,331	2,241	219
17	9,138	541	678	1,131	1,855	2,694	2,239
18	5,766	321	313	578	1,011	1,489	2,054
19	3,092	133	171	273	483	833	1,199
20 to 24	3,107	223	247	289	572	705	1,071
25 & over	855	80	80	77	158	203	257
MALE	38,061	11,205	8,197	6,291	5,059	4,038	3,271
Less than 13 years	3,225	3,001	221	3	-	-	-
13	5,488	3,020	2,253	209	6	-	-
14	6,823	2,305	2,498	1,865	144	1	-
15	6,467	1,468	1,625	1,857	1,405	109	3
16	5,417	717	843	1,116	1,464	1,187	90
17	4,595	307	368	586	910	1,283	1,141
18	2,708	168	132	317	531	682	878
19	1,452	77	87	143	267	346	532
20 to 24	1,496	109	131	143	266	328	519
25 & over	390	33	39	42	66	102	108
FEMALE	37,363	9,504	7,816	6,390	5,481	4,396	3,776
Less than 13 years	3,168	2,839	327	2	-	-	-
13	5,315	2,881	2,135	295	4	-	-
14	6,287	1,745	2,450	1,855	233	4	-
15	5,896	1,009	1,394	1,995	1,338	155	5
16	5,380	426	778	1,126	1,867	1,054	129
17	4,543	234	310	545	945	1,411	1,098
18	3,058	153	181	261	480	807	1,176
19	1,640	56	84	130	216	487	667
20 to 24	1,611	114	116	146	306	377	552
25 & over	465	47	41	35	92	101	149

Source: MOE, Anuario Estadístico, 1975.

- The intake of males and females aged 14 is 72 percent and 61.6 percent, respectively. The proportion drops to 46.5 percent for 15-year-old males and 35.5 percent for 15-year-old females.
- Another significant decline occurs for the 16-year-olds, whose participation rates are 30.5 percent for males and 26.7 percent for females. One-fifth or less of the 17-year-old males and females are absorbed by the system.

TABLE VII-12

SECONDARY EDUCATION: ABSORPTION RATES BY AGE, 1968 and 1974

	1 9 6 8			1 9 7 4		
13	57,600	5,663	9.8	64,300	10,124	15.7
14	56,000	7,584	13.5	62,700	12,051	10.2
15	54,000	7,757	14.4	61,100	11,664	19.0
16	51,000	6,807	13.3	57,400	10,498	18.2
17	48,500	5,810	12.0	57,700	8,605	14.9
18	46,300	3,947	8.5	55,900	5,740	10.3
TOTAL	313,400	37,568	12.0	359,100	58,682	16.3

Source: MOE, Investigación Sobre Rendimiento del Sistema Educativo, July 1976, p. 181.

d. Retention

Retention rates at the secondary level are presented in Tables VII-13 and VII-14.

Of the cohort of pupils entering the first year of the Basic Cycle in 1964, 39.5 percent graduated in 1969. That retention figure improved slightly for the 1969 cohort, of which 42.9 percent graduated from the last year of the Diversified Cycle in 1974.

TABLE VII-13

SECONDARY EDUCATION RETENTION RATES, 1964-1969

YEAR	COURSE	RETENTION		DROP-OUT	
		Students	%	Students	%
1964	1st	10,094	-	-	-
1965	2nd	7,702	76.3	2,392	23.7
1966	3rd	6,306	62.5	3,788	37.5
1967	4th	5,809	57.5	4,285	42.5
1968	5th	4,768	47.2	5,326	52.8
1969	6th	3,989	39.5	6,105	60.5

Source: MOE, Department of Planning.

TABLE VII-14

SECONDARY EDUCATION RETENTION RATES, 1969-1974

YEAR	COURSE	RETENTION		DROP-OUT	
		Students	%	Students	%
1969	1st	15,343	-	-	-
1970	2nd	12,077	78.7	3,266	21.3
1971	3rd	9,443	61.5	5,900	38.5
1972	4th	8,858	57.7	6,485	42.3
1973	5th	7,174	46.8	8,169	53.2
1974	6th	6,589	42.9	8,754	57.1

Source: MOE, Department of Planning.

e. Cohort Flows

In Tables VII-15 and VII-16, the 1954 and 1969 cohorts are followed until graduation.

The tracing of the two cohorts shows that of the 1954 cohort, 22.4 percent graduated; of the 1969 cohort, 40.4 percent graduated. In the first cohort, chances for retention improved once students reached the fourth year. The 1969 cohort showed higher rates of retention in the first year than did the 1954 cohort.

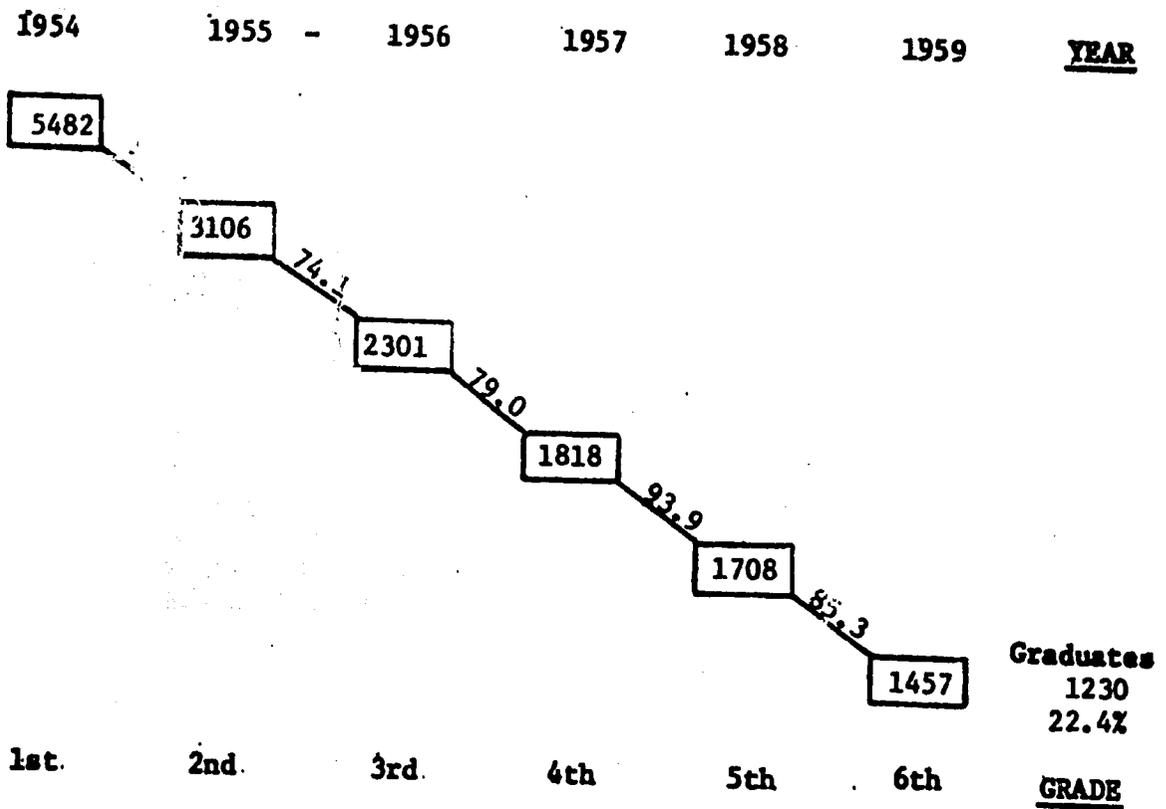
3. Access to Secondary School

In terms of transition from the primary to the secondary level, in 1974 nearly 31,000 children graduated from the first grade; 20,373 enrolled in the first year of the Basic Cycle in 1975.^{1/} Thus, it would appear that almost two-thirds of the sixth grade graduates in 1974 entered secondary school in 1975. It is more likely, however, that less than two-thirds entered, and that the enrollment figure reflects the high rate of repetition between the first and second years of the Basic Cycle, as well as the number of new entrants. In 1974, 18,293 students were enrolled in the first year of the Basic Cycle, while in 1975, 15,118 were enrolled in the second year. Thus, at least 3,175 students from the 1974 first-year cohort did not enter the second year in 1975. The number not progressing would increase, of course, by the number of repeaters enrolled in the second year in 1975.

^{1/} Twice as many urban students as rural students finished primary school.

TABLE VII-15

SECONDARY EDUCATION COHORT FLOWS, 1954-1959

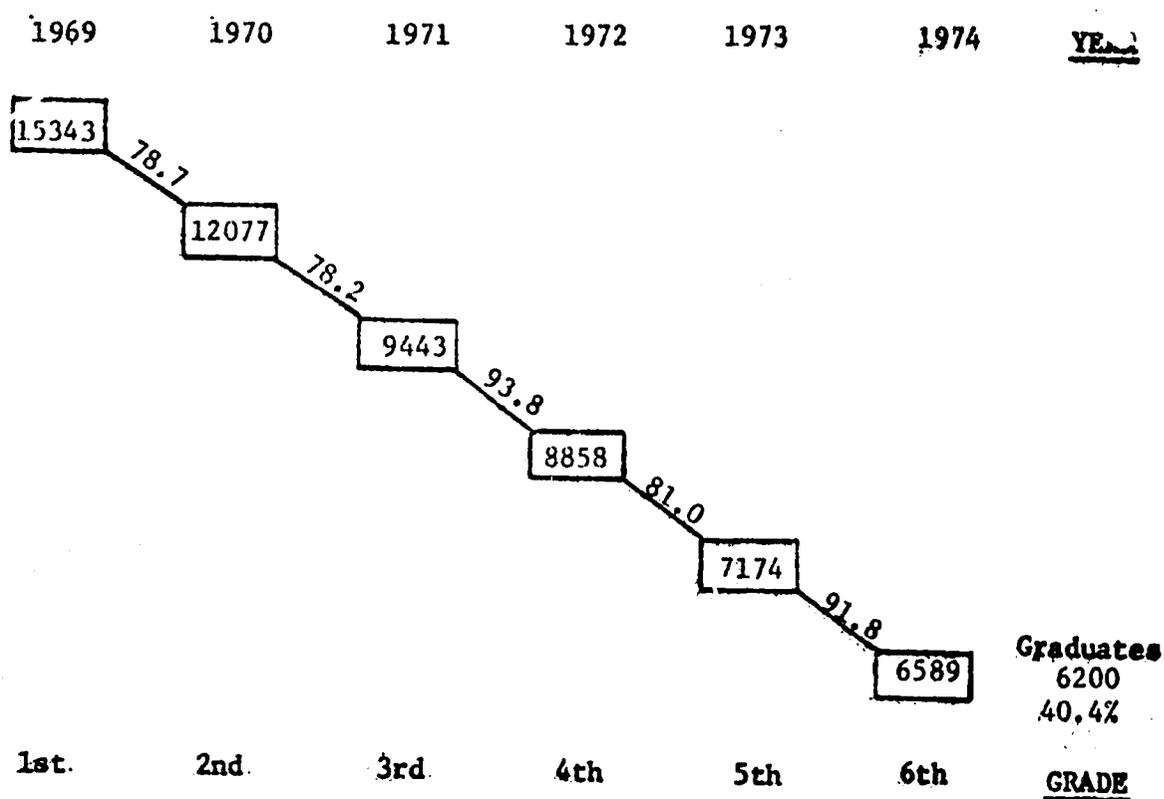


Probability of Promotion by Grade

<u>GRADE</u>	<u>PROBABILITY</u>
1st to 2nd	56.7%
2nd to 3rd	74.1%
3rd to 4th	79.0%
4th to 5th	93.9%
5th to 6th	85.3%

Source: Investigación sobre Rendimiento del Sistema Educativo, op.cit.

TABLE VII-16

SECONDARY EDUCATION COHORT FLOWS, 1969-1974Probability of Promotion by Grade

<u>GRADE</u>	<u>PROBABILITY</u>
1st to 2nd	78.7%
2nd to 3rd	78.2%
3rd to 4th	93.8%
4th to 5th	81.0%
5th to 6th	91.8%

Source: Investigación sobre Rendimiento del Sistema Educativo, op.cit.

SECTION VIII

THE FORMAL SYSTEM: CURRICULUM REFORM, MATERIALS PRODUCTION, AND USE OF EDUCATIONAL RADIO

This section is concerned with educational delivery in Paraguay; that is, the transmission of educational services. The curriculum defines what is taught, and thus determines the content of all educational activities. The production of materials represents the embodiment of the curriculum into specific packages for dissemination. And technologies such as educational radio can be used to transmit, or deliver, the curriculum, or content, to users of the system who otherwise might not be reached.

A. CURRICULUM REFORM

1. The New Primary Curriculum

The primary education system in Paraguay consists of two cycles, each with three grades. The programs in each cycle, along with the percentage distribution of time per day, are shown in Table VIII-1.

According to the curriculum reform law published in 1973, the specific goals of Paraguayan primary education include the promotion of cognitive and affective learning and the development of psychomotor skills. These same goals were set forth in the Educational Development Plan (1969-1980). The following objectives are stated, by area:

- Cognitive learning
 - a. ability to listen, speak, write, and read.
 - b. knowledge of facts about the national tradition and history.
 - c. interpretation and application of numbers and numerical relationships in concrete and rational ways.
 - d. acquisition of habits of observation of facts and phenomena of nature.
- Affective learning
 - a. acquisition of conventional social habits and attitudes, such as responsibility, friendship, respect, courtesy, honesty, cooperation, and solidarity.
 - b. active participation in family, school, and community life.

TABLE VIII-2

SCHEMATIC OVERVIEW OF THE OBJECTIVES AND PRIORITIES OF THE NEW CURRICULUM IN PARAGUAY, 1975

Learning Emphasis	Curriculum Area				Objective as Expressed by the New Education Code
	Social Life and Communication	Health and Work	Mathematics	Recreation and Manual Activities	
I. Cognitive Learning					
a. listening skills	x	x			a-d. use the basic Spanish vocabulary in its spontaneous and natural form.
b. speaking skills	x	x			e. know relevant facts of national history, honor and respect figures of country.
c. writing skills	x	x			f. develop a positive attitude toward mathematics by learning its practical value and by being able to correctly perform the four basic functions in order to solve everyday problems.
d. reading skills	x	x			g. acquire habits of observation of the facts and phenomena of nature.
e. historical facts	x			x	h. adopt good health practices through instruction in basic hygiene.
f. mathematic skill			x		i. see "m" and "n" below
g. ecological balance	x	x			j. create and use music, art, painting and modeling as mechanisms for enjoyment and expression.
b. personal health and hygiene	x	x			k. acquire and develop feelings which strengthen the Paraguayan family unit, such as fidelity, gratitude, and generosity.
i. vegetable gardening knowledge					l. acquire and develop skills and habits which permit free expression and initiate appreciation of the arts.
II. Affective Learning					m. acquire manual dexterity and develop simple work habits which honor manual labor associated with agriculture and forestry as sources of natural wealth.
j. appreciation of art and music	x				n. practice programmed recreational activities at each grade level.
k. social and cultural consciousness of the family	x				
l. healthier self-concept	x	x			
III. Psychomotor Skills					
m. basic manual dexterity skills		x			
n. physical fitness and body coordination		x			

The new curriculum grew out of USAID technical assistance in the late 60's and early 70's. It utilizes a multi-sensory approach, and emphasizes the fact that children learn in different ways, through different senses, and at different rates of speed. Individualized instruction is encouraged, as are practical learning activities which place children in "learning by doing" situations. The experiences are closely related to the everyday life of the children; for example, schools are encouraged to have small gardens in which children can apply agricultural knowledge and practice manual skills.

There are four corollaries to the new curriculum. First, before a school can initiate the curriculum, it must be authorized to do so; and the school director and teachers must have had approximately 2-1/2 months of training in theory and practice. Second, a rather intensive parent orientation program is required, to introduce new concepts, strategies, and programs. Third, a more comprehensive assessment of students is emphasized, as the curriculum recognizes differences in individual growth and achievement. Fourth, the new curriculum is integrally related to new textbook materials and innovative instructional practices that complement and extend goal statements, lesson plans, and physical facilities.

The assessment team, on field visits, found stark differences between schools using the new curriculum, and those using the old. In traditional settings, children sat in rows, segregated by sex. When the visitors entered the classroom the children were busy copying illustrations from the blackboard into their cuadernos. The teacher lectured, and then the children recited their lessons or read aloud, individually or in unison. There was little opportunity for group discussion. The children, conditioned to listen quietly and memorize well, were unable to openly interact. When the student who was reading stopped, he was asked to tell what the story said; and he started to repeat the text, word for word.

By contrast, in the new curriculum schools, boys and girls were grouped together, around tables. There were many wall charts, bulletin boards, and other visual materials in the classroom. Oral reading sessions were followed up with intensive group discussions, and the children seemed to respond spontaneously to questions. The range of learning activities was broad and varied, and they were arranged to complement the content in the textbooks. Teachers in the schools using the new curriculum were enthusiastic; and they consistently mentioned that the involvement of parents on a regular, participative basis was important and challenging to their work.

Table VIII-3 presents a comparative analysis of the old and the new curricula, and shows that the contrasts between the two approaches are significant.

The direct observation by the assessment team of the contrast between the new curriculum and the old allows two points to be made:

TABLE VIII-3

COMPARATIVE ANALYSIS OF THE OLD AND THE NEW CURRICULA IN PARAGUAY, 1976

Characteristics	Old	New	Comments
1. Program built around many curriculum areas; little integration of subject matter with learning theory.	X		1. The new curriculum is structured around three major subject matter areas: social life and communication; health and work; and mathematics. The old curriculum was built around six rigidly academic areas.
2. Highly structured, with instruction primarily through lecture technique, and oriented to rote memorization.	X		2. Program of studies in new curriculum calls for a highly interactive instructional environment, even as far as the classroom equipment is concerned. Old curriculum was primarily lecture-oriented.
3. Emphasis on learning by application.		X	3. One of the major emphases of the new curriculum is the focus on learning by application, through small gardening demonstration plots, etc.
4. Recognizes the multi-sensory nature of learning.		X	4. Much emphasis is given to affective and psychomotor learning in the new curriculum; in the old, nearly all of the teacher's guides emphasized only cognitive learning.
5. Emphasis on specification of content and programs; utilization of evaluation criteria (formative and summative); and identification of practical activities.		X	5. New curriculum guides are comprehensive, providing detailed guidelines for teachers in each of these areas.
6. Requires special teacher training or re-training.		X	6. All teachers and directors in schools implementing the new curriculum receive 2 1/2 months of special training.
7. Supported by complementary texts and instructional materials.		X	7. Texts have been produced for the first five grades. Production through the Basic Cycle of secondary will be completed with a new World Bank loan.
8. Student promotion based on pass/fail examinations.	X		8. In the old curriculum, evaluation of the performance of the system was based on student failure rates.
9. Requires collaborative participation of parents.		X	9. One of the main features of the implementation plan for the new curriculum is the encouragement of regular, active participation by parents to promote community support for the school.

- The new curriculum, when supported by complementary materials and by specially trained teachers, offers an entirely new and exciting experience for children, parents, and teachers. It fosters individualization, discourages student failure, and provides stimulating instructional techniques and learning activities.
- The traditional curriculum is failing to meet the basic education needs of most of the children. It is characterized by rote memorization; excessive lecturing by the teacher, and teacher-dominated activities; and insufficient numbers of poor quality instructional materials. In addition, the old curriculum is not relevant to the everyday lives of the children, especially in the rural areas.

To date, the new curriculum has only been implemented in some 300 schools, or approximately 10 percent of the total. It is presently reaching only 5 percent of the children, or only 24,000 of 475,000 enrolled at the primary level in 1976. This lag in implementation is closely related to the system's capacity to train or re-train a sufficient number of qualified teachers.

2. Secondary Education Curriculum

Like the primary level, secondary education in Paraguay is divided into two cycles. The new curriculum for the secondary system also represents a logical extension of the primary system.

According to the Educational Development Plan, the structure of secondary education is designed to fulfill two related objectives. One is an increase in relevance. The other, stated generally, has to do with making secondary education adequate as an end in itself, as something other than merely a path to higher education. To meet these objectives, the MOE has adopted an approach which combines academic and practical knowledge.

The Basic Cycle of the secondary level represents a continuation of the second cycle of primary school. Therefore, teaching time is allocated to such areas as social studies, natural sciences, and mathematics; health and physical education; and the instrumental subjects (i.e., Spanish and Guaraní). The Diversified Cycle includes two large areas, the bachillerato humanístico científico (liberal arts, or humanities), and the bachillerato técnico profesional (vocational tracks). As with the Basic Cycle, there is a core curriculum common to the liberal arts and vocational tracks, involving instrumental, scientific, humanistic, and practical areas. The subjects include languages, natural sciences, social studies, and physical education. Each of the three vocational areas has a "differential study

plan" which revolves around commercial, industrial, or agricultural subjects. Actual practical experience is emphasized by combining theoretical instruction with workshop practice.^{1/}

The establishment of Basic and Diversified Cycles, as well as the emphasis on practical training, is just getting underway in Paraguay, as in many other countries in Latin America. At the present time, eleven secondary schools are in the initial stages of implementing the new curriculum. The third year of the Basic Cycle will be offered in these schools in 1977. The new curriculum will continue to be implemented on a year-by-year basis in a small number of schools; simultaneously, it will be evaluated to determine its effectiveness.

The new curriculum is designed to expand the secondary level beyond its present highly academic orientation; yet the test of the effectiveness of the new curricular structure depends only partially on quality improvement, greater scope, or wider selection of subject areas. Of equal importance is the demand from potential users elicited by the different areas of the secondary level. This is a function of the general system of incentives, including economic rewards and social status, that society offers.

Another area of concern regarding the new secondary curriculum is that at the current rate of progress it would take over ten years to implement it throughout the system. In addition, it is not clear if adequate awareness exists of the associated higher costs of providing better instruction. Finally, even though the idea of flexibility runs through the curriculum plan, it is possible to argue that flexibility essentially consists of an increased number of options in the Diversified Cycle, with no accompanying flexibility in individual offerings, inter-track mobility, or approach to the subject matter.

3. Conclusions and Recommendations

a. Primary Level

The following recommendations relating to the primary curriculum in Paraguay follow from the above analysis. Each takes into account the implications it may have on other components of the system.

1. Expansion of the New Curriculum

The MOE has given high priority to the implementation of the new curriculum in those rural and urban schools where the traditional curriculum is still in use. From all the data the sector assessment team has studied, and based on observations made in the field, this is a most

^{1/} For additional information on vocational education in Paraguay, see Annex F.

critical need. The implications of this recommendation are extensive, however. For example, there will be an immediate need to re-train some 11,500 teachers in the content, methodology, and organization of the new curriculum. In addition, the production and distribution capabilities of the Office of Textbook Production will have to be upgraded, so that textbooks will be available to all children. The supervisory system must be improved and expanded, to increase its ability to monitor the use of the curriculum and to provide in-service training and regular assistance to the teachers at the local level. Finally, a comprehensive feedback and evaluation system will be required, in order to measure the impact of the new curriculum at all levels of the system.

Interviews by the assessment team at the MOE and in the field indicated that teacher re-training is the most immediately critical need. At present, the Instituto Superior de Educación (ISE) is responsible for all teacher re-training for the new curriculum. Teachers are given a stipend (beca, which includes housing allowances and salary) to attend ISE's program in Asunción for 2-1/2 months. Approximately 550 teachers attend each year. Taking teacher retirement into consideration, as well as the fact that new teachers graduating from the teacher training programs (Formación Docente) are trained for the new curriculum, it can be estimated that between 8,000 and 9,000 teachers must be re-trained if the curriculum is to be implemented on a nationwide basis. Thus, at the present rate it will take nearly fifteen years to reach all of the teachers, if the infrastructure of the system is not improved.^{1/} This problem was discussed at length with key officials in the MOE, and consensus was reached on recommendations and strategies for achievement.

Through the Formación Docente system, an in-service professional renewal program should be developed to decentralize the function of teacher re-training. At the same time, such a program could extend resources to local schools and teachers on a continuous basis. An in-service program of this kind would meet the need for teacher education, as expressed by the Minister of Education, the Directors of the Department of Primary Education and Teacher Training, and field-level supervisors and teachers.

An intensive teacher training program is needed, in which Regional Education Center staff and Formación Docente professionals would be trained to serve as facilitators for implementing the new curriculum at the local level. Some of this training would consist of the kind now conducted at ISE, but most would be designed to improve the trainer's ability to work with teachers, students, and parents on the basic problems of instructional/curriculum development. The emphasis would move from a one-time, 2-1/2 month training experience to a continuing program to effect organizational development, innovation, and change. In the organizational design that would eventually emerge, teams of highly trained teachers would operate

^{1/} See Section IX for an analysis of teacher training and the Regional Education Centers.

out of the Formación Docente institutes throughout the country. These training teams, working with a national-level, teacher-training corps from ISE, would be responsible for implementing the professional renewal programs at the regional level.

These teacher-training teams would not operate out of their institutes alone; they would also use mobile units to visit teachers and communities in remote rural areas, in order to work with them in their particular social/cultural context. This kind of training goes beyond the concept of re-training as currently practiced in Paraguay. It requires the adaptation of the overall curriculum so that it will relate to the daily lives of the rural teachers and students.

The teams should be staffed by trained people who are familiar with such areas and issues as bilingual education; scarcity of materials and resources; the need for relevancy, particularly in predominantly rural areas; tradition and culture, and the ways in which they relate to implementation of the new curriculum; and the system-wide organizational orientation to diagnosis, prescription, application, and evaluation, as these components relate to organizational change.

2. Distribution of Textbooks and Materials

For the new curriculum to be implemented effectively throughout Paraguay, it will be necessary to provide schools and teachers with more and better instructional materials. The need for textbooks is particularly critical, although there is also a shortage of materials such as pictures, tapes, films, etc. Many of these could be provided through the Regional Education Centers, and by mobile instructional laboratories. (See Part B of this Section.)

3. Construction and Repair of Classrooms

As efficiency and effectiveness are improved, the education system will need more and better classrooms in both the rural and urban areas. The World Bank has authorized a \$12 million loan for this purpose (see Annex A). USAID could complement this effort by providing assistance in the area of maintenance and repair, as discussed in Section X.

b. Secondary Level

Curriculum reform at the secondary level is just getting underway. At the present time, emphasis on advanced secondary education other than in the humanities must be considered only an intention, not a reality. An overwhelming proportion of students are enrolled in humanities.

The drop-out rate in the secondary system has improved since 1959, but the completion rate of students who begin secondary school is just over 40 percent; thus, wastage in the system is high. Over half of those who enter secondary school will not complete the last year of the Diversified Cycle.

Better coordination is required among the programs at the primary, secondary, university, and technical/vocational levels. If graduates from programs other than humanities cannot be accepted at the universities, the problem of students wanting to attend only a preparatory program will continue. There must be a consensus about institutional roles in preparing Paraguayan youth, if technical/vocational institutes are to be viewed as more than poor substitutes for, or competition with, the new secondary curriculum. Any planning effort for the future requires a clear definition of expectations for Paraguayan secondary schools and a demarcation of roles for each. These should be based on plans which establish the numbers of students in each area; how many students in the first year of Basic Cycle should be expected to graduate; etc. Coordination between the primary and secondary systems is also necessary in the planning process.

At this time, evaluation of secondary school output appears to be restricted to the number of students who pass through the system. Qualitative data are also necessary to assess the effectiveness of the system, including information on achievements; student aspirations; attitudes toward school and learning processes; occupational intentions; socio-economic status; and family social dynamics.

B. MATERIALS PRODUCTION AND DISTRIBUTION

Textbooks and materials constitute the means by which the educational message is transmitted and generalized. However enlightened a program of studies may be, its ultimate success in terms of acceptance and coverage depends on the degree to which the learning content is transferred to the users. The so-called traditional curricula are often discredited because, the argument runs, teachers use a dictatorial approach in the classroom and students are required to memorize their lessons. Yet these two practices, however pernicious, may be the logical result of a near total lack of instructional materials. As the preceding analysis shows, the effective implementation of the new curriculum in Paraguay requires the availability of instructional materials.

1. Background and Current Activities

The present-day Department of Educational Materials started in 1955, under SCIDE auspices, as the Curriculum Center. Its functions at the time were limited to the production of auxiliary materials (e.g., specialized pamphlets and guides), not including the production of textbooks, which was the responsibility of private publishers. Upon SCIDE's termination and the initiation of the first Alliance for Progress project (the Rural Education Development Project, or REDP) in 1963, the Center became fully absorbed into the MOE's structure and was aligned with what was then the Department of Pedagogical Investigations.

The implementation of REDP did not contemplate the production of texts. However, a precedent was set, in that attention became focused on the rural areas and the more pressing problems of rural education, including the almost total lack of textbooks in these areas. By 1968, it became

apparent that the prevailing system of textbook production, based as it was on private initiative, could not meet the demand. A decision was made to give the MOE the capability to enter the area of textbook production for the rural areas of the system, leaving the Asunción market in the hands of private contractors. The Department of Educational Materials was created and it was charged with the "elaboration, production, impression, and distribution of education materials, preferably textbooks."

To date the production of texts has been financed by foreign assistance. Under the first AID education loan, grant funds were provided to produce sets of texts for the first and second grades (180,000 copies of 3 texts were produced). Later, under its first education project, the World Bank financed the production of sets for the third and fourth grades (approximately 300,000 copies of 4 texts). Currently, under the third education project, the World Bank is financing the production of texts for the fifth and sixth grades (5 texts in each set with a total planned production of 300,000 books). Teacher guides for each text are also produced to accompany the materials.

As of now the books produced and released, from the first to the fourth grades, have gone through a first edition, with the exception of those for the first grade, which have gone through a second edition. The Department has also produced a number of posters, charts, and pamphlets on special topics (mostly on vocational education). Medium-range plans include the production of texts through the Basic Cycle of secondary school.

2. Production Processes

The Department of Educational Materials carries out its work on the basis of inputs received from the Departments of Curriculum, Teacher Training, and Primary Education. It is, therefore, an executing unit, as opposed to a technical entity. The curriculum plan, drawn up by the Curriculum Department, sets the guidelines for material production. The educational content is defined and grade-specific programs are specified by subject areas, scope, depth, and sequence. Books are then designed, with special attention given to their structure, methodology, and content, all of which must be based on the pedagogical guidelines set down by the new curriculum. The texts are written by individual authors who are educators with at least ten years of experience in public or private schools.

Texts are complemented by teaching guides which are as detailed as possible. The proofs of texts are evaluated by technicians from the Departments of Curriculum, Teacher Training, and Primary Education. In each case, attention is expected to be paid to content and structure, composition and sequence, and didactic value. The evaluations carried out thus far, it is reported, have been unduly uncritical and with little substantial feedback. This situation indicates a weakness in the overall mechanism of analysis prior to publication and release.

3. Distribution and Coverage

The limitations of the current situation regarding materials distribution and user coverage are best illustrated by the fact that the output of the Department of Educational Materials only meets approximately 30 percent of the estimated potential demand. This reveals the problem of distribution, but it also indicates the magnitude of the exogenous constraints which impinge on the effectiveness of the system to reach a wider audience. The first problem can be rectified directly by educational policy. The second problem, on the other hand, is of a structural nature, and can only be addressed in the context of cultural evolution and higher living standards of the system's users.

The trade-off functions between different, but related, constraints are clearly complicated ones. The nature of the constraints, however, is determined by (a) the lack of resources in the Department; (b) the weak distribution mechanism; and (c) the inability of the users (families in this case) to finance the texts and materials.

The constraints faced by the Department and the limited value of currently available solutions to the problem of delivery are such that no satisfactory level of performance regarding coverage may be expected in the medium term.

To the Department, the problem is two-sided. It must deliver the maximum number of texts and minimize the losses incurred through inefficiency in a weak distribution system. The issues range from the substantial to the mundane. Textbooks cannot be wholly subsidized forever because of lack of financial resources and the ever-increasing commitment to production. In the past, under the AID loan covenant, the arrangement stipulated that 20 percent of the books should be handed over free of charge to the neediest students. The other 80 percent should be rented at the nominal fee of \$10 per year, and the proceeds should be used to generate a revolving fund to finance more production. But deciding who were the most deserving students turned out to be an impossible task, and the losses incurred in the rental scheme made the program essentially a "give-away." As a result of these problems, the rental scheme has been phased out. Texts are now sold at cost; prices range from \$30 for the first-grade reading book to \$260 for the fourth-grade math book. While prices increase in higher grades, they still reflect a measure of subsidy which does not take into account the indirect costs of production.

The distribution mechanism works through the local offices of the revenue service: in 1976, 222,000 texts worth \$36.6 million were shipped to 163 towns. The books did not reach the rural areas with dispersed populations which are located some distance from the distribution points. The chain is further weakened because of lax controls over the cash flow accumulated from sales. At the school level, the teachers are in charge of collecting the money. They often keep it and eventually find themselves saddled with a substantial payment due. This problem is not isolated, and thus deserves to be mentioned.

Finally, since the Department's output can only meet 30 percent of the demand, private enterprise fills part of the gap, particularly in Asunción. It is estimated that the public and private sources jointly meet between 50 and 60 percent of the demand. The remaining students are not reached, although they might be through a more carefully designed book-borrowing program. (Importation of primary texts ceased about two years ago.) It is also not clear why the Department does not produce for the Asunción market, which is easily accessible. Business pressures and lack of production capacity may explain this. On the other hand, the cash flow could be improved significantly if the market were extended to Asunción.

The second set of constraints is, as noted above, of a structural nature. The \$36.6 million stock of books released in 1976 produced a cash flow of only \$500,000. This surely reflects the inadequacy of the distribution mechanism. Yet it should also be noted that parents are only required to purchase the reading textbooks; the other three or four are optional, which means they are not purchased. In not a few cases, the costs of materials may put a strain on the family budget, particularly if more than one child in the family is attending school.^{1/} In addition, it is believed that teachers themselves are not sufficiently enthusiastic and receptive to the idea of the students using textbooks; this may also put a damper on the family's incentive to make the required outlays.

4. Conclusions: Evaluation and Prospects

Given the importance of materials availability to the implementation of the new curriculum, the problems described above have implications reaching beyond the needs and constraints faced by the Department of Educational Materials. Without belittling the efforts that have gone into the design of the new curriculum or those displayed by the Department, it is a fact that at the current stage of development of the strategy, emphasis has been almost exclusively placed on the technical aspects of curriculum design, with insufficient attention paid to how the strategies can be generalized. There is excessive dispersion of effort as each Department concentrates on its own narrowly conceived tasks rather than on the overriding issue of how the strategy of curriculum reform, which necessitates the cooperation and active coordination of a number of Departments, can best be accomplished.

Despite the fact that some of the texts have been used for a number of years and that they embody the new curriculum, no evaluation of their impact on learning has been carried out. At the present time, the Educational Materials Department is undertaking an evaluation of the structural design, methodology, and content of the texts. This is expected to be ready by the end of 1978. The evaluation, however, focuses on how well the texts are adapted to the new curriculum. The more important question of their impact is not being asked.

^{1/} See Sections XII and XIV.

... evaluation effort in itself demonstrates the dispersion of effort alluded to earlier. The Department is carrying out the evaluation separately, without support from other specialized units such as Planning, Curriculum, or Teacher Training. Simply put, it does not appear, at the present moment, that the Department has the capability to carry out these functions.

The source of the limitations which have been noted in the preceding analysis is a generalized lack of human and financial resources, as well as a less-than-optimal utilization of existing ones. The Department gives the impression of being located in a "residual" category. Its physical and production facilities are inadequate. The flow of communication with other Departments is not comprehensive enough, particularly in the phase of implementation; and there is no detailed strategy for implanting the new curriculum.

These issues can be addressed by educational policy. In this particular area, the goal to be accomplished should be how the functions of the Department can be correlated and kept in tandem with those of the Departments of Curriculum and Teacher Training to accomplish the curriculum reform and generalize the use of textbooks and materials. Unless this is accomplished, it is unlikely that a meaningful change in the current situation, where traditional practices prevail in the classroom, can take place.

C. THE USE OF EDUCATIONAL RADIO

To extend the current coverage of educational services, the MOE has chosen a delivery system based on the use of educational radio. At present, only 70 percent of the potential number of rural students have access to a school; moreover, the average rural child who does attend school remains for only 3.21 years. Thus, radio is also seen as a means of providing coverage to individuals who have left school, but who may wish to reinforce or extend their level of learning.

The official objectives of educational radio are to provide basic primary education to a representative proportion of the rural population; to experiment with innovative approaches to educational delivery; and to institutionalize the mechanisms to make rural radio programs feasible and effective. Use of radio is made more attractive because its costs are generally believed to be low, relative to those associated with building, staffing, and equipping additional schools. If equivalent instruction is provided, educational radio would then be more cost-effective than setting up new schools. Any place within a community where groups can gather to listen to the programs and participate in follow-on work becomes a "classroom." The organization of such groups for a common purpose has an intrinsic potential for mobilizing community resources.

Unlike traditional classes, radio broadcasts for adults and out-of-school youth need not require the participants to cease work-related activities for the major portion of each work day; programming can be timed

to coincide with the least economically productive times of day. Also, the use of radio can be particularly appropriate in those places where the dispersion of the population impedes the delivery of educational services through the schools.

1. Current Status of the Rural Radio Project

The Rural Radio Project, currently in the initial stages of development, is a pilot project; should it prove successful, it could be generalized through the establishment of a national educational broadcasting service. The pilot phase, financed primarily through USAID grant funds, will be carried out in the Department of Caaguazú. It is anticipated that at the end of three years, 70 listening centers will be established, reaching approximately 1,500 students. Lessons will be offered for one hour each day, five days per week, in three areas. Mathematics, communications, and social studies will each comprise a 20-minute segment of the one-hour program.

The target population includes those with at least two years of schooling, but who were not enrolled in school the previous year. Two large groups have been specifically identified: adults, and young people between 14 and 18 years of age. While it is planned that instruction will eventually be offered at all primary levels beyond the second grade, initially only the third-grade program will be available.

During this first year of the project, preliminary plans are being made and initial demonstrations are being conducted, in order to draw up an implementation plan for the later, operational phase. Topics receiving special attention include program content and curriculum design; personnel training; the production of a baseline study; the organization of a continuous planning, research, and evaluation mechanism; and the establishment of a recording studio. Currently, initial broadcasts are about to begin on an experimental, one-day-per-week basis, to gauge audience reaction in four pre-selected communities in Caaguazú.

2. Constraints and Prospects

In order to anticipate and thus avoid potential obstacles to successful project implementation, required inputs and anticipated activities must be examined. These include:

- a. The identification and assessment of learning needs, which are derived from a given socio-economic profile of the population

The collection of baseline data is a critical step in planning and implementing a project of this nature. The initial findings of a commissioned survey are now available to program personnel, although the tabulations represent a maze of new data which are not organized in any systematic fashion and therefore do not lend themselves to meaningful

interpretation. Project design necessitates that the information should be interpreted, processed, and analyzed. It is not enough to simply report the distribution of occupations, the percentage of persons in school, and other such data without bearing in mind the reasons for collecting the information or identifying its possible utility to the particular purpose at hand.

Given the time frame for project implementation, it appears that this data component is not sufficiently developed to help planning activities to the maximum extent. The information already collected should be processed in such a way as to increase its utility during subsequent implementation phases.

- b. The definition of program content, based on the identified learning needs, and the design of a curricula, including decisions on subject coverage, content, depth, and sequence

The definition of program content assumes knowledge of what can be done through the radio, which is a critical assumption; it is qualitatively very different for a teacher to stand in front of a classroom than it is for a broadcaster to tape a lesson. The lack of immediate student/teacher interaction introduces an element of rigidity which can be partly solved by the use of group monitors.

The persons in charge of the radio education program report that continuous consultations between the Departments of Curriculum and Tele-Education are taking place. As a result of these efforts, a radio curriculum is being designed, based on the didactic and pedagogical principles of the new primary curriculum. The intent is the evolution of an educational message which combines instructional aspects of third and fourth grades in the first level, and fifth and sixth grades in the second level. More generally, a "refined basic" level of instruction is sought.

Decisions on other, related issues must go hand-in-hand with content and message design. For example, the concept of equivalent education has not been adequately defined. It is not clear, at this point, what is meant by equivalency in this context, nor what it entails for lesson design. The definition of such criteria is important to the effectiveness of the program, as well as to objective measurement of its impact.

- c. The training of program personnel to carry out such program-related activities as:

- deciding sequence of contents
- writing scripts
- broadcasting lessons and materials
- producing related support materials

A high level of technical sophistication among program personnel is required in an activity of this nature. Moreover, training ought to be accompanied by practical experience. For these reasons, the project includes an ambitious training component, although it is an ongoing activity and has not yet been evaluated. The technical assistance provided includes a fairly continuous process of vesting increasing responsibility and technical initiative to Department counterparts. It is anticipated that the transfer of information and expertise should encompass both training for program design and formulation, and organization for program delivery. In other words, it is an on-the-job training program, and its progress should be monitored for the duration of the project.

d. The organization of the delivery system, including:

- setting up the recording studio.
- establishing the radio network.
- organizing the listening posts.
- identifying and training the monitors or facilitators.
- producing and distributing the related support materials.
- promoting and maintaining participation.

The complexity of instituting an effective delivery system cannot be under-estimated. Such activities as the identification, selection, and training of monitors are laborious and complicated. Constant liaison must be maintained with them throughout the implementation of the project. This entails a significant supervision effort; monitors have to be trained not only in the techniques of managing listening posts, but also in procedures for data handling and reporting. They are responsible for some of the most basic forms of performance evaluation. It has become apparent that their services cannot be obtained on a voluntary basis, contrary to assumptions made in preliminary planning documents.

The organization of listening posts is to a great extent the responsibility of the project staff, while the management of the centers is essentially a function of the monitors. As this is a pilot project, it will be necessary to develop guidelines for establishing listening posts. These should include some criteria of optimal use, based on the profile of ideal groups, or rather a typology of groups. These criteria need not be decided a priori; rather, they may be determined through experimentation with different groups, by keeping careful histories of group characteristics, behavior, and performance.

e. The evaluation of the project, which should be aimed at establishing what the perceived value-added of the project might be. This includes:

- arrangement of baseline data to serve anticipated evaluation criteria.
- specification of evaluation criteria, which may include:
 1. learning achievement, perhaps measured through standardized tests.
 2. user perception surveys.
 3. cost-effectiveness analysis.
 4. multiplier effect (i.e., community involvement, listening participation outside the learning centers).
 5. general impact: demand and participation rates, renewed participation in school, variation in socio-economic indicators.

The crucial role that evaluation plays is also related to the experimental nature of the project. Evaluation procedures should be developed for monitoring organization, delivery, and implementation processes. Each of these areas should be examined so that, if the project is generalized, records will exist of the lessons that are learned, of which elements or combination of elements work well, and of how the scale of the project can be increased with a more than reasonable chance of success. It is clear that as the scope of educational services is increased, the possible permutations of likely problems and difficulties increase at least proportionately. More training and/or re-training will have to be provided; the system may become less selective; and listening posts will have to be organized in more inaccessible or deprived areas. From a longitudinal perspective, substantive changes on content and approaches may have to take place. These complications tax the capacity of any planning and organization system to respond adequately to additional requirements and needs.

SECTION IX

THE FORMAL SYSTEM: TEACHER TRAINING AND THE REGIONAL EDUCATION CENTERS

A. TEACHER TRAINING AND THE EDUCATIONAL REFORM

The Paraguayan educational reform is based on a complete revision of the curriculum. Teachers constitute one of the fundamental components in the educational plan; they are largely responsible for carrying out and institutionalizing the reform. This role is only logical and expected: in the final analysis, trained and knowledgeable teachers, instilled with the proper attitudes toward teaching, will largely determine whether or not the reform is successful.

1. Current Distribution of Teacher Qualifications

The current disparity in teacher qualifications is an important constraint which limits the capacity of the educational system to be reshaped along more dynamic and efficient lines. The ultimate test of the effectiveness of the reform will come when the teacher is in the classroom, teaching different subjects or the same subjects in a different manner, trying at the same time to elicit animated response and active participation from the students.

The fact that a teacher is certified is no guarantee that he or she is necessarily more qualified. This is because the content and orientation of traditional teacher training tends to emphasize rigid and dogmatic attitudes, formats, and approaches to instruction. Inadequate or qualitatively poor teacher training can also result in a limited, static knowledge of the subject matter.

If teaching techniques are improvised, as they often are when teachers have gone through a limited period of training, a haphazard performance in the classroom is also likely to be the result. Lego (uncertified) teachers are even more limited in their knowledge of subject matter and teaching techniques than are their traditionally-trained counterparts. As a result, they tend to be assigned to areas where the learning environment is already adverse, e.g., because of the lower socio-economic background of the students.

The lack of certification is most common with teachers in the rural areas. As shown in Table IX-1, two-thirds of the rural teachers in 1975 were in the first category, while one-fifth were in the lego categories.^{1/}

^{1/} The category system is organized in ascending order from categories 7 to 1. Lego teachers are located in categories 4 to 7, while placement in categories 1 to 3 is determined by certification and length of service. This system is currently being replaced by an escalafón which was established in 1973. The escalafón contemplates three classes (A, B, and C) of certified teachers and one class (D) of non-certified teachers. The classes are divided into groups, and remuneration is determined by location in classes and groups.

TABLE IX-1

NUMBER AND DISTRIBUTION OF TEACHERS BY TEACHING
CATEGORIES IN URBAN AND RURAL AREAS,
1968-1975

Year	Teaching Categories							
	Total	1st	2nd	3rd	4th	5th	6th	7th
<u>1968</u>								
Total	12,722	8,569	153	810	1,332	306	299	1,253
%		67.4	1.2	6.4	10.5	2.4	2.4	9.8
Urban	6,604	5,562	118	482	253	52	35	102
%		84.2	1.8	7.3	3.8	.8	.5	1.5
Rural	6,168	3,007	35	328	1,079	254	264	1,151
%		48.8	.6	5.3	17.5	4.1	4.3	18.7
<u>1975</u>								
Total	15,398	12,309	63	355	664	148	1,479	380
%		79.9	.4	2.3	4.3	1.0	9.6	2.5
Urban	6,702	6,324	36	174	86	11	56	15
%		94.4	.5	2.6	1.3	.2	.8	.2
Rural	8,696	5,985	27	181	578	137	1,423	365
%		68.8	.3	2.1	6.6	1.6	16.4	4.2

Source: MOE Department of Planning.

By contrast, nearly all of the urban teachers had some kind of certification. Significant progress has been made in the rural areas, however. From 1968 to 1975, the number of rural teachers increased at an annual rate of 4.49 percent, while the number of those who were placed in the first category increased at a rate of 8.98 percent. The proportion of rural teachers in the first category of the scale increased from a little less than one-half in 1968, to a little more than three-fourths in 1975.

The variation in certification by Departments should also be noted. In Asunción, for instance, 100 percent of the teachers, all classified as urban, are certified; while in Canendiyú, the proportion is 40 percent. In the rural areas, the disparity is even greater. In Alto Paraná, 29 percent of rural teachers are certified; and in Concepción, a relatively populous area with 700 rural teachers, the proportion is 36 percent.

2. The Teacher Education Program

The preceding observations should be interpreted in the light of current policy considerations. The training received by the vast majority of certified teachers is under the old program of studies, while the needs of the educational reform can only be fulfilled under the new plan.

Essentially, the new plan adds additional years of study and specialization, with a full-time training load, and seeks to impart a thorough knowledge of the new curriculum to the teachers. Under the old plan, those who wished to become primary teachers studied for three years beyond the Basic Cycle for a bachillerato en enseñanza de primaria. The new plan adds two additional post-bachillerato years for preparing primary teachers. Two more years, after completion of the primary teacher training cycle, will be required for preparation as a secondary school teacher. In this way, all teaching candidates must go through the two-year primary training program. Those who wish to teach in the secondary schools must take the secondary teacher training program after completing the primary course. The intent is to impart to all teachers a common core of knowledge and experience.

The study plan for the primary training program lasts two years, or four semesters, and is designed to produce an activity-oriented teacher who is thoroughly familiar with the concept and content of the new curriculum. The following are required:^{1/}

- 120 hours of philosophy of education, sociology of education, history of education, and pedagogy.
- 600 hours in content and programs of primary study plans.

^{1/} MOE, Sistema de Formación Docente, Asunción, 1973.

- 300 hours of practice teaching.
- 90 hours of general teaching methods.
- 120 hours of Guaraní.
- 180 hours of special teaching methods.
- 90 hours of evaluation, guidance, and educational administration.

The secondary teacher training program is currently underway only at the Instituto Superior de Educación (ISE). In its present format it offers four semesters of courses in the educational sciences; mathematics; language and literature; social studies; physical education; physics and chemistry; music; and professional training and technical education. The two-year program will also include Paraguayan sociology, practice teaching, psychology, evaluation, comparative education, guidance, and educational administration.^{1/}

a. Structure of Teaching Training

The teacher training program is currently carried out by three institutions: the Department of Teacher Training of the MOE, the Instituto Superior de Educación (ISE), and the Department of the Regional Education Centers (REC's).

The Department of Teacher Training has responsibility for directing and supervising the programs of "training, specialization, and in-service training of the teaching personnel in the country." In theory, this includes the management of the teacher training programs of ISE, the REC's, and five other Centros de Formación Docente, two of which are located in Asuncion, with the others in San Lorenzo, Eusebio Ayala, and Paraguari.

In practice, the scope of action of the Department is limited to the supervision of the programs carried out by the Centros de Formación Docente. The Department, which does not carry out any administrative functions, essentially monitors compliance with the new program by the centers.

The REC's and ISE are autonomous; they also carry out specialized functions. The REC model (which will be examined in detail later in this section), is comprehensive in that, in addition to teacher training, it has other elements such as pre-primary instruction, Basic and Diversified Cycle programs, and community outreach activities. ISE, for its part, is the pivotal institution in the structure of teacher training. As such, it deserves more detailed treatment.

^{1/} Ibid.

b. The Instituto Superior de Educación (ISE)

ISE was set up by law decree No. 31003 of January 16, 1968. Its objectives are many, including teacher and supervisor training for primary, secondary, and special areas; in-service training for teachers already employed at these levels; pedagogic research; and the development of new teaching materials and experimental programs in education. Since 1975 the Institute has been located in new and ample quarters outside of Asunción.

ISE is governed by a Board of Directors made up of heads of the Departments of Teacher Training, Primary and Secondary Education, Regional Centers, and Educational Planning. The Department of Administrative Services and the faculty of ISE are also represented. The Board is responsible for supervising administration and management, writing the annual budget, approving the academic programs, and recommending new programs to be undertaken.

In line with its objectives, ISE offers courses in training, specialization, professionalization, and special topics. Specialization courses are offered for primary teachers, school principals, and supervisors and teachers from the Centros de Formación Docente who wish to develop skills in guidance, evaluation, special education, supervision, and educational administration. Professionalization courses are available to secondary school principals and uncertified primary teachers to enable them to become proficient in the new teaching methods. Special courses are offered on a needs-served basis and include such areas as administration of the new curriculum, library sciences, educational research, and planning and administration.

In the current year, 492 students are enrolled at ISE, including 242 primary school teachers, 43 secondary school teachers, 44 teachers of vocational training, and 165 others who are in the capacitación program. Additional courses are offered for 160 primary school teachers and principals who will be working in the schools set up under the third World Bank project; for 50 teachers from the schools around Asunción; and for 50 mathematics and science teachers who will work in the new vocational schools that will be established under the first World Bank project.

The enrollment at ISE has ranged from 161 in 1969, to 1,500 in 1975, when the new facilities were opened; it declined slightly in 1976, to 1,144. These figures, as well as the variety of program offerings at ISE, demonstrate the dominant role that this institution plays in the area of teacher training in Paraguay. The directors of the Departments of Teacher Training and Regional Centers serve on the Board of Directors, and the meetings of the Board take place on a weekly basis. This provides the opportunity for constant coordination among Departments on a formal and informal basis.

On the other hand, given the current need for re-training of the teaching force (approximately 11,500 teachers must be re-trained), it appears that the present impact of ISE, as well as of the other teacher training programs, is not up to the task that needs to be accomplished if the reform is to be a success. Altogether some 600 teachers are being re-trained in any given year, which means it will take between 10 and 15 years, discounting for natural attrition, to reach the entire teaching force. This is a major constraint to timely implementation of the reform.

3. Current Issues and Constraints

Re-training is thus a basic problem. The complexity of the task cannot be underestimated, not only because of the numbers involved, but also because it is simply not easy to accomplish behavioral and attitudinal change on the part of teachers who have traditionally used a different approach in the classroom.

Some contrasts can illustrate this point. The new scheme requires two additional years of full-time training. Newly trained teachers currently come out of model institutions with good facilities, sufficient inputs, and intellectually stimulating atmospheres. By definition, teacher candidates seldom come from the rural areas (they all must have bachillerato degrees, and there are no rural secondary schools); yet many of them will be assigned to rural schools. A good number must experience a letdown when they effect the transition to the poorly equipped, inadequately housed rural school. It is not surprising that under these circumstances, the initial impetus and idealism can be lost, or severely impaired.

For the majority of practicing teachers who need to be re-trained, the situation is somewhat different. Habits such as lecturing to the class, requiring memorization, evaluating through examinations, and following the same format year in and year out, are often easily acquired, particularly the longer the experience under conditions of deprivation; but they are not easily lost. As of now, no evaluation has been carried out of the impact of teacher in-service training on behavioral change. Such an undertaking, which can be accomplished through the collection of baseline data and tracer studies, could provide useful information for planning the length and content of future training courses.

Under ideal conditions the different elements, including institutional and policy components, that bear on the determination of better teaching quality should constitute a smooth working system where the different inputs dovetail and complement each other. The Curriculum Department should provide basic and comprehensive guidelines to allow the Teacher Training Department to frame its own programs. As the implementation of the new curriculum necessitates the availability of materials and the design and equipment of adequate physical facilities, the corresponding departments should make those decisions which complement the system's efforts. The Primary and Secondary Education Departments should also be given clear guidelines so that they can plan their programs and operations for any

year. Such guidelines would include detailed implementation plans for undertaking the programs of construction, equipment, teacher assignment, and textbook production and distribution. Costing out the plan would allow measurements to be made of the extent to which the proposed actions are economically feasible or optimal.

This kind of coordination does not exist; and the coordination that does exist is reflected more through intent than through action. Extensive, in-depth interviews with officials of the technical and executive departments involved in the strategy revealed that, as one of them put it, the reform is undergoing a "small great crisis." The initial sense of purpose seems to have been lost. Some blame this on unrealistic objectives and expectations as well as on weak planning, although it may also be the result of current complications arising from the steady falling away from targets, and the concomitant policy changes that must be made, without appearing to retreat from the original goals.

4. Recommendations

The preceding analysis indicates that two areas deserve special attention: planning and management of the training strategy, and acceleration of the re-training effort.

a. Planning and Management

Planning and management, and the necessary information and evaluation components, should become an integral part of the teacher training strategy, to monitor progress and to detect problems related to implementation. Planning consists of more than simply writing down a vague statement of intentions or producing an annual progress report. Information is required, for one thing. From the specification of objectives, necessary inputs can be identified and detailed. Annual or biannual targets capable of objective measurement can be adopted, and a continuous evaluation mechanism can be established. However, sufficient flexibility and realism must be built into the targets, so that excessive political vulnerability can be avoided.

b. Acceleration of the Re-training Effort

Priority should be given to the establishment of a decentralized, in-service program to provide teacher re-training in the use of the new curriculum. This program would be a separate institutional program from the pre-service training program.

If the new curriculum is going to reach a majority of students within a reasonable period of time, a broader approach to teacher re-training must be taken, as the capacity of ISE is limited. The system must develop institutional capability for re-training teachers in the Regional Education Centers (REC's) and in the institutes for teacher training. Preliminary requirements exist, however.

- Materials Acquisition. The institutes and the REC's must improve considerably their instructional and library materials, and their system of acquisition and distribution. The entire array of low-level media and instructional aids should be studied, and those materials which seem most appropriate should be purchased and distributed to the centers and the institutes. Teachers as much as other professionals need access to proper equipment and materials of good quality. In this case, they require multi-media resources, to effectively help children to learn.
- Instructional Development Teams. Concomitant with materials acquisition, the centers and institutes should establish a special corps of teachers to reach others in need of re-training. Contrary to current practice, most of the re-training could be done in the evenings and on weekends, since the teachers who participate will be teaching full time.
- Mobile In-Service Programs. One of the concerns expressed by MOE personnel relates to the problem of instructional effectiveness, with emphasis on in-service training, given at the instructional site of the teacher. In other words, the MOE wants change and innovation to be effected at the classroom level. To do this, teacher in-service education has to reach the teacher in his or her work setting. Six decentralized teacher education centers currently exist; if given the resources to mobilize their preparation and renewal programs, they could very efficiently reach local teachers. These mobile training laboratories would have to be especially equipped to assist teachers with materials production, diagnosis, etc., on an extension basis. But once developed, the mobile laboratories could service the system indefinitely, bringing the latest developments to the doorsteps of the rural schools. The laboratories could serve as functional units of the administration in such ways as taking sample surveys of pupil achievement, collecting data, and serving as catalysts for community education programs. They could also function as mobile libraries by delivering books, films, etc., to schools and communities on a regular basis.

B. REGIONAL EDUCATION CENTERS

1. Description

The Regional Education Center (REC) program presently functions with six centers and plans to add one more. This program, including the administration, the centers, and the curriculum program as a whole, is a quasi-autonomous, semi-experimental entity, offering instruction at all levels from kindergarten through teacher training. Established over ten

years ago, it is under the aegis of the Ministry of Education, although it has its own administration/supervisory and decision-making authority.

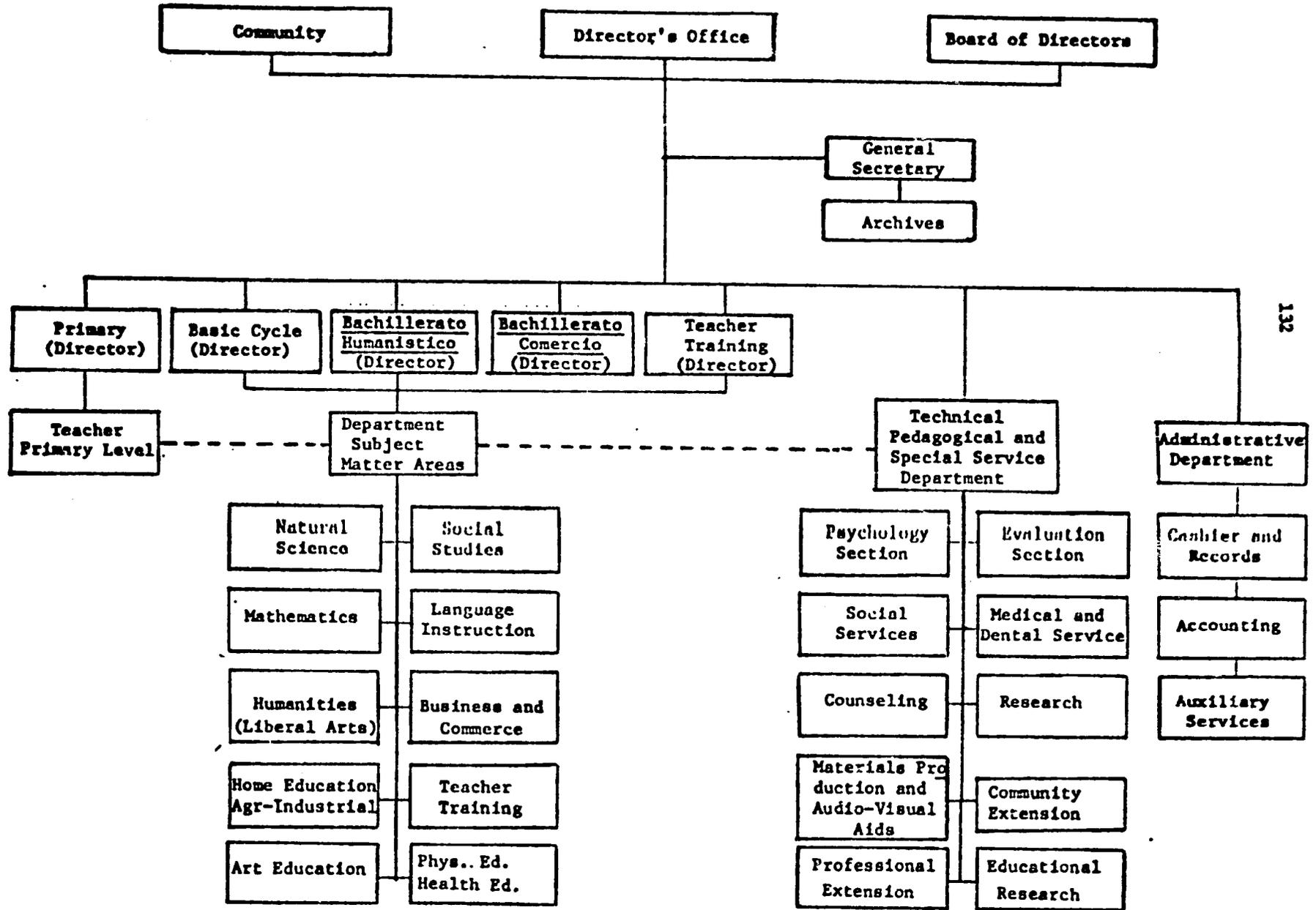
The centers were established around the following selected characteristics:

- To incorporate into one administrative unit primary, secondary, and vocational education.
- To serve as centers of educational innovation.
- To serve as experimental, decentralized administrative units.
- To be regional centers for carrying out in-service education activities.
- To be model centers for teaching, i.e., staffed with highly selected faculty, chosen on the basis of merit and demonstrated teaching performance.
- To promote community education activities through active programs designed to bring the school and the community closer together.
- To provide educational experiences that would incorporate practical learning.

The REC's project a unique image. Their more important features include their teaching quality; their administrative and organizational characteristics; their comprehensive facilities; and their proposed role as centers for school/community interaction. They have a total corps of teaching, administrative, and support personnel under the administrative unit. The centers have incorporated the new curriculum in their primary schools and teacher training programs, and are presently experimenting with the new curriculum at the Basic Cycle secondary level. They also emphasize practical experiences at various levels of their programs in sewing, gardening, homemaking, and related vocational subjects. Their curricula are broadly extended to incorporate a large selection of student organizations such as horticulture, dancing, composition, poetry, gardening, photography, fine arts, arts and crafts, etc., as well as formally designed, but rather limited, community outreach programs focusing on social education programs and parental guidance activities. Chart IX-1 shows the broad curriculum areas provided by the REC's.

While it is generally difficult to separate out the REC programs in the MOE data, the REC directorate has a wealth of information, most of which tends to show better-than-average achievement test results, high retention rates, and good success in the placement of teacher education graduates. While MOE officials tend to regard the REC program as a model

CHART IX-1
Organizational Chart of the Regional Education Centers



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Source: MOE, Department of Regional Education Centers

educational project, at the same time they resent it for receiving the lion's share of attention and resources. This ambivalence is understandable, when viewed in terms of the administrative situation faced by those within the Ministry when they seek support for their respective programs, and when they face the problems of day-to-day operation.

2. Issues and Constraints

Despite the relatively good educational profile of the REC's, a closer analysis provides reason for concern. For instance, the laboratories, including equipment, facilities, and materials, are far too scarce and ill-used to function well as good practical learning areas. An example was given at Encarnación, which has nearly 700 students at the secondary Basic Cycle level, where there is only one laboratory classroom and very little appropriate equipment.

Second, even though the REC's were designed to set their own course, and emphasize agriculture/technical education at the post-primary levels, little is really being done in this area. In fact, school enrollment data are given only for bachillerato humanistico and comercio in four of the centers.

Third, the centers, according to one source, fail to a great degree in their role of disseminating good instructional methods and materials to the many surrounding schools in their service area. The administrative/organizational mechanism for carrying out extensive in-service education programs has not been established or implemented. The centers have focused their attention on their own programs and lessened their responsibility to be the true regional agent for educational change.

Fourth, even though the centers were established to serve as model community learning centers, i.e., to meet basic community formal and non-formal education needs of adults and out-of-school youth in areas such as health, agriculture, and family living, they in effect are doing relatively little. When the assessment team asked the REC supervisors to list the community education needs as they saw them, based upon their personal experiences, the responses were very traditional, simple, and not very perceptive if measured against criteria beyond the basic family, social, and parent guidance concerns. When asked whether the centers had any creative accelerated or capacitación laboral programs in mind, the supervisors then, and only then, remembered that a major convenio was written between the MOE and SNPP to establish vocational/technical skill training in the centers in 1975. This was to provide short-term courses to some 400 persons in four centers in electricity (installation procedures), soldering, masonry, plastering, carpentry, and welding.

The problem then is not one of function or purpose. Rather, it is one of basic technical and program capacity. The REC program does not have the organizational capability to design, implement, and follow through with a quality community-based, continuing education program. Yet, there

is ample evidence at all levels of the system that this is an area that must be developed if these centers are to serve as originally intended.

Fifth, one of the initial purposes of the centers was to serve as model institutes for teacher development. Thus, they were charged with being more than traditional normal schools. They were designed to be originators of educational innovation; organizational units that would serve as instruments of change. Again, because of a number of factors, including financial resources, organizational capacity, methodology, materials, etc., they have not served the system well in this area. Yet, it is not possible to think of broad quality improvements in rural/urban education programs until this organizational component is developed.

Here the problem rests again with organizational capacity, or methods, human and fiscal resources, materials, and implementation plans. There is evidence that the implementation of the new curricula is lagging because the system lacks the capacity to effectively change teacher behavior and attitudes. Thus, the value of the effort undertaken in new textbook production, supervision, administration, and indeed, in formal education as a process, is lowered compared to what it could be were the instructional processes functioning at higher levels.

There are two dimensions to this particular problem. First, the less critical, but relevant, problem rests with the fact that the REC's, in effect, reach only a very limited proportion of students and teachers directly. (See Table IX-2).

TABLE IX-2

REC ENROLLMENT RATES AS PROPORTION OF TOTAL ENROLLMENT BY
LEVELS AND PROGRAMS, 1977

Center	Enrollment and Percentages, Department and National									
	Primary		Basic Cycle		Humanities		Commerical Track		Teacher Training	
	No.	%	No.	%	No.	%	No.	%	No.	%
San Lorenzo	712	1	360	2	233	02	100	05	84	.18
Encarnación	1,053	3	694	26	325	33	170	67	88	N/A
Villarrica	672	3	329	15	187	18	52	46	137	N/A
Concepción	765	4	611	35	324	47	87	84	72	N/A
Total	3,202	1	1,994	4	1,069	5	409	12	381	31

Source: MOE Data.

Second, the situation is best described by the absence of a comprehensive, quality design for these centers to serve as decentralized teacher development institutes. The first problem is quantitative and can only be addressed over a long period of time. The second is qualitative, and can be addressed now through a serious commitment to organizational development by the MOE and supported by bilateral and multilateral technical assistance. It would include re-training of REC faculties, training for utilization of equipment and materials, and expanding and improving the decentralized administrative structure.

3. Recommendations

The program implications of the following recommendations are expressly intended to go far beyond the present REC program experiences. The intention, in fact, is to focus on the ways in which these centers can become viable instruments for change and innovation in the quest for improved instructional practice throughout Paraguay's school system.

a. Organizational Development

Now that all but one of the Regional Centers are constructed and most programs are established, the need for increasing capacity and organizational efficiency attains high priority. The centers should better serve surrounding schools as models for curriculum innovation, and more importantly, dissemination. In effect, they must develop the capacity to work with teachers in the regional service areas. Centers, ideally, should have mobile instructional improvement laboratories which could go to local schools on a regular basis to offer short, intensive courses.

Implicit in this orientation is the need to develop human and material resources, as well as the organizational and management expertise to design, develop, and implement a comprehensive teacher in-service education program which would lead to professional certification for those uncertified instructors who are presently teaching.

b. Emphasis on Community Education Programs

Starting from the limited kinds of adult or out-of-school youth programs offered to date by the centers, a major effort must be made to build their capacity to better serve the more broadly-based social, cultural, and economic development needs of the communities in the service areas. They should focus on becoming more effective community learning resource centers. Emphasis must be given to providing more flexibility, perhaps through mobile libraries, seminars, health and nutrition units, etc., and creative organizational programming. The major criterion for success will be the degree to which the centers can integrate educational programs, formal and non-formal, in such a manner as to serve a cross-section of the regional population. By nature and design, the centers should be the catalysts for community action, inter-sectoral planning and coordination, cultural enrichment, and social development. Libraries

need to be improved, programs need to be expanded, and equipment and materials need to be acquired and distributed.

To be effective community learning centers, the REC's need the organizational mechanisms to relate the school program to the community. Listed below are examples of ways in which this strategy can be implemented.

- Provide various kinds of learning opportunities at school centers for community members of all ages and interests.
- Utilize community members of various ages and backgrounds as classrooms resource people to share their knowledge, skills, and experiences.
- Develop a volunteer program which utilizes community members of all ages to help school faculty provide various learning experiences.
- Diversify teacher load to include working directly with parents in parent-education learning opportunities.
- Involve students and recent graduates in program evaluation in order to facilitate curriculum improvement.
- Provide a system for continuous flow of information regarding community needs and concerns utilizing area representatives, organizations, community members, and students.
- Utilize school facilities for community meetings and association headquarters.

c. Dissemination of Program Activities

The REC's have gained a good reputation and a wealth of experience in curriculum innovation and change in educational programming. The important thing now is to provide an opportunity for the centers to share those components of their program which can readily be used in other, less sophisticated school settings in the rural areas.

It is important to develop the institutional mechanism for disseminating program activities. REC's should be used as centers for in-service education; as models for teacher groups to observe on a released time basis; and as experimental models for research and development activities. A special corps of trainers should work out of the REC's to reach teachers in the surrounding areas who have as yet received no instruction in the use of the new curriculum. In addition to these mobile training teams, REC teachers should organize short-term workshops and/or road shows in rural areas where teachers lack the opportunity to be exposed to such instructional practices. Use could even be made of the students and parent groups of the REC's by having them assist other schools and communities to implement similar programs.

d. Emphasis on Agricultural Education

There is increasing evidence that the curricular experiences, especially for rural youth, must be more closely related to the real personal lives of the children. The lives of the rural children of Paraguay are oriented to agriculture; yet, the centers have not developed this phase of the secondary curriculum.

The emphasis should be on providing practical experiences, through which children and adults are given the opportunity to learn the basic techniques of raising and breeding animals, growing crops, processing milk, cheese, and butter, etc. Most of the centers have adequate land space for crop production and animal care; needed are teachers trained in these areas, as well as equipment and good didactic materials.

SECTION X

THE FORMAL SYSTEM: EDUCATIONAL FACILITIES PLANNING AND SCHOOL MAINTENANCE

A. EDUCATIONAL FACILITIES PLANNING

The purpose of educational facilities planning is to provide appropriate kinds and sizes of schools in the proper places in the most economic and efficient manner, consistent with the values, standards, and policies of the educational system. In order for these purposes to be satisfied, the planning program must have access to and make adequate use of the following information:

1. Student flow studies, indicating number and concentration of students relative to location of present schools.
2. Socio-economic studies of growing areas.
3. Capacities of current school buildings, to indicate construction needs.
4. Curricular and program requirements of various levels or of special locales.
5. Space norms, and equipment and furnishing specifications, related to curricular and program requirements.
6. Construction norms and current information on innovative practices or new technology in the school construction field.
7. Supervision and evaluation reports of prior construction, including maintenance history.
8. Site selection criteria and buy/sell processes established for a long-range plan of up to five years.

These data must be available and kept current, in order for them to serve their primary purpose of establishing priority needs, with full detail as to location, size, space programming, specifications, schedules, and costs for all projected new school construction.

Once these data are available and priority and budget decisions have been made, the process of design and construction takes on a more or less standard form, including:

1. Planning and master file system.
2. Architectural and engineering design.
3. Legal assessment (bid preparation and administration).
4. Internal or external financial control.
5. Supervision and evaluation of construction.
6. Training and upgrading of departmental personnel.

Other services may be indicated, depending on the degree of participation by local communities in new school construction.

1. The MOE Department of Construction

Measured against these standard norms and requirements, the situation in Paraguay can be characterized generally as having limited resources and information. At least two widely diverging mechanisms for fulfilling construction needs co-exist. One is the official MOE effort, carried out by the Department of School Construction. The other is private, evolving from grass-roots initiatives undertaken at the community level. These two mechanisms create a potential for systematic action, based on the Department's level of technical competence and on community involvement.

No national guidelines for planning school construction in Paraguay exist at present. In recent years, however, new school construction has been undertaken as part of international loan operations initiated first by USAID and followed up by the World Bank. These financial operations began within the context of an overall development policy which is regional and rural in nature: the development of the Northern and Eastern Ejes.

The extension of educational opportunities through the construction of schools is an integral part of the overall regional development policy. At this level, the planning of facilities entails, as a first step, making surveys of the zone where the buildings will be located. These school mapping surveys are carried out by school supervisors and supervisors from the Department. The information collected is expected to enable the Department to make basic decisions concerning the programming of new facilities, utilizing such data as school population (to define student flows), plant location (to identify the location of new units), and population growth (to take into account the impact of migration on the size of future school populations). Although the information could not be examined directly by members of the sector assessment team, the Director of Construction stated that the quality and specificity of the available information is adequate to allow the Department to establish locales, size of plant, construction specifications, and numbers of schools by types of buildings. To complement this effort, the Department designs

its own instruments and questionnaires to obtain information on curriculum characteristics. These instruments are conveyed to the Department of Curriculum and the information is used to derive architectural guidelines for the design of facilities.

This planning model, it should be noted, as of now has a rather limited scope. If a system-wide view of the sector is adopted, the following assertions can be made:

1. Student flow and concentration studies by desegregated planning regions do not exist.
2. Studies relating curriculum and socio-economic settings, including development pole areas, do not exist.1/
3. Documentation of the capacity of the individual schools does not exist, and various records showing the differences between enrollment by age and numbers of school-aged children are conflicting. Construction needs cannot be documented using this information.2/
4. Since school construction is largely a community enterprise, there are no effective construction norms. Structures built by the Ministry prior to the enforcement of current standards observed construction norms which vary significantly according to the area of the country and the budget constraints of any given building.
5. Supervision and evaluation reports of prior construction do not include maintenance history.
6. There are no written norms for site selection. Buy/sell processes are not employed, since at this time practically all school sites are donated.

1/ The only exception, though not applicable in its totality, is a study of educational programming for the area of Itaipú. Cf. Margarita Salcedo and Carlos Ortiz, Programación Educativa Para el Area de Itaipú, Asunción, 1976.

2/ For instance, official Planning Department records for Cordillera show 8,712 urban children aged 7 to 14 by census, and 15,104 enrolled. This might be accounted for by the inclusion in the enrollment of children over 14 years of age, but other records (Anuario 1975) show only 762 such enrollments. The Ministry estimates that urban enrollment includes 81 percent of the children and rural enrollment, 70 percent, while Anuario 1975 figures show 99 percent enrollment.

Obviously, the Department of Construction has little of the basic data needed to adequately perform its services on a nationwide scale. At present the Department is also constrained by the commitments for counterpart funds and resources acquired under the foreign assistance loans. A significant portion of Departmental resources, including qualified personnel, is devoted to these programs, which require planning, design, and construction of facilities. As a result, the needs of other areas of the system (including the city of Asunción itself) are often left unattended.

B. SCHOOL MAINTENANCE

School maintenance constitutes the natural counterpart of facilities planning. Good maintenance is expected to provide for the health, safety, and comfort of students and teachers in the school environment; to assist the ongoing educational process; to help maintain morale and develop acceptable attitudes on the part of students and teachers; and to protect public property and investments. In order for these purposes to be satisfied, the following information is needed:

1. Inventories of each school are required, indicating potential and actual problem areas; gravity of problems should be weighed by indices related to danger to life, danger to health, and impediments to program.
2. Descriptions of work required are needed to correct the above conditions, including types and quantities of labor, order of work, steps required, types and amounts of materials involved, and estimated costs and time.
3. Space and construction norms are necessary, including evaluation of prior problems relating to adequacy of architectural design elements, engineering design elements, construction (contractor techniques), materials employed, and manual labor.

The collection and analysis of these data are continual processes. They result in the creation of work priorities, budgets, and long-range planning, usually for several years in advance.

Once the data are available and priority and budget decisions have been made, the process of maintenance-related design and construction may take on any number of standard forms which approximate those described for new construction, but which in addition will require:

1. Storage, control, and distribution of materials, tools, and vehicles.
2. Organization, supervision, and administration of manpower and time.

In Paraguay these services should be further coordinated with the Comisiones Cooperadoras, who are currently involved in the process of school maintenance and repair.

1. Current Maintenance Procedures

At this time, Paraguay does not have a coordinated, functioning school maintenance system. Nominally the responsibility for maintenance resides in the Department of Construction of the Ministry of Education. However, the maintenance budget is inadequate, unstable, and inelastic. In 1976, \$240,000 was allocated for maintenance. A similar amount has been approved for 1977; as of the end of March, however, no funds had been transferred to the Department by the Ministry of Finance.

The principal source of finance for maintenance is the Sports Lottery (Polla Deportiva), but its yield has been steadily declining in recent years. The other source of finance, the proceeds from a 1 percent share of the gasoline tax, has not increased despite the fact that gasoline consumption and prices have risen substantially in the last three years. In the same period, the purchasing power of the maintenance budget has been halved because the prices of materials have doubled.

Finally, given current control mechanisms and perceived priorities, there appears to be no effective way to ensure that the funds allocated for maintenance will be used for that purpose. They are now used primarily for new construction at the local level.

This situation undoubtedly affects the efficacy of school maintenance in Paraguay. A 1972-73 global school survey carried out by an AID consultant provides information that is pertinent to an assessment of the current situation. Some of these general findings were corroborated by a personal evaluation of a number of schools in Asunción and in the interior.

a. Health, Safety, and Comfort

Health studies in the United States during the 1940's showed that the section of the population with the greatest number of illnesses and physical problems were the children of school age who attended school. Contributing to these health problems were poor illumination, poor air circulation, acoustical extremes, poor sanitary facilities, and degeneration of construction materials.

The 1972-73 school survey indicates that at least 84.9 percent of the schools in Paraguay have no electric power. Personal investigation of schools showed that many of those electrified were without window glass, and that when cold weather came the windows were shuttered, so that there was no air circulation or illumination, except for one, naked incandescent bulb.

The survey also indicates that 21 percent of the schools have no water, and that most others have no source which is protected against sewage or contamination. In this setting, it is likely that many children are drinking contaminated water in the schools.

The survey shows that at least 90 percent of the schools have no sanitary services or have antiquated facilities in poor repair. Personal investigation of schools showed a consistent pattern of toilet facilities without roofs or doors, with sunken toilet pits, permeable porous surfaces throughout, and ineffective or inoperable flushing mechanisms. There was little opportunity for a child to use these facilities without touching the feces or prior contamination of walls and doors produced by those who entered before him. The intense stench of open sewage indicated a regular source of possible airborne contamination. The number of flies observed also adds to the dimensions of the problem of sewage contamination.

The majority of schools, according to the survey, have wooden walls. Without proper treatment and protection, wood deteriorates very rapidly, and without good maintenance fire is a non-negligible risk.

The same report indicates that 70 percent of the floors are either brick (35.5 percent) or dirt (35 percent), neither of which is healthy, safe, or comfortable.

Nearly half of the schools have thatch roofing which constitutes a potential disease-carrying threat and even with good maintenance is a fire hazard. Tile roofs, carried by wood joint systems, require periodic inspection and maintenance to insure that leaks or exposed beams do not result in rot and collapse.

b. The Educational Process and Morale

It is obvious that the above mentioned deficiencies are constant impediments to the program. They can only reduce the morale and contribute to poor social attitudes on the part of students and teachers. Dirty, unsafe, unpleasant facilities simply say to the occupants, "we don't care; you are not important."

c. The Protection of Public Properties and Investments

Normally, it is considered that new schools with adequate maintenance will require about 1 percent of the current equivalent of the original construction cost per year for that purpose. Other buildings with histories of good maintenance require more, depending on construction materials originally employed. Once deterioration sets in, these percentages increase at an astonishing rate. Assuming that the structure does not become obsolete, it can be argued that when the maintenance costs exceed two-thirds of the cost of new construction, it is no longer feasible to repair.

The school plant survey indicates that in 1972, only 20 percent of the schools were in good condition. Many of the 39 percent in regular condition are by now in bad condition, which means that within perhaps five years, the government may need to replace between 40 and 65 percent of its schools.

In terms of actual cost, this is an enormous economic loss. Sector survey information and Construction Department estimates of numbers of schools range between 2,800 and 3,700. New construction cost varies between \$150 and \$200 per m². Using \$175 as an average cost and 50m² as an average room size (not including transit space), given the size of an average school as 5 rooms (this is the estimated average given by the Director of the Construction Department), the cost of a new school in accordance with current specifications would be \$43,750. Based on a 40 percent replacement requirement, the costs, discounting inflation, would run between \$49,000,000 and \$64,750,000. Based on a 60 percent replacement requirement, the costs would run between \$73,500,000 and \$97,125,000. None of this would house an additional student population nor provide for the future; and about 40 percent will represent an outright loss over and above what regular maintenance would have cost.

This investment would not stem the regular flow of additional schools into the replacement category in the years to come. Since only 14 to 17 percent of the schools are new, it may be expected that half again the figures quoted above would be needed in the next five years.

Regular maintenance of new schools is as important as that for old ones. Emerging changes in curricular development in Paraguay indicate that new programs will be more diversified and will involve the use of complicated and/or heavy machinery. Maintenance of such machinery is imperative. Not only do small problems escalate quickly into large and very expensive ones; once such problems occur, the down-time required for repair totally deprives the system of the use of the machinery. Given the criteria for the original investment in such equipment, this down-time is insupportably expensive.

Returning to the original data requirements for the effective functioning of a maintenance system, the following may be noted:

1. There is at the present time no school-by-school inventory describing potential or actual problems, and no way of determining the gravity of the numerous (over 1,000) problems brought to the attention of the Ministry each year.
2. Given the situation described above, the work required cannot be identified adequately, nor can it be costed out. The Department is of course ignorant of the many other problems which are not brought to its attention.

3. Further, maintenance budgets or priority rankings cannot be determined under present circumstances.
4. The magnitude of requirements and the lack of resources is such that the Department cannot establish adequate mechanisms for storage, control or distribution of materials, tools, and vehicles.
5. Similarly, the Department is inadequately equipped and has so little resources that it cannot deploy sufficient manpower to deal with the multiple problems and emergencies that arise in any given year.

Each of the nearly 4,000 public schools in the country require at least some, if not considerable, maintenance. In addition, a number of semi-public institutions normally request assistance from the MOE to carry out some maintenance. The Department estimates that about 10 percent of the 1,000 schools requesting assistance each year actually receive it; that is, they are given materials or payment for manpower, up to a budgeted amount allowed for a given school, as long as funds remain. Obviously, those not included in the top 10 percent wait another year and re-apply for assistance, or they perform all of the work themselves. Fortunately, as mentioned earlier, the degree of community initiative is high. Maintenance and repair are actually performed by parent groups who contribute time, labor, and materials to the extent of their ability. This contribution is estimated to constitute about 50 percent of total job cost on the average, but inspection of requests for assistance and of parent construction indicates that considerably more is donated by these groups.

C. RECOMMENDATIONS: INFORMATION, ORGANIZATION, AND DISSEMINATION OF ACTIVITIES

The preceding analysis corroborates the initial argument that the situation in Paraguay as regards facilities planning and maintenance is contrasting as well as ambivalent. There is technical capacity and leadership in the Department. These qualities and qualifications were demonstrated by the technicians in charge of management who were articulate and candid about the current situation and the problems they face. This technical competence is seconded by an unusual degree of user involvement, which is a deciding factor in the determination of what is currently accomplished.

At the same time, systematic action is essentially voided by the binding lack of information and resources which would make possible the utilization of the information. The Department obviously needs to develop the organizational capacity to deal with the pressing problems of deploying resources to make available educational opportunities throughout the system.

Given this situation, three recommendations are made to increase the effectiveness of the Department of Construction. The first is that a series of studies should be undertaken. Six are strongly recommended, and

three are offered as optional. All are designed to create in the Department the capacity to function most effectively in the areas which are deemed particularly critical by officials in the Department and by this assessment.

1. Student concentration studies and socio-economic studies should be conducted nationally and organized by small, logical geographic areas. These would result in student spot maps for various ages, grades, and levels, and in curriculum indicators for various kinds of schools. The conduct and continuing maintenance of these studies are really within the purview of the Department of Planning of the MOE, because the data have many educational uses beyond facilities planning. If the Planning Department cannot carry out some of the studies, they should be performed by the Department of Construction.
2. A national inventory of all schools should be made. This would result in two documents for each school in the country. The first would show the school name and address; numbers, sizes, and descriptions for all rooms; use data; population; age of building; purpose for which the school was originally built; source of support; a small-scale drawing of the school, etc. Capacity rating forms should be developed, based on formulas for design capacity, maximum capacity, and emergency capacity. The second document would constitute a description of all functional problems in the school, weighted according to danger to life, danger to health, and impediment to program, with estimates of costs and descriptions of work and materials required.
3. Space norm studies should be developed to facilitate planning for safe and useful space. These studies should respond to anthropomorphic studies, curriculum, furniture, circulation, and safety, in order to guarantee a level of education which has some flexibility, in a space which is safe and comfortable. School drawings showing available space and descriptions of lecture situations, small group organization, and production groups, would be developed.
4. Construction norms should be developed which correspond with regional construction codes such as those developed in the United States. Analyses of materials, loads and stresses, acceptable processes of joining and forming, etc., would result in a document, perhaps varying for regions, which would become the legal national school construction code by which the Department would supervise all school construction of whatever size.

5. Site selection criteria should be developed; the selection of sites should be related to planes reguladores, or zoning maps, when possible. Legal provisions for buying, selling, or trading school sites should be formulated and enacted in order to ensure good site selection.
6. Based on the above studies, a long-range plan (i.e., five years) should be developed, for site acquisition and construction, prioritized by need. In addition to this, it might be most useful to develop all basic data necessary to secure funds and proceed with a crash program to eliminate school deficits to such a degree that the Department can then concentrate on expanding population needs and patterns.

The following studies are optional, but very desirable:

1. Feasibility study for the establishment of factories to produce school furniture.
2. Feasibility study for the establishment of factories to produce modular, prefabricated school construction elements.
3. Study to explore the possibilities of computerizing much of the data generated in the other studies mentioned above.

Whether these studies are undertaken by the Department of Construction or contracted to outside agencies, the specifications should be developed by the Department. The Department should also administer the progress of all studies, with the exception of the student flow and socio-economic studies, which should be performed and controlled by the Planning Department of the MDE.

A second recommendation is that the Department develop the capability to supervise all school construction in the country. The idea of parents constructing their own community schools is good, but the qualitative standards should comply with the norms set by the Department for all new construction. The study of construction norms and the establishment of codes will be of value; but the Department will ultimately need the legal authority to demand that such standards be followed in the field, and the supervisory staff and processes to enforce these demands.

A third recommendation is that the Department develop, print, and distribute to parent groups manuals showing the various construction processes available with local materials. Complete diagrams, sufficient to serve without the need for much reading, should be included, along with complete descriptions of all such processes and the directions and standards for performing them.

1. Organization for Managing a Maintenance Program

The improvement of school maintenance requires, first of all, the development of an adequate capability in the MOE. Two alternative models are possible. The first one contemplates a unified construction and maintenance department. The second one contemplates the creation of a separate Department of Maintenance. The idea for the latter structure is justified in terms of establishing a better control mechanism to avoid the absorption of maintenance into construction. The integrity of the maintenance programs would thereby be maintained.

Under either plan, the Department of Construction and/or Maintenance should develop technical training (and re-training) programs for their own personnel. Training programs would also be developed for directors, teachers, students, parents, and custodians (porteros). The major control, payment, and re-training of custodians should be put under Maintenance, except that the school directors should have the right to hire and fire and to direct the work schedules of these personnel.

Whichever plan is chosen, the budget should be established according to need and should be guaranteed. The current lottery basis for financing maintenance budgets is not acceptable.

It is recommended that in order to establish fully responsive construction-maintenance efforts, funds be secured to perform the studies previously described and to establish at least a model maintenance district, preparatory to the receipt of any large-scale loan funds to overcome the huge deficits in this area.

a. Plan One: Unified Construction and Maintenance Department

Under this plan, both offices or departments would be administered by the director of the Department of Construction.

- A planning section would establish priorities, scopes of work, and budgets for new construction and maintenance, if priorities are not established by the Department of Planning. Master files on all schools and chronological files on anticipated new work would be kept and maintained by this section.
- A technical section, consisting of architects, engineers, draftsmen, etc., would develop and maintain inventory information for use by the planning section; coordinate the liaison between curriculum and design, and submit educational specifications to the planning section for the master files; develop architectural and engineering designs and construction in the country; update construction and/or space norms based on evaluations of new construction or description of maintenance problems; and assist with evaluation of completed projects.

- A legal section would prepare bids and other documents, as well as handle other legal contingencies.
- A financial section would be responsible for control and accountability of funds.
- A maintenance office with a chief and several clerks would process incoming requests for assistance; coordinate project costs with community ability to participate, in order to help establish budgets, manpower needs, and materials requirements with the planning section; process documents from district offices and assist in planning for the inclusion of such documents in the master of warning files; and supervise district offices.

District offices would be established wherever there are district centers. Their services should be adjusted to serve the entire Eje Norte and Este regions. The exact composition of each district office would depend on the types and amounts of services required by the various districts. This information will come from the inventory studies proposed. Conceivably there would be an architect or foreman (chief), and various maintenance specialists such as plumbers, electricians, masons and plasterers, carpenters, etc. Depending on perceived need, there might be a maintenance office, general purpose shop and/or one or more mobile units. When survey estimations or evaluation requirements are excessive, architects, engineers, or other technicians from the central office could be shifted to the district offices on a temporary basis.

b. Plan Two: Separate Construction and Maintenance Departments

Under this plan, each department would have its own administrative authority and the two would have completely separate line relationships. However, to avoid duplication, the Department of Construction would need to provide the inventory survey services and design for maintenance. As in Plan One, the planning section would set the priorities; this would require considerable communication between the three departments.

Master file systems and legal and accounting services would have to be duplicated. Good cooperation would be necessary in the field or district offices in order to utilize the services of Construction Department architects or engineers, or such personnel would also need to be hired by the Department of Maintenance.

Under this system, projects above a certain financial cost or level of complexity would have to be designated as new construction and performed by the Department of Construction through regular bidding processes.

In any event, the Maintenance Department would require access to the results of the individual school inventory, and would need to develop a work order system including forms and processes for the purchase, storage, and distribution of materials and tools, time control, work calendar, and distribution of workers.

SECTION XI

NON-FORMAL EDUCATION ACTIVITIES: SCOPE, OUTCOME, AND IMPACT

Non-formal education activities are a significant component of Paraguay's education sector. Because of their diverse nature, however, they constitute autonomous efforts with no systematic action. They range in structure from highly formal to quasi-informal; from constitutional to spontaneous; and from massive to selective. The reason for grouping them together is that, in common, they aim to address learning needs which are specific in nature and which are not met through the schools, by their own specialization. Their actions are often directed to groups which have not been properly attended by the schools. The many functions and purposes of NFE fill education vacuums, but they also complement and reinforce the actions of the schools by transmitting specialized knowledge and skills.

The objective of this section is to analyze the modes, objectives, and organization of NFE activities in Paraguay, examining strategies, communication techniques, and accomplishments. Based on these elements, the outcomes and impact of these activities can be asserted.

A. GOVERNMENT POLICIES AND ACTIONS IN NON-FORMAL EDUCATION

The GOP's position regarding non-formal education may best be characterized as one of great interest, but which is represented by only limited action. NFE activities are common throughout Paraguay and many of them are sponsored by central government institutions. However, the existence of NFE activities, even when the government is the major sponsor, does not presume the existence of a systematic NFE policy.

Undertaking systematic action for the development of NFE is implied in the educational objectives for the 1977-1981 planning period. As stated, the specific objective is to "develop plans, programs, and content of non-formal education in the rural areas to parallel the formal education efforts." Currently, the responsibility for coordination of activities and institutions is vested in the Consejo Nacional de Progreso Social (CNPS). However, the number of institutions involved in this effort is limited, and it does not appear that coordination of educational activities, as opposed to overall program activities, is achieved. The Eje Norte and Este activities have substantial educational components, but there is no clear strategy which relates these components one to another in terms of either specific learning packages, or the achievement of given sets of educational objectives.

Implicit in this analysis is the notion that the GOP should take a normative position towards the development of NFE. It is assumed that such action would have positive effects through the achievement of greater institutional coordination, higher levels of efficiency, and more effectiveness due to greater and more intensive coverage of the user populations. As indicated in Section V, and in the program and activity descriptions contained in Annex C, institutional capabilities to carry out

systematic activities in isolation are very limited. It is expected that greater effectiveness and efficiency in NFE could be attained through concerted action.

Concerted action can also be justified from the point of view that it can help the government better understand the nature and extent of the problem of human resource development in Paraguay, and its possible solutions. Detailing policy and program strategies often helps to clarify assumptions. The degree of achievement of strategy objectives helps to test the tenability of those assumptions. In this regard, a better specification of the overall educational strategy in the Eje areas can provide the elements needed for formulating an NFE policy for rural development.

The overall GOP human resource development needs, however, transcend the objectives of rural development. As prescribed by the current Economic Development Plan, there is a need to create a cadre of middle-level managers and skilled operators for the industrial and service sectors. The formal education system is not adequately equipped to accomplish this. As a result, the Servicio Nacional de Promoción Profesional (SNPP) is the pivotal institution charged with carrying out this task through its programs of pre-employment training. Responding to this initiative, the World Bank approved, in its Second Paraguay Education Project, a loan operation geared to strengthening the institutional capabilities and scope of SNPP. As detailed in Annex A of this study, the assistance provides for the construction and equipment of vocational training centers in Asunción, San Lorenzo, Hernandarios (in the zone of influence of the Itaipú project), Encarnación, Choré and Coronel Oviedo; the establishment of two mobile training workshops; and the provision of technical assistance and fellowships. The work of SNPP is also being reinforced through a USAID grant designed to strengthen SNPP's capabilities in providing training to campesinos.

The current situation cannot be characterized as a piecemeal approach, but rather as the beginning stages of concerted policy action. In this context, the thrust of this section is to establish the potential for future strategies on the basis of what currently exists. To achieve this purpose, a descriptive profile of programs and activities is provided, based on the results of a survey undertaken in 1976 by the Ministry of Justice and Labor, and Latin American Development Associates. The survey included 31 major institutions from an inventory of social, religious, private, and government groups involved in training in Paraguay compiled in 1973 by CNPS.^{1/} Utilization has also been made of information gathered in a survey sponsored by ILO in 1975, which catalogued 32 institutions involved in agricultural and vocational training, as well as information contained in a list of 282 institutions which provide low-level technical skills training (compiled by the Bureau of the Census and Statistics).^{2/}

^{1/} The description of programs and activities is given in Annex C.

^{2/} The list is provided in Annex D.

B. PROFILE AND CHARACTERISTICS OF NON-FORMAL EDUCATION ACTIVITIES IN PARAGUAY

The institutions and programs of non-formal education have been categorized using a typology which classifies the activities according to functions and purposes. The characteristics which determine the profile include the coverage and user population, organization and methods, financial resources and costs, and outcomes, benefits, and impact.

1. Typology of Non-formal Education Activities

In accordance with the functions and purposes of NFE activities, the following categories have been established:

- Pre-employment training deals in agriculture and service skills. The objective is to prepare participants in skills which will enable them to qualify for job opportunities. Subjects include general mechanics; turbines, diesel, and internal combustion engines; machine tooling; welding; carpentry; general electricity; bricklaying; leather work; and home appliance repair. Training is also offered in bartending, restaurant services, laundry operations, and office skills. Agricultural subjects include crop and animal production, farm mechanics, farm management, and mechanization of agriculture. There is also a limited training program in health and nutrition.
- In-service training is intended to upgrade the skills of those already employed, in order to equip participants to perform more effectively in their present positions. Subjects include accounting, office management, municipal law, administration, teaching methodology, curriculum development and planning, health and nutrition, agricultural technology, community organization, and techniques for transferring technological information.
- Production training is directed to small-scale farmers and craftsmen. The purpose of the instruction is to transfer technological information which will improve production levels.
- Basic education is concerned with teaching basic literacy skills to illiterate adults. Combined with self-actualization training, it also seeks to help individuals and groups develop skills which will enable them to face and solve their problems. This type of training is not directly related to the employment status of participants; any positive impact on their employability is an indirect effect of the course. Information about health and nutrition is provided, to impart a basic understanding of good sanitation and dietary practices. Topics presented include the

essential elements of good nutrition; sanitary food preparation; prenatal and child care; environmental sanitation; and first aid.

Table XI-1 provides an outline of significant program characteristics: participation, costs, user groups, and objectives and methodologies. The programs are classified in accordance with the functional typology, with the understanding that they often overlap any single function. In such cases, the inclusion of programs in given categories is determined by the major area of involvement.

2. Coverage and User Population

Programs such as SEAG, PAEN, SENASA, IBR, the basic education training of CAH, and the National Directorate of Cooperatives are concentrated in rural areas. The colonization zone of the Eje Norte and Alto Paraná are receiving particular attention from these programs. Much of the instruction given by these groups takes place through personal interaction between change agents and the campesinos. These agents, working from regional and sub-regional offices in interior towns, spend much of their time visiting farmers; these visits, in fact, are part of their technical responsibilities.

Pre-employment training programs are focused in the urban areas; five are located in Asunción and three are in major towns in the interior. Two others offer training specifically for campesinos. SNPP, headquartered in Asunción where it offers 48 percent of its training programs, extends its coverage to interior towns by using mobile units.

According to the training categories developed, the areas of coverage are as follows:

	<u>Total</u>	<u>Urban</u>	<u>Rural</u>	<u>Urban/Rural</u>
Pre-employment	9	2	2	5
In-service	2	2	-	-
Production	5	-	4	1
Basic Education	15	-	13	2
TOTAL:	31	4	19	8

The user groups of the various non-formal training programs include all elements of the population. Two general trends emerge: (a) NFF programs generally draw participants from the relatively poor segments of society; and (b) there is a tendency for more of the participants to be men than women.

TABLE XI-1

DESCRIPTION OF PROGRAMS AND ACTIVITIES OF NON-FORMAL EDUCATION CLASSIFIED BY FUNCTIONS

Program Categories and Denominations	Participation	Cost	Target Population	Objectives, Courses, and Methods
PRE-EMPLOYMENT TRAINING				
1. Servicio Nacional de Promoción Profesional (SNPP)	5,630 (to date)	\$ 380,000 (global)	men and women; urban and rural	Provide technical, job-oriented training; combination of theory and practice; courses last 3 to 10 months
2. Escuela de Sanidad Militar	1,000 (to date)	(not possible to calculate)	young men; some professionals	To train participants as nurses, medical pharmacists, etc., to work in military posts throughout the country
3. Escuela Agrícola de Villarrica	(data not available)	\$ 30,183 (global)	young campesinos	Train intermediate-level technicians in various fields of agronomy; lectures, practical demonstrations, audio-visual materials and work groups
4. Instituto Politécnico "Juan XXIII"	1,186 (to date)	\$ 11,429 (global)	young urban males	Skill information and preparation in the humanities; combination of theory and practice
5. Colegio Técnico "Javier"	1,197 (to date)	\$ 3,900 (global)	young urban males	Train students in technical skills; theory and practical instruction, supplemented by audio-visual aids
6. Instituto Agropecuario "Carlos Pfanni"	132 (to date)	\$ 63,492 (global)	campesinos between the ages of 15 and 19	Prepare students for work in industry, farming, commerce; combination of theory and practice
7. Centro de Formación de Auxiliares de Enfermería (CENFAE)	613 (to date)	\$ 25,396 (global)	men and women over 18 years of age who have completed primary education	Provide training for limited nursing services and staff to start training elsewhere; lectures, visual aids, practical demonstrations
8. Instituto Técnico-Vocacional Santa Bernardita	4,225 (to date)	\$ 5,555 (global)	adult urban women and female domestic servants	Study and development of domestic arts; combination of theory and practice
9. Escuela Técnica Salesiana "Pedro Jorba"	166 (to date)	\$ 39,682 (global)	males over 12 years of age	Train workers for mechanical and industrial development; classroom presentations, practical application, workshops

TABLE XI-1

DESCRIPTION OF PROGRAMS AND ACTIVITIES OF NON-FORMAL EDUCATION CLASSIFIED BY FUNCTIONS

(Continued)

Program Categories and Denominations	Participation	Cost	Target Population	Objectives, Courses, and Methods
<u>IN-SERVICE TRAINING</u>				
1. Instituto de Desarrollo Municipal (IDM)	2,100 (to date)	\$ 15,873 (global)	white collar municipal employees	Improve working capacity of municipal employees; lectures and dialogues
2. Centro de Adiestramiento en Servicio (CAES)	24,377 (to date)	\$ 67,460 (global)	employees of municipalities, central government and private institutions	Train administrative personnel and prepare instructors to organize similar programs; group techniques
<u>PRODUCTION TRAINING</u>				
1. Servicio de Extensión Agropecuaria (SEAG)	8,000 families (to date)	\$ 507,936 (global)	medium and small-scale farm families; some large-scale producers	Help farm families make better decisions about agricultural production; personal visits, demonstrations, meetings
2. Instituto de Bienestar Rural (IBR)	(unknown)	\$2,420,000 (global)	campesinos	Assist campesinos to obtain land and to provide general training in health and agriculture; lectures, courses, audio-visual aids, discussions
3. Crédito Agrícola de Rehabilitación (CAH)	27,730 (to date)	\$ 214,285 (global)	small farmers, especially colonists	Provide supervised agricultural production credit; informal visits, formal presentations, demonstrations, and practice
4. Fondo Rotativo de Préstamos Pastoral Social	200 families (to date)	\$ 15,873 (global)	campesinos	Help groups who wish to achieve better economic development through unified action; learning while doing
5. Asociación Rural del Paraguay	(data not available)	\$ 373,015 (global)	large-scale cattlemen and farmers	Stimulate cooperation among cattlemen and rural laborers, and to transfer knowledge of improved techniques; seminars and group meetings

(Continued)

TABLE XI-1
DESCRIPTIONS OF PROGRAMS AND ACTIVITIES OF NON-FORMAL EDUCATION CLASSIFIED BY FUNCTIONS

(Continued)

Program Categories and Denominations	Participation	Cost	Target Population	Objectives, Courses, and Methods
BASIC EDUCATION				
1. Programa de Alimentación y Educación Nutricional (PAEN)	13,786 (to date)	\$ 38,095 (global)	campesino families, community leaders, professionals	Improve the level of life in rural areas, especially concerning nutrition; combination of theory and practice
2. Departamento de Alfabetización y Educación de Adultos	86,228 (to date)	\$ 391,312 (global)	adults with little or no primary education	Improve primary education for adults; classroom presentations, group discussions, practical experimentation
3. Servicio Nacional de Saneamiento Ambiental (SENASA)	(data not available)	(data not available)	campesinos	Educate campesinos in use and benefit of environmental sanitation; combination of theory and practice
4. CREZDICOOP	(data not available)	(data not available)	cooperative members	Provide advisory and technical assistance to channel credit; formal presentations, group discussions, visual aids
5. Instituto de Desarrollo Integral y Armónico (IDIA)	1,340 during 1975	(data not available)	adult campesinos	Raise level of living through research, promotion and education; courses, seminars, demonstrations, audio-visual aids
6. Instituto Americano para el Desarrollo del Sindicalismo Libre (IADSL)	2,300 (to date)	\$ 23,809 (global)	urban men	Train leaders of local unions; discussions, role-playing, lectures, visual aids
7. Oficina Nacional de Progreso Social (ONPS)	1,700 (to date)	(data not available)	all levels of cooperating agency staff	Coordinate training courses; panel discussions, formal presentations, group discussions
8. Centro Paraguayo de Población (CEPEP)	(data not available)	(data not available)	wide-range; mostly low-income mothers	Improve health of mothers and children through study and research in medicine, sociology and demography; individual interviews, presentations and discussions, audio-visual aids

(Continued)

TABLE XI-1

DESCRIPTIONS OF PROGRAMS AND ACTIVITIES OF NON-FORMAL EDUCATION CLASSIFIED BY FUNCTIONS

(Continued)

Program Categories and Denominations	Participation	Cost	Target Population	Objectives, Courses, and Methods
BASIC EDUCATION (Continued)				
9. Asociación Cristiana de Jóvenes (YMCA)	7,994 in 1975	\$ 142,857 (yearly)	all ages, social classes, and economic levels	Contribute to total human development; wide varieties of teaching approaches.
10. Misión de Amistad	(data not available)	(data not available)	pre-school and primary school children, young adults, campesinos	Help people improve the physical, social, and spiritual aspects of their lives; lectures, group dynamics, audio-visual aids
11. Organización de Desarrollo Comunal (ODECO)	(data not available)	\$ 24,080 (global)	primarily men of rural communities	Provide technical assistance to promote integrated development in rural and urban communities; meetings, discussions, lectures, films, demonstrations
12. Centro Femenino de Educación Integral (CEFEDI)	350 (to date)	\$ 2,380 (global)	women of all ages and educational backgrounds	Provide short courses of immediate benefit; combination of formal presentation and practical application
13. Obras Sociales Salesianas	1,271 (to date)	\$ 3,968 (global)	urban female domestic employees	Provide professional training; formal presentation and practical work
14. Proyecto Marandu	12,000 (to date)	\$ 95,238 (global)	all members of indigenous groups	Stimulate self-reliance and improve capacity for social development; visiting teams, informal community, discussions
15. Unión Paraguaya de Cooperativas (UNIPACO)	30 cooperatives with 2,700 members	\$ ---	small farmers	Provide services and technical and financial assistance; courses on production and marketing, organization and management

Pre-employment training is most clearly directed at the younger age groups; vocational schools which offer courses in blue-collar skills or agriculture generally have participants between the ages of 15 and 20.

In-service instruction has a target population of young adults from 20 to 25 years of age. Both sexes are represented, although more men than women participate. Almost all participants have formal education backgrounds which include the Basic Cycle of secondary school; in many instances they have completed secondary school, and in some cases have also received university training.

3. Organization, Delivery, and Methods

Due to the multiplicity of purposes and objectives of NFE activities the greatest diversity occurs in the areas of organization and delivery. The information available from the surveys does not allow a comparative analysis to be made of organizational and delivery characteristics by program. At any rate, such a comparative analysis should not be geared to providing unambiguous answers as to which approach is best. The effectiveness and efficiency of individual activities are contingent upon the objectives they pursue, the resources to which they have access, and the internal and external constraints under which they operate.

Institutional sponsorship, purposes, and scales of operation are the major determinants of the structure of the organizational mechanism. A number of public institutions such as IBR and CAH are not educational institutions; however, they do provide educational services through some of their specialized components. Other institutions such as SEAG provide educational services, but are part of larger institutions (MAG, in this case) and therefore lack total operational autonomy. Finally, institutions like SNPP are exclusively educational and operate autonomously. In common, these institutions provide their services on an extension basis through contacts, or by bringing the classroom to the user as when mobile units are used, or even by organizing in-plant courses.

By contrast, most of the private institutions essentially offer in-house services. The vocational/technical institutes, and the polytechnic and agricultural institutes, fit this category. A number of public institutions such as IDM and CAES which offer training in specialized areas of public administration also offer their services through courses, and bring the participants to the sites where the courses are conducted.

Organization and delivery are closely aligned. Organizations such as SEAG, CAH, and IBR provide extension services which are by definition decentralized. Ultimately, the delivery mechanism rests on the extension agent, supervisor, or facilitator who works with individuals or small groups in the field. These agents are backstopped by the central organization, but the bulk of their time is spent away from the headquarters. The nature of the exchanges between the agents and users may follow a pre-determined pattern, but often there is ample room for a case-by-case approach where specific needs (e.g., planting certain types of crops)

are addressed. The encounters may be sporadic, but they can extend over a long period of time.

By contrast, SNPP and the other institutions which provide more structured services need to adopt more systematic approaches. When vocational or training courses are involved, the topics are set. The components of the topics are arranged in lessons which follow an established sequence involving increasing levels of complexity or sophistication. When the offerings are "softer" in nature (e.g., as in home economics and nutrition education programs), the course or lesson formats may be less rigid; but they are still centered in one place, and have a pre-determined duration.

The methodologies, then, are also closely intertwined with the purposes and the types of delivery mechanisms. Institutions such as SNPP use specific methodologies known generally as occupational analysis. In general, the more structured the program is, the greater is the emphasis on analysis and practice than on information. At the other end, in the extension programs the orientation is essentially informative, sometimes supported by practice and demonstrations. Table XI-2 provides an overview of the techniques used by NFE programs in Paraguay.

TABLE XI-2

TRAINING TECHNIQUES USED IN NFE PROGRAMS 1/

Technique	Number of Institutions Using Technique
Lecture	25
Demonstrations	20
Practical Applications	17
Films	16
Group Dynamics	14
Seminars	13
Texts and Written Materials	9
Graphics	9
Slides	7
Radio	5
Personal Visits	4
Cassette Tapes	2
Team Teaching	1
Television	1

1/ This table represents all responses by institutions to open-ended questions. It is based on the survey conducted by the Ministry of Justice and Labor in 1976.

As there are no evaluations of program content and methodologies, it is not possible to analyze the relevance or external efficiency of what is taught in these programs and activities. The information that is available, however, indicates that for the most part the didactic approaches are quite traditional, and comparable to what goes on in the school classrooms. In other words, no special emphasis is placed on critical analysis and understanding of the subject matter. The instructor dominates the group, and the learning that takes place essentially reflects his or her knowledge and interests. Moreover, some offerings (e.g., agricultural extension) are impaired by the lack of supportive materials, inputs, and opportunities which may be needed to make what is taught operationally effective.

4. Financing and Costs

NFE in Paraguay is financed by local government funds, international agencies, private donations, and tuition and other resources generated by the sponsoring organizations. Of the 31 programs, 11 are financed jointly by the government and international donor organizations. These are generally the more extensive programs, such as SEAG, IBR, SENASA, IDM, PAEN, ONPS, and SNPP, with a large staff and wide outreach.

A substantial number of non-government programs also receive international funding. Thus, approximately two-thirds of the programs studied are dependent in part, and a few are almost entirely dependent, on non-Paraguayan support.

TABLE XI-3

SOURCES OF FUNDING FOR NFE PROGRAMS 1/

Source	No.	%
Government of Paraguay only	4	12.9
Private donations only	2	6.4
International sources only	6	19.4
Government and private donations	2	6.4
Government & international sources	11	35.3
Private donations & int'l. sources	6	19.4
	<u>31</u>	<u>100.0</u>

1/ The table shows the primary source of support.

As the programs become smaller in scope, funding sources tend to be private and/or local. Beyond the 31 NFE programs studied in detail, almost all other activities are supported at the local level. Detailed financial information, however, is difficult to secure in most cases.

a. User Fees

Users contribute to NFE programs through tuition, which is reported by the institution as revenue. Of the 31 institutions, 5 charge tuition. Additionally, participants or their families are required to pay room and board in four institutions. In each case, the institution is closely aligned to formal education and to certification.

b. Other Contributions

Some industries provide direct support to a few of the NFE programs, either through donations of equipment and machinery or through financial aid. SNPP's budget is provided by the national government through a special revenue-raising plan: a 1 percent payroll tax levied in the private sector. IDM receives revenue from a 10 percent tax on all municipal land holdings in the interior of the country; 2 percent of all regular municipal taxes in the interior; a 2 percent tax on all imported alcoholic beverages; and a budget from the national government. Only 9 percent of the budget of the Instituto de Bienestar Rural is provided by the national government; the remainder comes from the sale of land to campesinos.

c. Facilities Utilization

Paraguayan NFE programs take advantage of opportunities to economize through the use of available physical facilities. In many cases, such as the Educación de Adultos, PAEN, SENASA, IDM, SEAG, and CREDICOOP, no permanent buildings are used, except for central administrative and support facilities. Instead, borrowed or rented buildings, existing MOE classrooms, farmhouses, or local municipality buildings are utilized.

d. Costs

Table XI-4 provides cost information for the programs included in this inventory. In most cases information pertinent to the annual budget has been obtained. However, unit costs have relative or limited value as the basis for comparison of programs. If the levels of costs incurred in most NFE activities are compared with those incurred in formal education programs, the latter appear to be generally lower. Limited participation and high overhead charges often inflate the unit costs of NFE activities.

NFE activities and programs often lack useful information on costs and finances. This is partly because accounting practices are not highly developed. When the programs are not institutionalized, they often take a cavalier attitude towards accounting. In addition, some institutions face the problem of imputing costs to their NFE components since the latter constitute but a portion, and indeed an implicit portion, of their overall activities.

TABLE XI-4

COST INFORMATION FOR NFE PROGRAMS IN PARAGUAY

Institution	Operating Budget	Students per Year	Cost Student	Tuition	Duration of Courses
SNPP	\$380,000	2,400	\$158.33	No	2-3 months
Escuela de Sanidad Militar	N/A	N/A	N/A	No	3-4 months
Escuela Agrícola de Villarrica	30,183	N/A	N/A	No	9 months
Instituto Politécnico Juan XXIII	11,429	211	54.16	Yes	9 months
Colegio Técnico Javier	3,968 excluding tuition	N/A	N/A	Yes	9 months
Instituto Agropecuario Carlos Pfanni	63,492	105	63.49	Yes	9 months
CENFAE	25,396	50	507.93	No	9 months
Instituto Técnico Santa Bernardita	5,555 excluding tuition	180	30.86	Yes	9 months
Escuela Técnica Salesiana Pedro Jorba	39,682	68	555.55	N/A	9 months
Instituto de Desarrollo Municipal	15,873 courses only	1,500 approximately	10.58 per course	N/A	2-3 weeks
CAES	67,460	2,692	25.05 per course	Yes	2-3 weeks
SEAC	507,936 total budget	8,000 campesinos	63.49 per year, per participant	No	3-4 days
IBR	N/A	N/A	N/A	No	1 week
CAH	214,285 for courses	3,150	68.02 per training participant	No	1 week
Fondo Rotativo de Préstamos Pastoral Social	15,873 for courses	200 families	79.36 services to families	No	Continual
Asociación Rural del Paraguay	373,015 annual	N/A	N/A	N/A	Continual
PAEN	38,095 courses	N/A	N/A	N/A	Continual
Departamento de Alfabetización y Educación de Adultos	391,312 annual budget	12,377	31.61	No	9 months
SENASA	N/A	N/A	N/A	N/A	Continual
CREDICOOP	N/A	N/A	N/A	No	1 week
IDIA	N/A	N/A	N/A	No	1 week
IADFL	23,809	3,000	7.93	No	Continual
ON/S	150,793 certain courses	1,104	136.58	No	3 weeks average
CEPEP	50,000 USAID, not total	N/A	N/A	N/A	1 week average
YMCA	142,857 annual budget	N/A	N/A	No	Variable
Misión de Amistad	30,000 USAID, not total	N/A	N/A	N/A	Continual
ODECO	24,080 annual budget	N/A	N/A	N/A	3 days average
CEFEIDI	23,809 program functions only	350	68.02	No	2 weeks
Obras Sociales Salesianas	3,968 plus tuition	N/A	N/A	Yes	3 years
Proyecto Marandú	95,238 Interamerican Foundation only	N/A	N/A	No	Continual
UNIRACO	N/A	N/A	N/A	No	Continual

The determination of unit costs is a function of such variables as type of course and activity offerings; type of delivery (whether on an extension basis or in a fixed place); the types of inputs needed to offer the courses (e.g., utilization of machinery); the duration of courses; and the level of participation. When the purposes of the activities are undefined (e.g., "contribute to individual welfare," "strengthen individual morality and teach useful skills"), the collection of economic and financial data is essentially impossible. The same rule applies when course duration is limited (e.g., a few days or weeks). Economic analysis is applicable to the measurement of the investment aspects of education, not the consumption aspects, which may be characterized in terms of individual satisfaction derived from participation in a given activity.

5. Outcomes, Benefits, and Impact

Determining benefits derived by individual trainees and the contribution of the program to rural-employment promotion and economic welfare is not possible with the information available. It has not been possible to assess whether, as a result of training, individuals benefit from increased earnings; find new employment opportunities; increase their options; or increase their efficiency and skills. Nonetheless, the following two observations may be made:

- a. NFE programs seem to offer training in those skills required to obtain jobs in local industries. Courses are designed to be content-specific; and some analyses are occasionally conducted by the programs themselves to ascertain which skills are the most marketable, or what training is most useful. For example, the SNPP non-formal education program in Itá provides agricultural information based on studies of what campesinos in that area can use.
- b. The basic education programs seem to be oriented to self-improvement and general information, but there are minimal linkages with credit, government services, and sources of supplies necessary to initiate changes learned in the courses.

The impact of NFE activities also sometimes transcends the terms of reference of individual programs. Many programs have indirect results; i.e., nutrition education accompanied by a supplementary feeding program aimed at producing healthier children. In other programs, however, direct results can be carefully measured. For example, pre-employment training should lead to a certain number of graduates with jobs at an identifiable salary level. However, such information is currently unavailable. Only one of the pre-employment training programs, SNPP, has a formal placement service to help locate jobs for its participants.

Therefore, the following discussion of the impact of NFE activities refers only to the relative size, outreach, and theoretical potential of the programs.

Of 31 NFE programs surveyed, only 3 listed over 10,000 contacts per year. Seven trained between 1,000 and 2,000 participants; two trained approximately 500; eleven trained between 100 and 200; and five had fewer than 100 participants per year. Data were not available for three programs.

Larger projects tend to be those activities with heavy support from the government; frequently, they have external financing. Many of these organizations have complex mandates, only part of which relate to NFE, thus confusing the issue of impact.

It is not known how much informal education takes place through technical contacts between program agents and users; nor whether selected NFE packages, developed around the interest and motivation created by the extension process and other delivery system, would result in increased impact. It is to be expected that the impact of NFE tends to be greater when the program is part of an ongoing system of technical assistance, with staff, resources, behavioral expectations such as improved agricultural practices, and other components, to reinforce the NFE package.

In contrast with many public sector NFE activities, which tend to have broad emphases, private groups have more focused programs in limited skill areas, such as carpentry, mechanics, and family planning. Alternatively, they are directed to a single target group such as domestics, women, etc. This narrower focus, usually explained by limited resources, results in an impact that is more visible and amenable to measurement.

Table XI-5 presents the objectives and potential benefits of NFE activities, by functional category.

C. CONCLUSIONS AND RECOMMENDATIONS

Substantive and meaningful analysis of NFE activities in Paraguay is not possible due to the paucity and irrelevance of much of the information available. By extension, the lack of information also voids the possibility of carrying out effective planning on which policy design can be based. This situation determines the first recommendation: a useful data base should be built.

The difficulties involved in carrying out such an exercise should not be underestimated, as the design of the basic research instrument requires a reasonable amount of knowledge regarding what is expected of NFE.

The first, and strong, temptation is to carry out a descriptive inventory of as many programs as possible. The need, however, is not for this kind of information, because the GOP already has access to such data. The preceding description of programs indicated critical information voids on organization, management, and delivery; financing and costs; and, particularly, benefits, outcomes, and impact. If NFE is going to be adopted as an important component of the educational development policy, the GOP should have some clear indications as to the possible costs involved, the shape of the present finance mechanism, the participation, and the outcomes.

TABLE XI-5

NEW OBJECTIVES AND POTENTIAL BENEFITS, BY FUNCTIONAL TRAINING CATEGORY

Training Category	Objectives	Potential Benefits
<u>Pre-employment</u>		
Industry technicians Commercial workers Agriculture workers Middle-level para-medicals.	<ol style="list-style-type: none"> 1. Provide practical, job-oriented training, mainly in blue-collar and service skills. 2. Train personnel in middle-level skills. 3. Prepare skilled personnel in industry, farming, commerce, etc. 	<ol style="list-style-type: none"> 1. Awards certificates which qualify participants for employment in particular skill areas. 2. Supplies country with trained middle-level technicians. 3. Increases productivity of trained personnel in country. 4. Assists in filling vacuum of middle-level technicians.
<u>In-service</u>		
Accountants Office workers Administrators Government officials Teachers	<ol style="list-style-type: none"> 1. Upgrade skills of those already employed. 2. Improve working productivity of government employees. 	<ol style="list-style-type: none"> 1. Stimulates workers to search for new work models, plan more cooperatively, and execute functions more effectively.
<u>Production</u>		
Small-scale farmers Craftmen	<ol style="list-style-type: none"> 1. Transfer technological information to improve production levels. 2. Provide supervised agricultural credit for farmers. 	<ol style="list-style-type: none"> 1. Increases national agricultural production. 2. Promotes inexpensive interaction between field agents and farmers.
<u>Basic Education</u>		
Small-scale farmers Housewives Small businessmen Cooperative members	<ol style="list-style-type: none"> 1. Teach literacy skills. 2. Widen horizons of participants and provide self-improvement skills. 3. Provide minimal learning skills. 4. Educate users in government services available. 	<ol style="list-style-type: none"> 1. Trains participants in reading, writing, and personal development. 2. Increases use of government services. 3. Increases volunteerism in community and government projects. 4. Increases productivity of small-scale farmers.

It should also be noted that whether or not the government initiates NFE policy, disaggregated efforts and activities will continue. It would be a mistake to try to centralize all activities under the aegis of one single policy effort, however enlightened that policy might be.

The terms of reference of policy should first be set. Such terms of reference include institutions and activities; their specialization, location, scope, and current participation; and their organization, management, coordination, delivery, and methodologies. On this basis, a two-pronged information-building effort should be carried out.

First, an exhaustive instrument could be developed to obtain information about all programs and activities. Such an instrument would collect information on the institutions themselves and their characteristics, including, in addition to those listed above, information on the economic aspects of the organizations, emphasizing the degree to which the organizations are able to mobilize community resources. In particular, great emphasis should be placed on collecting information on the participants, including the design of tracer studies for past participants. Their perception of the activity is important to obtain an understanding of the factors which condition motivation for participation. Information on individual characteristics is useful for determining the profile of the clientele. The quality of the information collected should allow the possibility of testing hypotheses in those areas which are amenable to quantification.

Second, the in-depth surveys should provide enough material to select a number of institutions on which case-studies should be written. The orientation of the case studies, unlike that of the surveys, should concentrate on the aspects of educational content and methodologies, interaction between instructors and participants in the learning process, and utilization of what is learned. Qualitative and evaluatory analyses should be pursued. The purpose should be to understand the teaching/learning situations in the different programs, and to establish guidelines for their improvement.

A second recommendation refers to those aspects of organization and delivery which will provide guidelines for policy design. The emphasis which the GOP currently places on the development of the Eje areas and on the Regional Education Centers indicates these are adequate starting points for formulation of NFE policy.

There is already a sufficiently developed mechanism for institutional coordination in the Consejo Nacional de Progreso Social, as well as a supervisory mechanism in the Oficina Nacional de Progreso Social. What remains to be developed is a mechanism for coordinating, supervising, and strengthening the NFE components of these activities. One of the main tasks of such a section would be to find the most efficient means of mobilizing community resources for participation; and organizing the content and sequence of the program offerings. These tasks would be facilitated by the existence of an already highly developed infrastructure for program delivery in the Eje areas.

Also, the REC's can, and should, play an important role in the NFE scheme. It has been noted that their outreach activities and impact in the community is currently very limited. The strengthening of this role requires that the REC's should become part of an integrated program which would provide the necessary guidelines for action. The REC's are in a particularly favored position to establish community-based learning resource centers, as well as training centers. They have model facilities and access to land, the best qualified teaching force, and highly motivated students; and they are located in central communities which have a radius of impact over other communities. Their location is also strategic, due to their geographical distribution throughout the country.

SECTION XII

FINANCING AND COSTS OF FORMAL EDUCATION

Education is by definition one of the largest social enterprises in any country. More than any other public activity, it touches directly the lives of the most people for the longest period of time. This section initiates the economic analysis of Paraguayan education by outlining the information and analyses required to discern the extent of the national effort, the sources and levels of educational finance, and the level, spread, and structure of educational costs.

A. THE NATIONAL EFFORT

By most traditional standards of comparison, Paraguay's public financial effort in primary and secondary education is a modest one. Furthermore, the relative effort appears to be decreasing rather than increasing. Table XII-1 shows that the Ministry of Education budget, as a percentage of GNP, declined from 1.85 percent in 1970 to 1.42 percent in 1975. On the other hand, the MOE budget as a percentage of the total government budget has remained relatively constant over time, at about 15 percent.

TABLE XII-1

MINISTRY OF EDUCATION BUDGET AS A PERCENTAGE OF TOTAL GOVERNMENT BUDGET AND GROSS NATIONAL PRODUCT

Year	In millions of guaraníes			(3/1)%	(3/2)%
	(1) Gross National Product	(2) Government Budget	(3) Ministry of Education		
1976		23,125.8	3,457.5		15.0
1975	190,438.5	18,403.5	2,709.9	1.42	14.7
1974	168,017.6	14,549.6	2,409.0	1.43	16.6
1973	125,437.0	13,335.2	2,191.8	1.75	16.4
1972	96,898.8	13,019.4	2,033.7	2.10	15.6
1971	83,735.9	10,522.2	1,477.1	1.76	14.0
1970	74,921.9	10,441.8	1,388.4	1.85	13.3

Source: Central Bank of Paraguay, Cuentas Nacionales, 1962-1975, and Ministry of Education, Anuario 1975.

While data on proportion of GNP devoted to education are not easily found, most indicators suggest that the GOP contribution is comparatively moderate. The proportion of the government budget devoted to education is also low. That percentage for some other Latin American countries is: Guatemala, 18.8 percent; Honduras, 19.4 percent; Colombia, 20.9 percent; and El Salvador, 27.6 percent.^{1/}

The Ministry of Education budget is, however, a poor indicator of national effort, for it includes programs of little educational content (for example, funding of religious institutions in Paraguay) and excludes private educational expenditures. Using data from the Educational Cost Study, more precise estimates of national effort are derived and presented in Table XII-2. ^{2/}

TABLE XII-2

THE NATIONAL FINANCIAL EFFORT IN EDUCATION, 1975

Categories	Dollars	Percent GNP
(1) Gross National Product	1,523,510.0	100.00
(2) Ministry of Education Budget	21,679.0	1.42
(3) School Expenditures	29,902.4	1.96
Primary Level	20,839.8	
Secondary Level	9,062.6	
(4) Family Expenditures	19,547.9	1.28
Primary Level	12,343.9	
Secondary Level	7,204.0	
(5) Total Educational Expenditures	49,450.3	3.24%

Source: Computed from published data in the Educational Cost Study and the Anuario 1975.

^{1/} H. M. Phillips, Basic Education: A World Challenge, John Wiley & Sons, 1975.

^{2/} Cf. MOE, Investigacion Sobre los Costos de la Educacion Primaria y Media (D. R. Winkler, Educational Cost Study), 1976.

While central government expenditures are only 1.42 percent of GNP, all school expenditures, inclusive of private sector spending, are 1.96 percent of GNP. And if school-related family expenditures are also included, the total educational effort in primary and secondary education is estimated at 3.24 percent of GNP.

Table XII-3 presents a breakdown of the latest Ministry of Education budget. Of the total MOE budget, 77 percent is actually related to educational activities.^{1/} Of the education budget, 43 percent is allocated to primary education; 10 percent is allocated to secondary education; and 18 percent is consumed by capital expenditures. Division of the budget among its various components is similar to that of some other Latin American countries. For example, the proportion of current educational expenditures assigned to primary education in Paraguay is very similar to Honduras, Nicaragua, El Salvador, and Bolivia.^{2/}

B. EDUCATIONAL FINANCE

Most schools in Paraguay receive their funding from a mixture of government and user sources.^{3/} On the one hand, the government may pay the salaries of some personnel in a private school; on the other hand, families may pay substantial tuition and fees in a public school, in addition to school-related expenditures.

1. Primary Schools

At the primary school level, the data given in Table XII-4 indicate that government finance of current expenditures ranges between 45.5 percent in rural private schools and 94.9 percent in urban public schools. While the percentage that government finances is considerably lower in private than public schools, the zone or location of the school appears to make little difference within either sector.

^{1/} The other 23 percent goes to such non-educational activities as church support, sports, and recreation.

^{2/} H. M. Phillips, op. cit.

^{3/} Government, as used here, includes the municipal and central governments. The municipal government contribution to education, however, is very small and is usually used to provide maintenance and repairs. The family, either directly or indirectly via the Comisión Cooperadora, contributes almost all the private funding for education. Businesses, private foreign groups, and religious institutions in general make only minor contributions to education.

TABLE XII-3

MINISTRY OF EDUCATION BUDGET, 1976

Government of Paraguay, General Budget		\$185,006,100
Ministry of Education, Total Budget		27,660,257
Expenditures on Education		21,429,503
Current Expenditures		
Primary Education		11,997,280
Secondary Education		2,803,800
Basic Cycle Only	\$ 597,945	
Basic and Liberal Arts <u>Bachillerato</u> Cycles	1,864,151	
Basic and Commercial <u>Bachillerato</u> Cycles	202,436	
Other	139,268	
Capital Expenditures		
Construction and Maintenance, General		487,392
Construction of 29 Schools and Repairs on 91 Schools	247,392	
Maintenance and Repairs, Aid to Comisiones Cooperadoras	240,000	
Construction and Maintenance, Partly Loan Financed		4,610,728
Secondary Schools	3,630,456	
Rural Schools	948,272	
Other	32,000	

Source: Presupuesto General de la Nación, 1976.

TABLE XII-4
PERCENT OF CURRENT PRIMARY EDUCATION EXPENDITURES FINANCED
BY THE GOVERNMENT, BY SECTOR AND LOCATION

Location	Public	Private
Rural	93.8%	45.5%
Urban	94.9%	54.1%
Asunción	94.6%	58.8%

Source: Educational Cost Study, 1976.

The existing percentage of government contribution to private education may not be optimal. It may be possible to maintain the same pupil enrollment and yet reduce the MOE total cost or outlay by altering the percentage figure. Alternatively, it may be possible to increase pupil enrollment with the current MOE budget by altering the percentage figure. For example, if the government increases its contribution, thereby allowing private schools to reduce tuition, it may find that so many students transfer from public to private schools that the total costs to the MOE will decline. Of course, total costs may also increase.

There exists some optimal government percentage contribution to private education which minimizes government costs or outlays for a given student enrollment. Unfortunately, currently existing data preclude the derivation of the price and cross-price elasticities of demand for private and public education that would allow computation of the optimal contribution. However, such data could be developed, and the resulting information would inform the government whether it should increase or decrease its contribution.

2. Secondary Schools

Schools are financed quite differently at the secondary as compared to the primary level, as shown in Table XII-5. While public schools still receive the bulk of their current revenue funds from the government, the proportion is considerably smaller than that at the primary level. Furthermore, private secondary schools receive only minimal funds from the government.

TABLE XII-5

PERCENT OF CURRENT SECONDARY EDUCATION EXPENDITURES FINANCED BY
THE GOVERNMENT, BY SECTOR AND LOCATION

Location	Public	Private
Urban	76.4%	2.4%
Asunción	60.4%	3.8%

Source: Educational Costs Study, 1976.

Again, from the point of view of minimizing total government outlays while holding enrollment constant, or maximizing total enrollments with the given government budget, the government share of costs in the private sector may not be optimal.

Using the data given in Tables XII-4 and XII-5 in combination with information on unit costs, the dollar cost to the MOE of an additional student enrolled can be determined.^{1/} For example, the cost of enrolling an additional public secondary school pupil is estimated to be \$96.85.^{2/} Yet, the cost per pupil to the Ministry of Education is only \$59.19 if new capital facilities do not have to be constructed in order to enroll the student. This figure is surprisingly close to the one obtained by simply dividing the budgetary allocation to secondary education by the number of enrolled public secondary pupils. The figure obtained using the second method is \$56.46. The cost to the MOE of enrolling pupils in the public schools at other levels is given in Table XII-6.

^{1/} The cost to the government is obtained by multiplying unit costs by the percentage of unit costs which are current costs and the percentage of current costs which are financed by the government. In the case of public, secondary education, the result is $96.85 \times .80 \times .764 = 59.19$.

^{2/} See Table XII-9.

TABLE XII-6

UNIT COSTS OF ENROLLMENT TO THE MINISTRY OF EDUCATION

Level	Public	Private
Primary	\$26.11	\$15.13
Secondary (Basic only)	\$77.15	\$ 9.77
Secondary (Basic & Diversified)	\$59.19	\$ 2.26

Source: Educational Cost Study, 1976.

The most expensive type of student to the MOE is one in a public secondary institution having the Basic Cycle only. Perhaps one reason why the high unit cost of this type of student has not been noticed is that enrollment figures for the Basic Cycle are not disaggregated according to the type of institution attended; i.e., Basic Cycle only versus a complete secondary school. Hence, even though the MOE budgets a specific amount for institutions with only the Basic Cycle, cost per pupil to the MOE cannot be directly computed.

3. Financing of Current Expenditures

Table XII-7 shows the proportion of current expenditures in each category financed by the government at the primary and secondary levels. A very high proportion of total MOE funds goes to the salaries of teachers and administrators, in both sectors and at both levels of education. Very small amounts of government funds go to maintenance and repairs and non-personnel services. Indeed, the only government contribution to maintenance occurs in public elementary schools. The sum per student paid by the MOE is 31 cents, which is less than 1 percent of total unit costs.^{1/} Expenditures for maintenance and repairs constitute approximately 1 percent of the total MOE budget; however, as noted elsewhere, only a fraction of

^{1/} This sum is obtained by multiplying unit costs by the percentage of unit costs which are current costs, the percent of current costs which are maintenance and repair, and the percent of maintenance costs which are government financed. In this case, $\$41.46 \times .67 \times .04 \times .28 = .31$.

funds intended for maintenance are actually used for that purpose.^{1/} The remaining 72 percent of public primary school expenditures for maintenance are largely derived from voluntary, parental contributions to the Comisión Cooperadora.

TABLE XII-7

GOVERNMENT FINANCING OF CURRENT EDUCATION EXPENDITURES AT THE PRIMARY AND SECONDARY LEVELS, BY CATEGORIES OF EXPENDITURES AND BY SECTOR

Sector	Total	Current Costs			
		Teacher Salaries	Administrator Salaries	Maintenance and Repairs	Non-personnel Services
<u>Primary Level</u>					
Public	94%	99%	96%	28%	0%
Private	44%	57%	70%	0%	0%
<u>Secondary Level</u>					
Public	77%	84%	92%	0%	17%
Private	2%	3%	4%	0%	0%

Source: Educational Cost Study, 1976.

4. Private Contributions

Perhaps the most striking feature about school finance in Paraguay is the large private contribution to education in both public and private schools. At the public secondary level, parents contribute almost 25 percent of total current costs, or \$17.81. In addition, parents spend \$89.90 on school-related expenditures, for a total of \$107.71, or 64 percent of total expenditures. If one were to include the opportunity costs of pupil time in these figures, the private contribution would increase still more in absolute and percentage terms. Even at the public primary level, the private contribution is \$26.17, or 50.1 percent of total costs.

^{1/} See Section X.

TABLE XII-8

TOTAL PRIVATE CONTRIBUTIONS AS A PROPORTION OF TOTAL SCHOOL AND
SCHOOL-RELATED EXPENDITURES, BY SECTOR AND LEVEL OF SCHOOLING

Level	Public	Private
Primary	\$26.17 (50.1%)	\$57.02 (78.5%)
Secondary (complete)	\$101.71 (64.4%)	\$197.07 (99.1%)

Source: Computed from data in Educational Cost Study, 1976.

C. EDUCATIONAL COSTS

1. Unit Costs

Detailed information on per pupil or unit costs is essential to estimate the costs of alternative educational plans or strategies, as well as to measure the national effort in education. Unit costs measure the monetary value to the government and society of resources used in education; they also permit an assessment of the degree of equality of educational opportunity in the nation.

Unit costs vary greatly between levels (primary-secondary), sectors (public-private), and zones (rural-urban) within Paraguay. As shown in Table XII-9, within the public sector, unit costs, inclusive of the value of capital services but exclusive of school-related expenditures by the family, vary from \$41 in primary schools to \$128 in those secondary schools having only the Basic Cycle.^{1/}

^{1/} While standard deviations are not reported in the tables and hypotheses are not formally tested, statements made about differences in average costs in this section refer to differences shown to be statistically significant in the Educational Cost Study.

TABLE XII-9
UNIT COSTS, BY LEVEL OF EDUCATION, 1975

Level	Public	Private
Primary	\$ 41.46	\$ 61.39
Secondary (Basic Cycle only)	\$128.46	\$141.63
Secondary (complete)	\$ 96.85	\$156.76
Commercial	\$122.58	n.a.
Liberal Arts	\$ 94.80	\$204.40

Source: Educational Cost Study, 1976.

Unit costs typically are higher in secondary than in primary education, due to higher teacher salaries, more costly classroom materials, extensive capital facilities, and lower student/faculty ratios.^{1/} Furthermore, the higher unit costs associated with technical education, shown in Table XII-9, are not atypical. What is unusual, however, are the very high costs associated with the Basic Cycle only category. The most plausible explanation is that the larger complete secondary schools, with an average enrollment of 231, experience economies of scale compared to the smaller schools (average enrollment of 89) offering the Basic Cycle only.^{2/} Consideration should be given to the possibility of consolidating Basic Cycle schools, either with each other or with existing schools which offer both cycles.

^{1/} Paraguay is no exception: unit costs with respect to each of the categories are higher in secondary than in primary education. Also, the official MOE salary schedule results in an hourly wage for a primary school teacher of the first category of \$.94, while the hourly wage for a secondary school teacher is \$1.12.

^{2/} Most of the empirical information reported here is derived from the Educational Cost Study. While that study did not investigate economies of scale at the secondary level, it did find substantial economies at the primary level in Paraguay.

TABLE XII-10
UNIT COSTS IN PRIMARY EDUCATION, BY SECTOR AND LOCATION

Location	Public	Private
Rural	\$38.86	\$42.60
Urban	\$48.45	\$77.98
Asunción	\$46.54	\$91.79

Source: Educational Cost Study, 1976.

As indicated in Table XII-10, unit costs in primary education vary from \$39 in rural public schools to \$92 in private schools in Asunción. Although not shown, the lowest unit costs in Paraguay (\$35) are in rural public primary schools which are incomplete; i.e., they do not offer all six grades. In every location, private schools have higher unit costs than public schools. This may result from a willingness on the part of higher income and more highly educated parents of private school students to spend more on education.^{1/}

Unit costs are also lower in rural than in urban schools, although public primary schools in Asunción spend less than urban schools outside Asunción. Lower costs in rural areas reflect larger class sizes in rural (31) than urban (28) schools; less highly qualified teachers in rural (68.8 percent first-category teachers) than urban (94.4 percent); and a higher proportion of incomplete schools in rural (64.5 percent) than urban (6.4 percent) areas. Since the salary schedule for public school teachers does not vary between urban and rural areas, highly qualified teachers prefer to locate where there are urban amenities. The \$3,000 annual premium does not appear to be sufficient to attract teachers to the rural areas.

^{1/} For example, while 18 percent of public schools investigated in the Educational Cost Study had pupils from predominantly middle and high income homes, the corresponding figure for private schools was 31 percent.

TABLE XII-11
UNIT COSTS IN SECONDARY EDUCATION, BY SECTOR AND LOCATION

Location	Public	Private
Urban	\$96.85	\$156.76
Asunción	\$98.26	\$312.70

Source: Educational Cost Study, 1976.

Unit costs in secondary education follow the same pattern as those in primary education. As shown in Table XII-11, however, the spending difference between public and private is substantially greater than that at the primary level. In the public sector, there is almost no disparity between schools in Asunción and those in towns in the interior; but in the private sector, twice as much is spent inside Asunción, where most of the prestigious private schools are located.

2. Social Costs

The social costs of education include family expenditures on textbooks, transportation, clothing, and the school lunch (merienda). Table XII-12 shows that such expenditures range from \$20 in rural public primary schools, to \$129 in private secondary schools in Asunción.^{1/} The pattern of these expenditures almost precisely follows that of unit costs. Family expenditures are higher in private than in public schools, because more texts, materials, and supplies are required of the student; also, school dress may be more expensive, and dress codes more rigidly enforced. Differences between expenditures in urban and rural areas are due in part to transportation costs, which may also partially explain the disparity between Asunción and other urban areas.

While Table XII-12 does not break expenditures down into their components, it is estimated that the cost of textbooks alone ranges from about \$5 per pupil in first grade, to more than \$40 in twelfth grade.^{2/}

^{1/} These figures, derived from the Educational Cost Study, reflect the cost if pupils purchase the required materials and attend school regularly, usually taking public transportation in urban areas. Since all students do not purchase texts, etc., especially in rural areas, these figures are upward-biased estimates of actual expenditures.

^{2/} ABC Color, February 27, 1977.

It is also estimated that the average public primary student in Asuncion pays \$3.50 monthly for transportation, \$2.60 for school lunches, and a minimum of \$1.60 for school supplies. ^{1/}

TABLE XII-12

SCHOOL-RELATED EXPENDITURES BY THE FAMILY, BY LEVEL, SECTOR AND LOCATION

Location	Primary		Secondary	
	Public	Private	Public	Private
Rural	\$20.32	\$24.30	n.a.	n.a.
Urban	\$35.79	\$38.29	\$89.90	\$104.90
Asunción	\$56.97	\$56.91	\$90.99	\$129.06

3. Structure of Costs

The unit costs of education can be broken down into several components, with the primary distinction drawn between current and capital costs. Table XII-13 provides this disaggregation for the primary and secondary levels. Capital services, which include the imputed rent of both buildings and school equipment, constitute 33 percent of the total value of services received by pupils in public primary schools. This high proportion is due in part to the short life span attributed to many existing buildings. The percentage is even higher for private primary schools; this reflects the existence of better facilities, as well as the difficulties in determining the value of capital services when private school buildings serve other purposes (i.e., religious in addition to secular education). Although capital services constitute a smaller percent of total unit costs in secondary education, the actual dollar figures are considerably higher, due to greater unit costs. Higher absolute expenditures reflect the more extensive capital facilities required at the secondary level.

^{1/} Sendero, March 4, 1977.

TABLE XII-13

UNIT COSTS IN PRIMARY AND SECONDARY EDUCATION, BY CATEGORY OF EXPENDITURE AND SECTOR

Sector	Total	Teacher Salaries	Current Costs			Non-Personnel Services	Total Capital Costs	Total	Capital Costs	
			Adminis- trator Salaries	Mainte- nance and Repair					Build- ing	Equip- ment
<u>Primary Level</u>										
Public	100%	83%	11%	4%	2%	33%	100%	67%	33%	
Private	100%	60%	17%	16%	6%	44%	100%	87%	13%	
<u>Secondary Level</u>										
Public	100%	69%	19%	9%	3%	20%	100%	87%	13%	
Private	100%	59%	16%	13%	12%	40%	100%	79%	21%	

Source: Educational Cost Study, 1976.

Salaries of teachers and administrators represent the bulk of current cost. For example, they constitute 94 percent of public primary current costs; 77 percent of private primary; 88 percent of public secondary; and 75 percent of private secondary.

The most striking differences in the composition of current costs occur with respect to expenditures for maintenance and repairs and non-personnel services such as classroom supplies, electricity, and water. Both public and private secondary schools spend almost twice as much in percentage terms as do their counterparts at the primary level. This perhaps reflects differences in teaching methods and instructional materials between the two levels. Also at both educational levels, private schools spend larger amounts, in percentages and absolute terms, than public schools on maintenance and non-personnel services. This is not surprising, as a significant proportion of the funds for maintenance in the public sector are derived from voluntary contributions of parents; and the size of the total budget leaves little for the purchase of non-personnel services after the teaching and administrative salaries are paid.

SECTION XIII

ECONOMIC ANALYSIS:

SOCIAL EQUITY AND INTERNAL EFFICIENCY OF FORMAL EDUCATION

A. EQUALITY OF OPPORTUNITY

Equality of educational opportunity within Paraguay can be defined and measured in many different ways: annual and lifetime resources received by pupils, opportunity for schooling, and educational outcomes such as years of schooling, repetition rates, promotion rates, and objective measures of learning. All of these measures are used in this section to assess equality of opportunity between pupils in rural and urban areas, private and public schools, and the various regions of the country. Emphasis, however, is given to financial resources received by children under the assumption that such resources are positively and significantly related to learning and that learning is positively related to future income and welfare.^{1/}

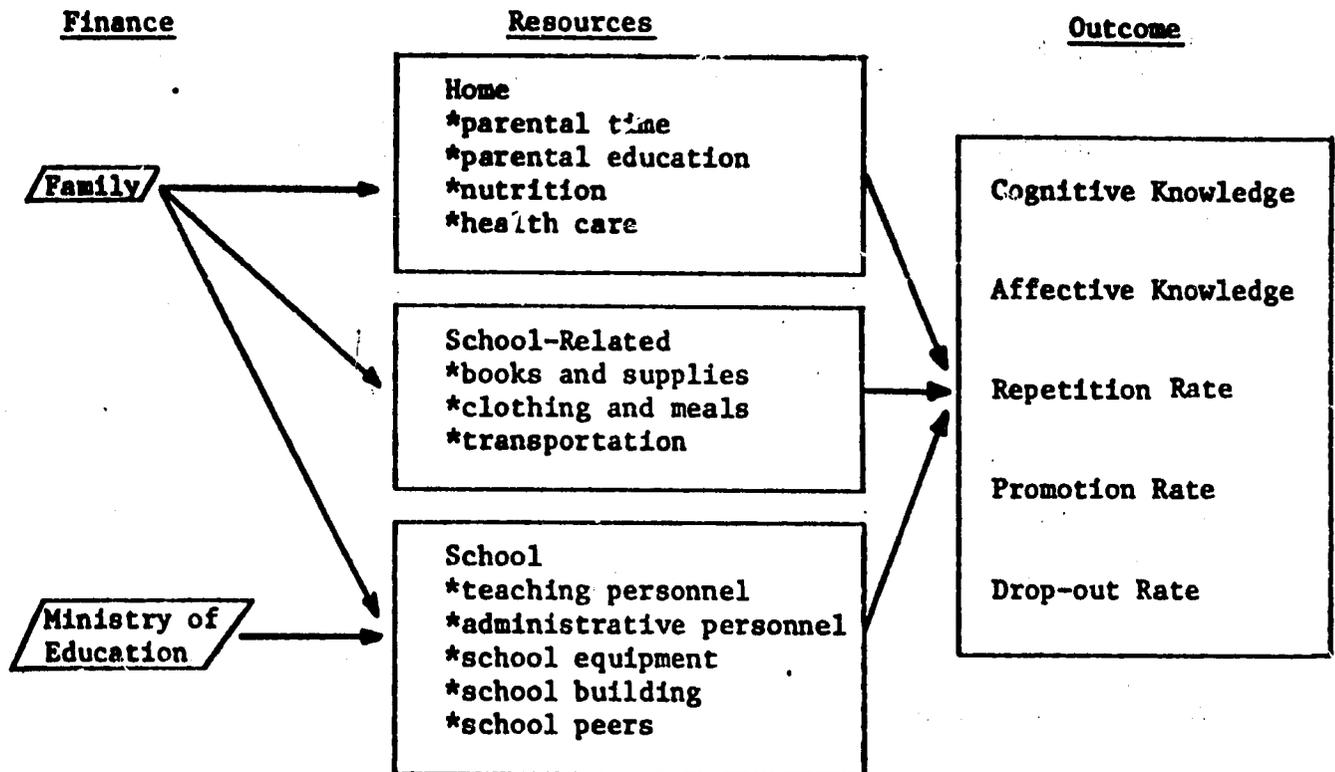
A model which describes how resources affect learning is given in Chart XIII-1. Resources can be grouped into three categories: those provided by the school (mainly the teacher, the building, and the school peers); those provided by the family for use in the school (principally books and supplies); and those provided by the family within the home. Home resources include the quantity of time parents spend in learning activities with children; the quality of that time, which is usually correlated with parental education; nutrition; health care; and various learning stimuli, such as books found in the home.

If educational outcomes are used as the measure of equality of opportunity, complete equality must be defined as equal outcomes (knowledge acquired, years of schooling, etc.) among all groups of children. If the home characteristics indicated in Chart XIII-1 are particularly deficient, the policy implication is that resources provided by the school should compensate for that deficiency. In other words, measuring equality of opportunity by educational outcomes implies that school resources should not be equal between groups of Paraguayan children. Rather, they should be larger for the children with the lowest income homes and the least educated parents.

^{1/} Research in the United States and other countries has usually found a positive, statistically significant relationship between school resources and cognitive learning. The size of that effect, however, is sometimes small. For example, see John Simmons (ed.), Investment in Education: National Strategy Options for Developing Countries, 1976, and Donald R. Winkler, The Production of Human Capital: A Study of Minority Achievement, 1977. U.S. research has also typically found a small, but statistically significant relationship between cognitive learning and future income.

CHART XIII-1

SOURCES OF EDUCATIONAL FINANCE, RESOURCE
DEVELOPMENT, AND EDUCATIONAL OUTCOMES



1. Primary Education

As shown in Chart XIII-1, Paraguayan children receive resources from two sources: the school itself and the home. The unit cost figures given in Section XII state the monetary value of resources provided annually by the school. The family expenditure figures, which are also given, state the monetary value of school-related resources provided by the family each year.

The statistically significant differences can be briefly summarized. In terms of school resources, children in urban schools receive more (\$57.26) than children in rural areas (\$39.32). However, children in Asunción do not receive more than children in other urban areas. Children in private schools receive more (\$61.39) than children in public schools (\$41.46). An analysis of variance suggests there are also regional

differences in resources received, but they largely mirror the private-public, urban-rural composition of the Departments.^{1/}

In terms of school-related expenditures by the family, similar conclusions can be made: higher expenditures in urban (\$40.22) than rural areas (\$20.80); higher expenditures in Asunción (\$56.97) than other urban areas; and higher expenditures in private (\$38.28) than public schools (\$24.50). Again, there are also regional differences; the Departments of Misiones, Ñeembucú, Caaguazu, and Alto Paraná have higher expenditures than other Departments in the country.

Urban children also fare much better than rural children in terms of opportunities for schooling. Only 6.4 percent of urban primary schools are incomplete, compared to 64.5 percent of rural schools. However, there is no sizeable difference between public (53 percent incomplete) and private (56.1 percent incomplete) schools.

Children in urban schools have more advantages than children in rural schools in almost every measure of educational outcomes; the same is true for children in private schools, as compared to public schools. Table XIII-1 summarizes these differences.

The only measure which is approximately equal in all cases is the drop-out rate; the difference is statistically significant only between high-income and low-income students. On the other hand, most of the other differences between high and low income students are statistically significant only at a low level of confidence.

Lastly, pupils in Asuncion do better on objective tests of cognitive achievement, both verbal and science, than do pupils in rural areas. Also, pupils in private schools do better than those in public schools; the only exception is within rural areas where the difference is not statistically significant. Table XIII-2 demonstrates these findings with respect to verbal achievement.^{2/}

In summary, by any definition employed, there is not equality of educational opportunity at the primary level in Paraguay. The advantaged groups are children in urban areas, private schools, and from high-income families. The disadvantaged groups are children in rural areas, public schools, and from low-income families. It should be noted, however,

^{1/} A simple regression of verbal and science test scores on the dollar value of resources received by children in Paraguay shows a strong and statistically significant relationship. Cf. Determinantes del Rendimiento Educativo, CPES/CEPADES, 1976.

^{2/} Raw scores are reported. The properties of the testing instrument are given in Claudio Castro, Modelos Analíticos de Utilización, Memo Técnico No. 9, ECIEL, 1975.

TABLE XIII-1

EDUCATIONAL OUTCOMES IN PARAGUAY, BY
SCHOOL SUPPORT, LOCATION, AND AVERAGE FAMILY INCOME, 1975

	<u>Location</u>		<u>Support</u>		<u>Income Level</u>	
	<u>Urban</u>	<u>Rural</u>	<u>Public</u>	<u>Private</u>	<u>High-Income</u>	<u>Low-Income</u>
Percent Repeaters ^{2/}	11.5%	18.2%	15.4% ^{1/}	8.0% ^{1/}	9.2% ^{1/}	15.1% ^{1/}
Percent Drop-outs	7.5%	10.2%	8.8%	10.4%	5.0%	10.0%
Probability of ^{3/} Passing Grade 4	.60	.29	.38	.47	n.a.	n.a.
Probability of ^{3/} Passing Grade 6	.48	.15 ^{5/}	.24	.42	.44 ^{1/}	.31 ^{1/}
Average Years ^{4/} of Schooling	4.36	3.21	3.49	4.58	n.a.	n.a.

^{1/} Unpublished data from the Educational Cost Study. Figures for pupils from predominantly high and low income families are for urban public schools only.

^{2/} Drop-outs are defined as pupils who enter school in a given year but leave school sometime during that year.

^{3/} Number of grade four (six) pupils that pass the final exams, divided by the number of grade one pupils enrolled four (six) years earlier. No statistical test of significance.

^{4/} Total enrollment divided by grade one enrollment. No statistical test of significance.

^{5/} This low figure cannot be explained by lack of opportunity for schooling. Within complete schools, the ratio of grade six to grade one enrollment is .36 in urban and .14 in rural areas, for the sample covered by the Educational Cost Study.

that differences between the public and private sectors are not nearly as great in rural areas as they are in urban areas.

2. Secondary Education

The inequalities existing at the primary level are largely repeated at the secondary level. Since all secondary schools are located in urban areas, there can be no breakdown between rural and urban; but analysis of resource and outcome data indicates children in private schools are substantially better off than children in public schools.

TABLE XIII-2

READING ACHIEVEMENT, GRADES FOUR AND SIX, BY SECTOR AND LOCATION

	<u>Grade Four</u>		<u>Grade Six</u>	
	<u>Public</u>	<u>Private</u>	<u>Public</u>	<u>Private</u>
Asunción	13.48	16.56	17.08	20.86
Rural	8.49	9.00	8.78	8.48

Source: Determinantes del Rendimiento Educativo, CPES/CEPADES, 1976.

In terms of school resources, children in private schools receive substantially more (\$156.76) than children in public schools (\$96.85), especially in Asunción, where children in private schools receive more than three times the resources of those in public schools. Differences in school-related expenditures by the family are not as great, but the same conditions hold. Children enrolled in private schools receive more resources than those in public schools, both in urban areas in general and in Asunción alone.

Repetition, desertion, and promotion rates are less meaningful measures of outputs than at the primary level. It is common for pupils to drop out and return to school at a later age, or to change schools, either within or between years. Analysis of such rates is further hindered by the lack of official statistics.

However, results of objective examinations of cognitive achievement show what might be expected: children in private schools have higher achievement in verbal subjects than those in public schools. As shown in Table XIII-3, however, the difference in science achievement scores is small and not statistically significant.

TABLE XIII-3
READING AND SCIENCE ACHIEVEMENT, GRADE 12, BY SECTOR

<u>Reading</u>		<u>Science</u>	
<u>Public</u>	<u>Private</u>	<u>Public</u>	<u>Private</u>
15.56	18.49	11.13	11.82

Source: CPES/CEPADES, op. cit.

3. Lifetime Resources Received

In addition to variations in annual resources received and in educational outcomes, equality of opportunity can be measured on a more aggregated basis. One such measure is the total financial resources received by pupils over the length of their school experience. Average years of education received in primary school were given in Table XIII-i. Multiplying these numbers by the corresponding unit costs, it is possible to obtain the financial resources received by pupils over all of primary school. The results reinforce the earlier conclusions. Children in private schools receive almost double (\$281.17) the total primary school resources received by children in public schools (\$144.70). Children in urban areas receive almost double (\$249.65) the resources received by children in rural areas (\$126.22). And children in Asunción receive considerably more resources (\$337.14) than children in any other part of the country.

Using census data on the average years of education received by children in the age group 15-19, it is possible to estimate total resources received in both primary and secondary education. These figures are biased downwards because some of the children in the age group are still enrolled in secondary school. However, to take a later age group runs the risk of figures contaminated by rural-urban migration of the young; such figures would not as accurately reflect educational opportunities. The education and total resources figures are given in Table XIII-4.

TABLE XIII-4
LIFETIME RESOURCES RECEIVED IN PRIMARY AND SECONDARY EDUCATION, BY LOCATION OF CHILD'S FAMILY

	<u>Urban</u>	<u>Rural</u>	<u>Asunción</u>
Years of Education, Age Group 15-19	6.3	4.0	6.8
Financial Resources Received	\$379.46	\$157.28	\$485.49

The financial resource figures are also biased downwards, especially for urban and Asuncion children, due to the method of computation employed.^{1/} However, the result provides a fairly reliable index of total resources received. Again, children born in Asuncion receive more lifetime resources than children in urban areas, and they receive more than three times as many resources as children born in rural areas.

B. INTERNAL EFFICIENCY

An institution can be said to be internally efficient when it either maximizes output for a given cost or budget, or minimizes cost for a given output. Costs are usually readily determined; the problem with determining efficiency in educational institutions is consensus on and measurement of output.

Educational output has two components: quantity and quality. Quantity can be defined as the number of students enrolled or the number passing some given examination or grade level. Quality is the contribution of the school (educational value added) to knowledge, in the cognitive domain, or to changes in attitudes and behavior, in the affective domain.

Little information exists in Paraguay with respect to quality of schooling. Quality in the cognitive domain is usually measured using time series data on standardized examinations. Except for the sample of pupils used in the ECIEL study, Determinantes del Sistema Educativo, that information does not exist in Paraguay. Furthermore, changes in test scores over time, while providing a measure of learning, do not measure the independent contribution of the school. Many factors contribute to learning, and the independent contribution of the school can be determined only by controlling for those other contributory factors.

Given the limitations on qualitative data in Paraguay, this analysis relies primarily upon data on quantity, including the number of enrollees, repeaters, and deserters, in assessing the internal efficiency of the educational system. Implicit in this analysis then is the assumption that all schools provide education of equal quality. Furthermore, while it would be desirable to analyze public and private education independently, official statistics do not always allow this distinction to be made.

^{1/} Financial resources received equal six times the unit cost of primary education plus the remainder (e.g., .3) times the unit cost of secondary education.

1. Measurement

When a public institution is internally efficient, the following condition holds true:

$$\frac{\text{Marginal Social Benefit}_i}{\text{Price}_i}$$

$$\frac{\text{Marginal Social Benefit}_j}{\text{Price}_j}$$

if i and j refer to two inputs used in producing a given output (i.e., any student enrollment), the ratio of the marginal output to the price of the input should be equal for both inputs. For example, suppose input i is teachers and input j is administrators. Adding one teacher to the system may cost \$100 per year and permit increased enrollment of 30 pupils. Adding one administrator to the system may cost \$150 per year; but it may save teachers from doing administrative tasks, and thereby permit increased enrollment of 50 pupils. If one were then to compute the ratio given above, one would have:

$$\frac{30}{\$100} < \frac{50}{\$150}$$

and the school system is not operating efficiently, because enrollment could be increased by hiring fewer teachers and more administrators.

The subscripts i and j may also refer to two different schools. For example, suppose i is an urban school and j is a rural school, and the objective is still to maximize enrollment. It may cost society or the government \$50 to educate the urban student and \$40 to educate the rural student. In this case, the marginal social benefit is one student enrolled in each case but the costs differ, resulting in the computation:

$$\frac{1}{\$50} < \frac{1}{\$40}$$

Assuming the quality of education is identical in urban and rural schools, this result says the system is not internally efficient, for it could enroll more students than it actually does with its present budget. Five rural pupils could be enrolled for every four urban pupils.

The problem with applying this internal efficiency rule is that, on the one hand, the productivity of teachers and administrators is not really known; on the other hand, urban and rural schools may not provide equal quality education. Still, keeping these caveats in mind, something can be learned by carrying out the analysis.

2. Educational Efficiency in Paraguay

Cohort flows and the associated yearly unit costs provide estimates of the apparent efficiency of the educational system, in terms of the amounts and productivity of the resources utilized in the production of education.

The Paraguayan system of formal education has as one of its objectives the production of primary finishers. In the ideal standard established by law, intake and retention should both be universal. In addition, although this is only tacitly implied, the system should spend only the amount of student years necessary to take each individual from grade one to grade six, without incurring waste through desertion or repetition.

The elaboration of student flows is made difficult by the fact that students can not be traced individually; nor can individual cohorts be isolated entirely from the rest. In any given year, enrollment includes new entrants, who may include transfers from one location to another in the system; repeaters for the first, second, or n-time; and "returnees."^{1/}

Analysis of time series on enrollment, repetition, desertion, and promotion reveals that the holding power of urban schools is, as expected higher than that of rural schools. These results, however, must be interpreted with a great deal of care. The time series profiles included in the statistical appendix show that gross retention (which is obtained by dividing the number of fourth and sixth grade finishers by the total enrollment in the first grade without allowing for repetition) is substantially higher in the urban schools: on the average a little over one-third of rural students finish the fourth grade, while three-fourths of urban students do so. In the sixth grade the proportions are approximately one-third vs. one-half. However when an individual cohort is isolated and two repetitions are allowed for, the performance of the two sectors becomes more nearly equal. Repetition is substantial in rural schools, but it is also present in urban schools. In both areas the number of finisher-repeaters with two repetitions is higher

^{1/} The data used for the elaboration of the time series are from the MOE statistical series. The following information was collected: (a) enrollments by grade and year; (b) repeaters, defined as those who were not promoted from one grade to the next and who enrolled in the same grade in the next year; (c) promotions; and (d) deserters. The series begins with the first grade in 1968 and picks up an additional cohort in each succeeding year. It is assumed that enrollment is made up of "new entries" (those promoted from the previous grade) plus repeaters (who can be more than one-time repeaters). As may be expected, there are differences between the number of promovidos (those who are promoted) in a given grade and those who appear in the next grade's enrollment figure. In the model used, when the difference between promotion from grade g in year t and enrollment in grade $g + 1$ in year $t + 1$ is positive, this signals "recycling" or return of students into the system. A negative difference indicates an additional loss of students who may have been promoted but who failed to return. By comparing the figures obtained for the urban and rural areas, it may

than the number of those with one repetition, which in turn is higher than the number of those who finish without repeating.^{1/}

The results of the cohort analysis are provided in Table XIII-5.^{2/} Repetition causes the student/year count to be higher in the rural areas up to the fourth grade but this situation is reversed, albeit slightly, in the sixth grade. Urban performance in terms of production of finishers is higher than rural performance. This is reflected in the student/year counts and in the number of years it takes to produce a fourth and sixth grade finisher: 10.40 vs. 11.77 in the sixth grade and 6.75 vs. 7.30 in the fourth grade. The differences are not as great as in other countries in Latin America.

be possible to establish, for instance, the extent to which rural desertion is in fact a transfer from the rural to the urban areas (e.g., as a result of migration). The effectiveness of the model in tracing the actual cohort flows is based on the quality of the data. In this regard the Paraguayan data for the urban areas are not entirely satisfactory. The enrollment series, for instance, shows urban enrollment actually declining from 1971 (202,592) to 1976 (193,722). The steady growth pattern of overall enrollment (approximately 2.9 percent per annum) breaks down in 1973 (451,530), 1974 (454,853) and 1975 (452,249), to resume in 1976 (467,552).

These problems arise for a number of reasons. First, the system of data collection is unsatisfactory, as is the processing of the information. Second, due to the peculiar definition of urban and rural, and the development policy based on dispersion of the population to the settlement sites and development poles, it is possible that "urban" to rural migration is in fact taking place. Third, enrollments in the urban areas prior to 1972 may have been overstated. School principals are motivated to keep their teacher assignments (a minimum of 20 students is required for the MOE to assign a teacher to a given grade in a given school) in the face of migration trends which result in population "expulsion" from urban areas in the departments of Cordillera and Paraguari (see Sections IV and V). Since 1972 a more careful monitoring and control mechanism has been imposed on the process of determining student enrollments by school.

^{1/} This results are consistent with Schiefelbein's findings cited in Section VII, regarding the under-estimation of repetition in Paraguay.

^{2/} The individual cohort were "isolated" from the time series by a simple probability method which determined the flow by reference to the proportions of individuals in given categories (e.g., repeaters, deserters, etc.). The calculations of student/years were made utilizing the UNESCO methodology.

TABLE XIII-5

COHORT PERFORMANCE IN URBAN AND RURAL AREAS, 1968-1975

•	<u>Total Student/Year Count</u>	<u>Urban</u>	<u>Rural</u>
	4th Grade	3,845	3,915
	6th Grade	5,041	5,026
•	<u>Student/Year Count with Apparent Return 1/</u>		
	4th Grade	2,805	2,740
	6th Grade	3,466	3,081
•	<u>Student/Year Count with No Apparent Return 2/</u>		
	4th Grade	1,040	1,175
	6th Grade	1,575	1,945
•	<u>Number of Years Required to Produce a Finisher</u>		
	4th Grade	6.75	7.30
	6th Grade	10.40	11.77

1/ Includes those who finished the prescribed course of studies.

2/ Includes those who dropped out before fulfilling the required cycle.

a. Cost Effectiveness in Urban and Rural Schools

Using cost and cohort flow information, it is possible to derive a simulated financial flow which indicates: (a) the overall cost of putting through a cohort; (b) the costs of producing finishers; (c) the costs incurred in desertion and repetition; and (d) the associated levels of apparent cost-effectiveness.

The results obtained from performing such an exercise are given in Table XIII-6 and XIII-7 and may be summarized as follows:

1. For each cohort of 1000 initial entries the educational system spends:

- in the urban areas: \$213,437 through the fourth grade and \$279,272 through the sixth grade.

TABLE XIII-6

SIMULATED FINANCIAL FLOW, BASED ON COHORT PERFORMANCE IN PARAGUAY PRIMARY SCHOOLS - RURAL/PUBLIC

Number of Years of Schooling	Cost Attributed to Desertion by Grade in Primary Schools						Cost Attributed to Finishers		
	1st Grade	2nd Grade	3rd Grade	4th Grade	5th Grade	6th Grade	4th Grade	5th Grade	6th Grade
1	5,812								
2	3,132	5,011							
3	1,409	3,876	4,228						
4		2,192	4,541	3,915					
5			3,328	3,524	2,545		26,152		
6				4,933	4,463	2,584	32,495	24,273	
7					6,029	3,563	48,624	33,826	24,195
8								59,743	35,352
						10,962			61,074
Total Costs Attributed to:									
Deserters	10,453	11,079	12,098	12,372	13,037	17,109			
Cycle Finishers									
Accumulated Costs		21,532	33,630	46,002	59,039	76,148	107,271	117,842	120,621
Costs of Repetition of Cycle Finishers									
Repeater Costs as a Proportion of Finisher Costs							81,119	93,567	96,426
Deserter Costs as a Proportion of Finisher Costs:							76%	75%	80%
Grade Specific Cost				12%	11%	14%			
Accumulated Cost				35%	50%	63%			
Total Costs							153,273	176,881	196,769
Unit Costs:									
a) Per Finisher							284	364	461
b) Yearly Unit Cost							71	73	77

Source: Calculated from cohort flow and cost data, MOE Department of Planning.

TABLE XIII-7

SIMULATED FINANCIAL FLOW, BASED ON COHORT PERFORMANCE IN PARAGUAY PRIMARY SCHOOLS - URBAN/PUBLIC

Number of Years of Schooling	Cost Attributed to Desertion by Grade in Primary Schools						Cost Attributed to Finishers		
	1st Grade	2nd Grade	3rd Grade	4th Grade	5th Grade	6th Grade	4th Grade	5th Grade	6th Grade
1	9,159								
2	3,442	6,994							
3	999	3,664	5,662						
4		1,776	5,773	5,329			47,961		
5			3,886	6,384	5,551		50,792	43,853	
6				4,663	5,329	2,998	56,953	55,621	44,297
7					5,662	4,274		74,994	60,617
8						5,329			87,484
Total Costs Attributed to:									
Deserters	13,600	12,434	15,321	16,376	16,542	12,601			
Cycle Finishers							155,706	174,468	192,398
Accumulated Costs		26,034	41,355	57,731	74,273	86,874			
Costs of Repetition of Cycle Finishers							107,745	130,615	148,101
Repeater Costs as a Proportion of Finisher Costs							69%	75%	77%
Deserter Costs as a Proportion of Finisher Costs:									
Grade Specific Cost				11%	12%	.07%			
Accumulated Cost				37%	57%	67%			
Total Costs							213,437	248,741	279,272
Unit Costs:									
a) Per Finisher							374	480	575
b) Yearly Unit Cost							94	96	96

Source: Calculated from cohort flow and cost data, MOE Department of Planning.

- in the rural areas: \$153,273 through the fourth grade and \$196,769 through the sixth grade.
2. These total expenditures can be broken down between finishers and deserters as follows:
 - in the urban areas: in the fourth grade, \$155,706 (73 percent) for finishers and \$57,731 (27 percent) for deserters; in the sixth grade, \$192,398 (69 percent) for finishers and \$86,874 (31 percent) for deserters.
 - in the rural areas: in the fourth grade, \$107,271 (70 percent) for finishers and \$46,002 (30 percent) for deserters; in the sixth grade, \$120,621 (61 percent) for finishers and \$86,874 (39 percent) for deserters.
 3. On a per unit basis, the output of fourth and sixth grade accumulated over four and six years is valued at the following dollar cost:
 - in the urban areas: \$374 and \$575, respectively.
 - in the rural areas: \$284 and \$461, respectively.
 4. For each additional year that a student stays in the system in the urban areas, approximately \$96 is spent if the student is expected to graduate. In the rural areas the amount is about \$74. To the extent that the student flow improves, the efficiency cost per unit declines, although actual outlays may in fact increase.

These financial simulation exercises indicate that the greatest cause of inefficiency is repetition. The major source of financial waste is repetition that ends in desertion before the fourth grade. The expenditures incurred in repetition of those students who finish either fourth or sixth grade are also significant, in both urban and rural areas.

On the basis of these flows, and assuming equality of educational quality in urban and rural schools, it appears that rural schools are more cost-efficient than urban schools. The rural schools spend 5,026 student/years to produce 427 sixth-grade finishers. If they were to produce the same output as the urban schools (486), an expenditure of 5,720 student/years would be needed (i.e., $486 \times 5,026 \div 427 = 5,720$). Assuming that the unit costs remain at \$39, the production of 486 sixth grade finishers would require \$223,080 in total outlays. This amount is \$56,192 lower than the amount currently required to produce that number of finishers in urban schools, given a unit cost of \$56 in those schools.

SECTION XIV

ECONOMIC ANALYSIS: EXTERNAL EFFICIENCY IN THE PRODUCTION AND UTILIZATION OF EDUCATIONAL OUTPUT

The analysis of external efficiency complements that of internal efficiency in that it deals with the issues of distribution and content of education (i.e., the shape of the educational pyramid), and the utilization of educational outcomes through economic participation. Central to the notion of external efficiency is the private and social utility of education, which can be measured in terms of economic returns.

It is not easy to discern the economic nature of education. Furthermore, the social utility of education transcends the limits conventionally imposed by economic analysis. Substantial evidence exists which corroborates the strong association between educational and overall development, but the direction of causality involved in this relationship is by no means clear or unambiguous.

Paraguay's development goals were earlier synthesized in terms of growth and equity. To the extent that education has an impact on labor productivity, it has, by definition, a positive impact on national income growth. It is also postulated that at the individual level, education provides the "educated person" with knowledge and skills which acquire higher scarcity value as he or she reaches higher levels in the educational pyramid. Therefore, depending on the distribution of educational opportunities in different groups of the population and on the associated income opportunities, education can have an impact on the second objective, which may be defined in terms of a more equal distribution of income.

Following these considerations, this section examines the external efficiency of Paraguayan education by reference to the distribution of educational output and the impact of education on the economic participation of different groups.

A. DISTRIBUTION OF EDUCATIONAL OUTPUT

The identification of the distribution of educational output introduces a perspective on the analysis of the impact of education on individual earnings. That is to say, it helps to establish the fundamental point that education is one of the determinants of individual earnings and, therefore, it behooves the analyst to understand how the education is distributed throughout the population.

The analysis of internal efficiency examined the issues of educational distribution under the sections on educational participation, costs, and equality of opportunity. The results obtained affirm the existence of a common enough situation: educational outcomes, whether they are measured in terms of school flow (intake and retention) or achievement, have a skewed distribution. The existing distribution determines that those who are favored in terms of socio-economic background continue to be favored by the system.

Chart XIV-1 contrasts the participation in school by age group and location in 1975. While the graph portrays a cross-section, it may also be interpreted as an implicit flow; depicting, however roughly, probability functions of an individual's school experience. No grades are indicated, to avoid dimensional problems. If these were shown, the curves, particularly the rural curve, would become even more skewed to the left. The scale of the ordinate also demonstrates that the problem of participation is most acute in the rural areas, both from the perspective of opportunities currently available and the absolute effort required to provide greater educational opportunity. Rural participation in formal education, it may also be observed, is limited to the primary level. This offers an additional contrasting view of the kinds of output produced by the system regarding the knowledge and skills generated.

Chart XIV-2 shows, for the entire population, the educational attainment by age group in the urban and rural areas. The bars, drawn to approximate scale, show for each group the percentages of individuals who have had no instruction, or who have attained primary, secondary, or higher education.

The results obtained reaffirm the educational contrasts between urban and rural areas, and between the younger and older age groups. Educational coverage in the rural areas is essentially at the primary level.^{1/} In the active labor force (in this case, the group included in the 30 and over bracket), the figures indicate that almost one-third of the individuals have had no instruction, while over two-thirds have had varying degrees of primary education.

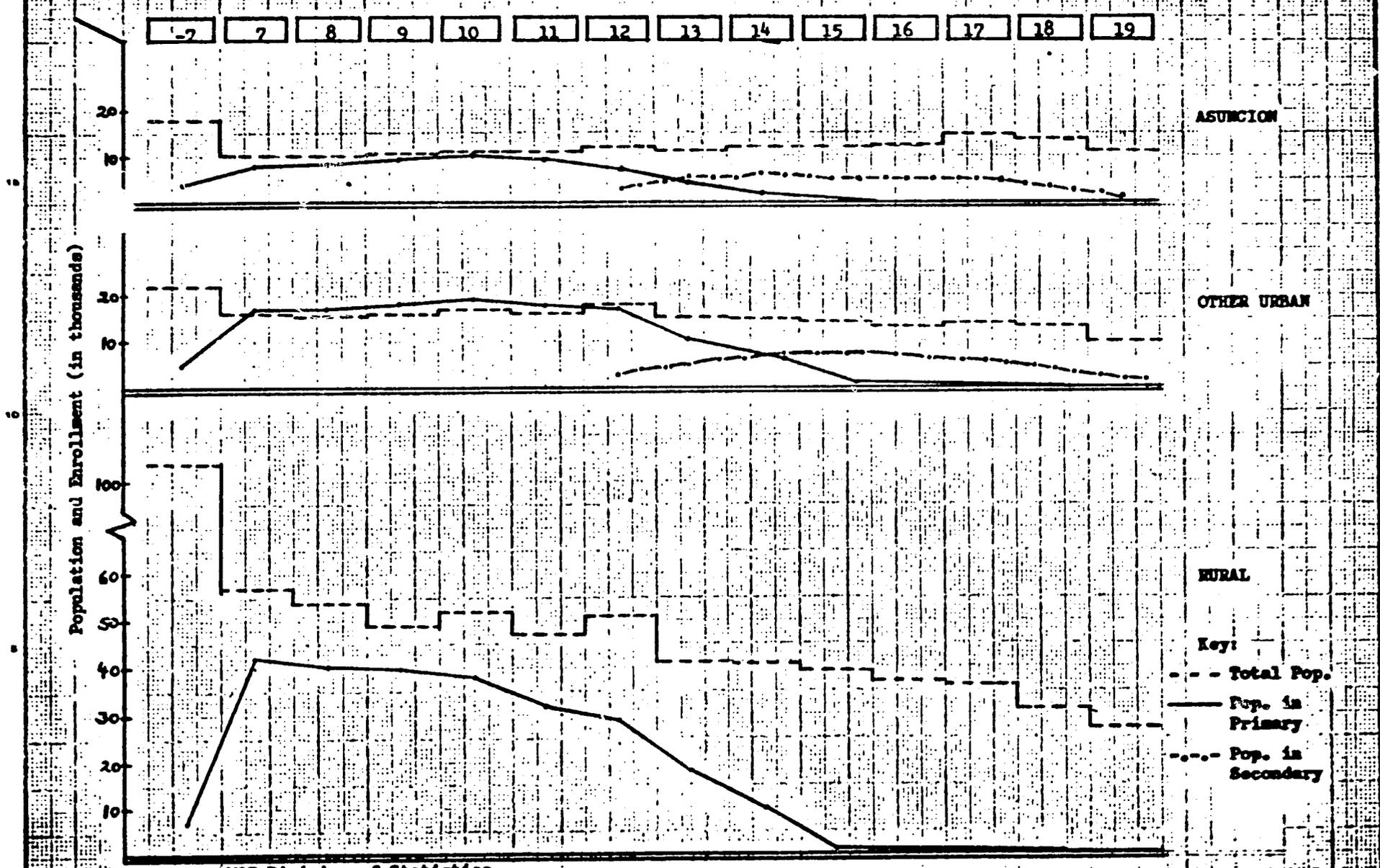
Taking the younger age cohorts (7-9 and 10-14) in both the urban and rural areas, the resulting distribution indicates that significant progress has been made in making educational opportunity available in the rural areas in the 5 or 10 years preceding the census. Two-thirds of children aged 7 to 9 have been absorbed by the educational system in the rural areas, as opposed to a little over three-fourth in the urban areas.^{2/} These calculations are consistent with initial delays in entering the system but, as Chart XIV-1 indicates, this situation had improved significantly by 1975.

^{1/} While the figures reported in Chart XIV-2 represent a cross-section and not a student flow, they do indicate that for each rural student who proceeds to the secondary level, ten urban students effect this transition.

^{2/} The active expansion of educational opportunities during the more recent period is also reflected in the increase in coverage of primary from 83 percent for the 15-19 cohort, to 90 percent for the 10-14 cohort.

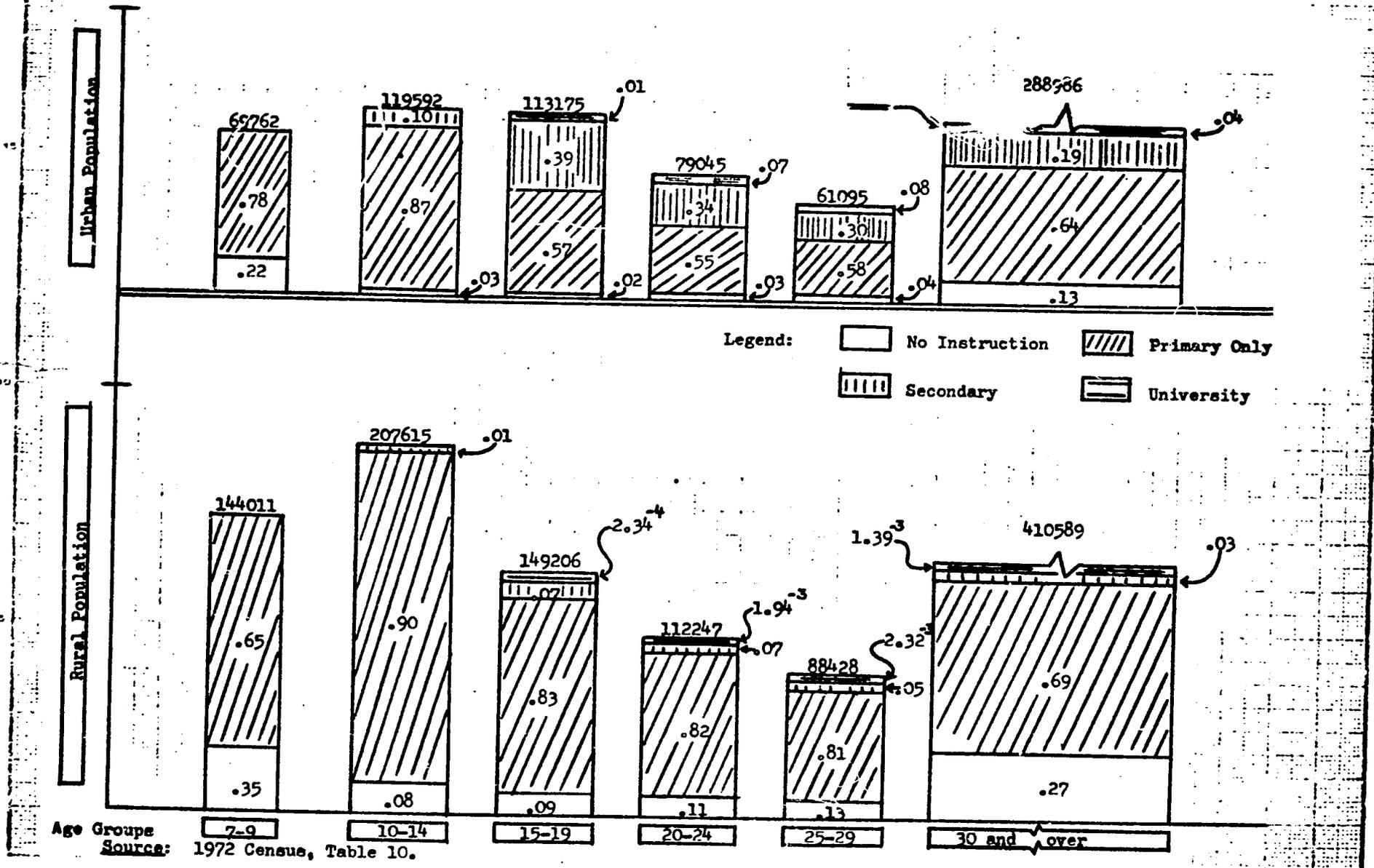
CHART XIV-1

ENROLLMENT IN FORMAL EDUCATION BY AGE GROUPS AND LOCATION, 1975



Source: MOE Division of Statistics.

CHART XIV-2
 DISTRIBUTION OF EDUCATIONAL ATTAINMENT IN THE URBAN AND RURAL AREAS OF PARAGUAY, BY AGE GROUPS



The last observation that can be gleaned from the chart is that the impact of educational opportunity on labor participation and incomes for the younger cohorts examined has not yet been realized. Those individuals in the 7-9 cohort are only now leaving the system in the rural areas, while a good number of those in the urban areas have by now proceeded to the secondary level.

Finally, if an overall view of education is adopted which takes into account NFE activities and informal learning, the production of education is weighted in favor of the urban areas. The analysis of NFE made in Section XI demonstrated that the purposes, functions, and locations of these activities essentially cater to the needs of the modern sector of the economy. More importantly, the informal education component, which has been empirically demonstrated to be the most important component of overall learning in at least one setting, also favors the modern sector.^{1/} The variety and intensity of learning stimuli, the access to information, and the dynamics of change are essentially concentrated in Asunción. Family and peer learning, while immensely valuable in the rural setting, is constrained by the relative isolation of the rural population, which impedes the massive transmission of communication flows and learning stimuli. Needless to say, the characteristics of situations such as these are only slightly conditioned by current educational policy. Their importance lies in the fact that they constitute the bulk of the education and development problem of Paraguay.

B. EDUCATION AND ECONOMIC PARTICIPATION

The value of learning in the determination of individual economic success lies in the capacity of educated individuals to store, process, interpret, and retrieve information, skills, and habits which they can apply to specific tasks and which allow them to function in specific environments. The more specialized and formalized the environment, the greater is the required degree of articulation between the individual's skills and the existing tasks. On a theoretical plane, therefore, the educated individual is said to be better equipped to cope with activities which become progressively more complicated, due to the number of components of such activities, their possible permutations, the manual and intellectual efforts required, and the degree of responsibility attached to the performance of such activities.

Still on a theoretical plane, it is possible to make an unambiguous connection between the adequate performance of these activities, and the economic rewards accompanying them. To the extent that competitive conditions prevail in the market place, the scarcity value of such activities is determined by the relative conditions of supply (i.e., how many people

^{1/} John Simmons, Towards an Improved Model of the Determination of Earnings, IBRD Occasional Papers, 1974. The paper uses data from Tunisia.

possess such knowledge and skills), and the existing demand for those qualifications. It may be argued that for a number of reasons, among which economic factors and differentiated natural abilities and individual preferences are the most important, the supply of educated individuals becomes more inelastic as higher levels of specialization are reached. Similarly, substitution of demand becomes increasingly inelastic; and as a result, the scarcity value of educated individuals increases.

1. The Institutional Setting: Characteristics of Paraguay's Labor Market

In common with most developing economies, Paraguay's labor situation must be examined in the context of accelerated population growth (which implies a relatively young labor force), migration flows, differentiated participation by sex, a clear predominance of the rural traditional and urban autonomous sectors, limited absorptive capacity of the modern sector, and uneven growth and distribution of productivity gains.

Table XIV-1, taken from a PREALC/ILO study on employment, provides summary information about labor participation in Paraguay as of 1972.^{1/} While some of the figures presented are obsolete, and some of the findings appear unduly pessimistic to sectors of the GOP, the PREALC study represents the richest source of data on and analysis of the employment situation in Paraguay.

The stage of the country's development defines the institutional characteristics of the labor market. These characteristics range from the formality of the modern, protected sector, with its set of procedures for entry assignment, remuneration, promotion, and leave, to the informal, haphazard, and thoroughly competitive urban autonomous and rural traditional sectors. Of the three, the last is undoubtedly predominant, with a labor force estimated at 400,000. The autonomous urban market comprises 52 percent of those employed in the urban areas. The modern urban (industrial, modern-service oriented) market absorbs only a minority of the population.

^{1/} PREALC/OIT, La Situación y Perspectivas del Empleo en Paraguay, Santiago, January 1975. This study, referred to as the PREALC study, is the main source of data and analysis for this section.

TABLE XIV-1
ESTIMATES OF LABOR PARTICIPATION IN PARAGUAY, BY
URBAN AND RURAL AREAS, 1972

(Figures in thousands)

Area	Total Popu- lation <u>1/</u>	Active Popu- lation <u>2/</u>	Employed	Unem- ployed	Gross Partici- pation Rate <u>3/</u>	Rate of Open Unem- plov- ment
TOTAL	2,328.8	756	709	47	32	6
Rural	1,452.2	443	434	9	31	2
Urban	876.6	313	275	38	36	12
• Asunción	481.7	197	173	24	41	12
• Other Urban	334.9	116	102	14	29	12

1/ Estimated as of 1972 preliminary census figures.

2/ Defined as persons of working age (12+) who are employed or looking for employment.

3/ The relation between those employed and the population of working age.

a. The Important Problems: Under-Employment and Sub-utilization

A labor market configuration of the type outlined above is invariably associated with under-employment, which entails sub-utilization of available human resources. Under-employment arises because available job opportunities are irregular; this situation results in insufficient income for the bulk of the labor force.

Under-employment, it is argued here, is the critical problem in the labor picture. Open unemployment figures are typically low in most developing economies. In Paraguay, the 1972 census reports that open unemployment is on the order of 2.9 percent; the PREALC figures affirm that the rate is 6 percent, and a CPES study compromises between the two at some unspecified rate between 2.9 and 6 percent.^{1/} The most important questions, however, lie in examining the production potential that is lost through under-employment and the consequent impact of this on the maintenance of poverty levels and diminished opportunities for economic growth. PREALC estimates that the sub-utilization of human resources through under-employment in Asunción represents the equivalent of a 22 percent unemployment rate. On a continuum of full utilization to disguised unemployment, it is reported that 16 percent of Asunción's available labor force is fully utilized, while 25 percent is either not utilized or scarcely utilized; 38 percent have varying degrees of utilization, and an additional 31 percent are inactive (this group includes primarily housewives and full-time students). Higher levels of under-utilization are presumed for the other urban areas of the country.

The prevalence of a traditional labor market in the rural areas implies that available technologies, production practices, and structural constraints limit the growth potential of the sector, thereby limiting the labor absorption capacity. The growth of the rural labor force is estimated at 2.2 percent per annum, while the growth of employment is calculated at 1.6 percent. The absorptive gap of .6 percent results in a continued imbalance of supply over effective labor demand. Of the estimated 400,000 members of the rural labor force, 199,000 are believed to be fully employed; 138,000 are occasionally employed; and 63,000 are not employed. This last figure represents 16 percent of the rural labor force, which is almost equivalent to the 17 percent who are engaged in the modern, wage-paying commercial agricultural sector. According to these calculations, the sub-utilization of labor resources in the rural economy is equivalent to an unemployment rate of 35 percent.

b. Structural Determinants of Employment Performance

Poverty is both a cause and effect of a deficient labor market performance. In a closed economy or in one with low social and economic permeability, under-employment means low incomes. Low incomes restrict purchasing power, and low purchasing power defines a limited market for consumer goods and restricts investment opportunities. Restricted investment and low capital formation result in poor absorptive capacity of the labor market, and poor absorption breeds under-employment.

This characterization, unfortunately, is generally valid for Paraguay. An occupational typology of the labor market in Asunción includes wage and salaried employees who have stable employment; domestic service

^{1/} Rivarola, et al., La Población del Paraguay, op. cit.

employees; workers with stable employment but variable incomes; workers employed in family-owned enterprises; and occasional workers. Wage and salary workers with stable employment make up 26 percent of the population aged 12 and over, and roughly 50 percent of those employed; while workers with stable employment but variable incomes make up 22 percent of the population and 46 percent of the labor force. If it is assumed that the first of these two groups is fully employed, it is possible to calculate the average under-employment of the other categories by reference to the average income of stable wage workers. However gross this calculation is, it shows that 26 percent of stable workers with variable incomes, 59 percent of "family" workers, and 65 percent of occasional workers are not fully utilized.

Employment absorption, it should be recognized, has become more dynamic in recent years. To the extent that the modern sector is able to absorb employment above and beyond the supply available, there is a resultant decline of absorption in the autonomous sector, discounting migration effects. Put in a different way, the magnitude of the autonomous sector is contingent as an inverse function on the absorptive capacity of the modern sector. The autonomous sector, where entry is not regulated, is the recipient of those occupations which are as a norm devoid of specialized skills. Because of restricted work opportunities, individuals engaged in the autonomous sector lack the credentials, skills, or connections necessary to transfer into the modern sector. Their productivity and incomes are low.

In the rural areas of Paraguay, the structural problems arise from the existing patterns of land ownership, the distribution of the land and its utilization, and the existing technology of production. In the developed world, as well as in isolated parts of the developing world, modern agriculture is organized along the lines of agri-business enterprises. In Paraguay a very small portion of the sector is engaged in these activities. The rest of the sector consists of family farms engaged in subsistence and small commercial agriculture.

Due to the concentration of the population in the central regions, the land is subdivided in small plots (minifundios) which are economically inefficient because of their size, location, excessive exploitation of the soil, etc.^{1/} Unlike several other Latin American countries, however, Paraguay is not constrained by lack of land. Agricultural production can be expanded through even more extensive cultivation. This defines the second distinctive characteristic: significant changes in the overall land tenure patterns have taken place in the last twenty years. Between

^{1/} It was estimated that by the end of the 1960's, 61 percent of agricultural producers owned land; 10 percent were renters; and 29 percent were squatters. Of every 10 minifundios, 7 were located in the central regions; 43 percent of producers had properties of less than 5 hectares in the eastern regions.

1956 and 1969, the proportion of squatters declined from 50 percent of agricultural producers to 29 percent. The number of farms in the range of 10 to 20 hectares went up 66 percent. Similar trends, although to a lesser extent, prevailed in the bigger properties; e.g., those ranging from 21 to 50, and over 100 hectares.^{1/}

Despite this progress and potential, the fact remains that the current distribution of land imposes a structural constraint to the achievement of a more dynamic sector. The subsistence farmer produces essentially for his family's consumption. Production activities are traditional in that they employ simple techniques for raising crops. Additional output under these circumstances is obtained largely through extensive exploitation; the production activities are not geared to employment generation.

c. Income Differentials in Urban and Rural Areas and Migration Flows

The economic returns to labor are a function of the location of labor force members in each of the different sectors postulated: urban modern, urban autonomous, and rural traditional. Within the urban areas, average income in the autonomous market is estimated at 40 percent of that prevailing in the modern sector. On the other hand, contrasting urban and rural areas, the national accounts and the census indicate that between 1962 and 1972 the urban-rural income ratio increased slightly, from 3.16 to 3.17.

This is not an outstanding difference, and it helps explain why rural-urban migration has not been a massive phenomenon in Paraguay. Migrants enter the urban labor market through the autonomous sector. However, income opportunities in the autonomous sector are limited. PREALC calculations indicate that the average weekly income in the minifundio area is \$630, while weekly income for individuals with less than three years of education in the urban autonomous market is \$980 (a 1.6 ratio). Adding to this calculation cost of living differentials, risk factors such as higher probability of unemployment, the costs of moving, and the associated lack of stability, the existing differential does not constitute a sufficient incentive to migrate.^{2/}

^{1/} PREALC/OIT, op. cit.

^{2/} It should be added that the lack of an industrial infrastructure in the urban areas (the bulk of the industrial plant as such is made up of small enterprises), the stronger emphasis on colonization, and the expansion of agriculture are elements which additionally determine the direction of migration flows.

d. Characteristics of Participation in the Labor Force

The Paraguayan labor participation model is based on a distinctive, recognizable queuing mechanism. Entry and placement are largely determined by individual characteristics such as sex and age. Education, the other important characteristic, will be examined in detail in the next section.

Adult males make up the bulk of the labor force. In Asunción the participation rate for male heads of household is 96 percent; for females (also heads of household), it is 76 percent. Table XIV-2 shows the participation rates by sex and age groups.

TABLE XIV-2

PARTICIPATION BY SEX AND AGE GROUPS IN THE LABOR
FORCE IN ASUNCION

(figures represent percentages)

	Age Groups			
	12 - 19	20 - 24	25 - 54	55 and over
• Males				
• Participation	47	87	94	66
• Unemployment	40	13	5	11
• Females				
• Participation	28	66	57	16
• Unemployment	25	18	6	0

Source: PREALC/OIT, op.cit., Table 2.

Due to a social structure which emphasizes the role of females in the home, their labor participation is limited and, as the figures show, concentrated in the early adult years. Heads of families are given preference; their unemployment rate is only 2.5 percent. This preference is also reflected in the fact that 47 percent of males, as opposed to 70 percent of females, work in the autonomous sector; while 34 percent of males and 15 percent of females work in the modern sector.

In the rural areas, the labor force is 80 percent male. Due to labor needs which vary in accordance with the crop cycle, overall participation rates fluctuate between 28 percent in May and 47 percent in September. Male participation remains largely stable throughout the year; thus, labor requirements are met from increased female participation (which ranges from 18.5 to 40.6 percent), and youth participation (from 3.2 to 16.6 percent).

2. Education, Employment, and Income Levels in the Urban Labor Markets

In an ideal treatment of the subject of education and income, it should be possible to establish unambiguously the connection between educational content, the outcomes of education, the participation in the labor market, and the determination of lifetime incomes. This ideal standard is not met in this analysis, which essentially infers this connection from available empirical information.

It may be argued that the role and functions of the schools transcend the generation of learning outcomes. Even at the level of educational objectives, the schools are expected to instill in their users a social and civic conscience which results from one's knowledge and appreciation of the environment in which one lives. Schools may be effective propaganda mechanisms to foster a government's point of view. They are expected to instill a sense of identification and belonging to make individuals understand, and comply with, the existing system of social stratification. Lastly, they provide certificates which constitute credentials for access to bigger and better opportunities. The schools, in other words, are a microcosm of society and they serve an essentially allocative function.

This preamble is an introductory caveat to this analysis. Given the still elementary development of Paraguayan education, it is conceivable that the allocative power of the schools is based more on their power to certify than on their power to teach. This is essentially a philosophical issue which will not be resolved here. In what follows, the analysis of results is based solely on what is observed, without explicit reference to the "value-added" of the learning that takes place in the schools.

a. Labor Market Participation by Educational Levels in Asunción

Table XIV-3 shows the educational profile of the labor force in Asunción. As expected, individuals who work in the modern sector and who also have fixed incomes have the highest level of educational attainment. They constitute the middle-level manpower to run the day-to-day operations of industry and the service sector. Higher education graduates are more likely to have fixed incomes and stable employment; however, as the level of educational attainment declines, the participation by categories becomes more diffuse. The percentage readings are therefore picking up some statistical "noise" which arises from different age structures in

the employment categories: those with stable employment and fixed incomes are more likely to be older (except in the 13+ educational bracket) than those who either have variable incomes or who are unemployed. The latter may have equivalent levels of education, but remain outside or at the fringes of the modern, protected sector.

TABLE XIV-3

EDUCATIONAL PROFILE OF THE LABOR FORCE IN ASUNCION, 1973

(figures represent percentages)

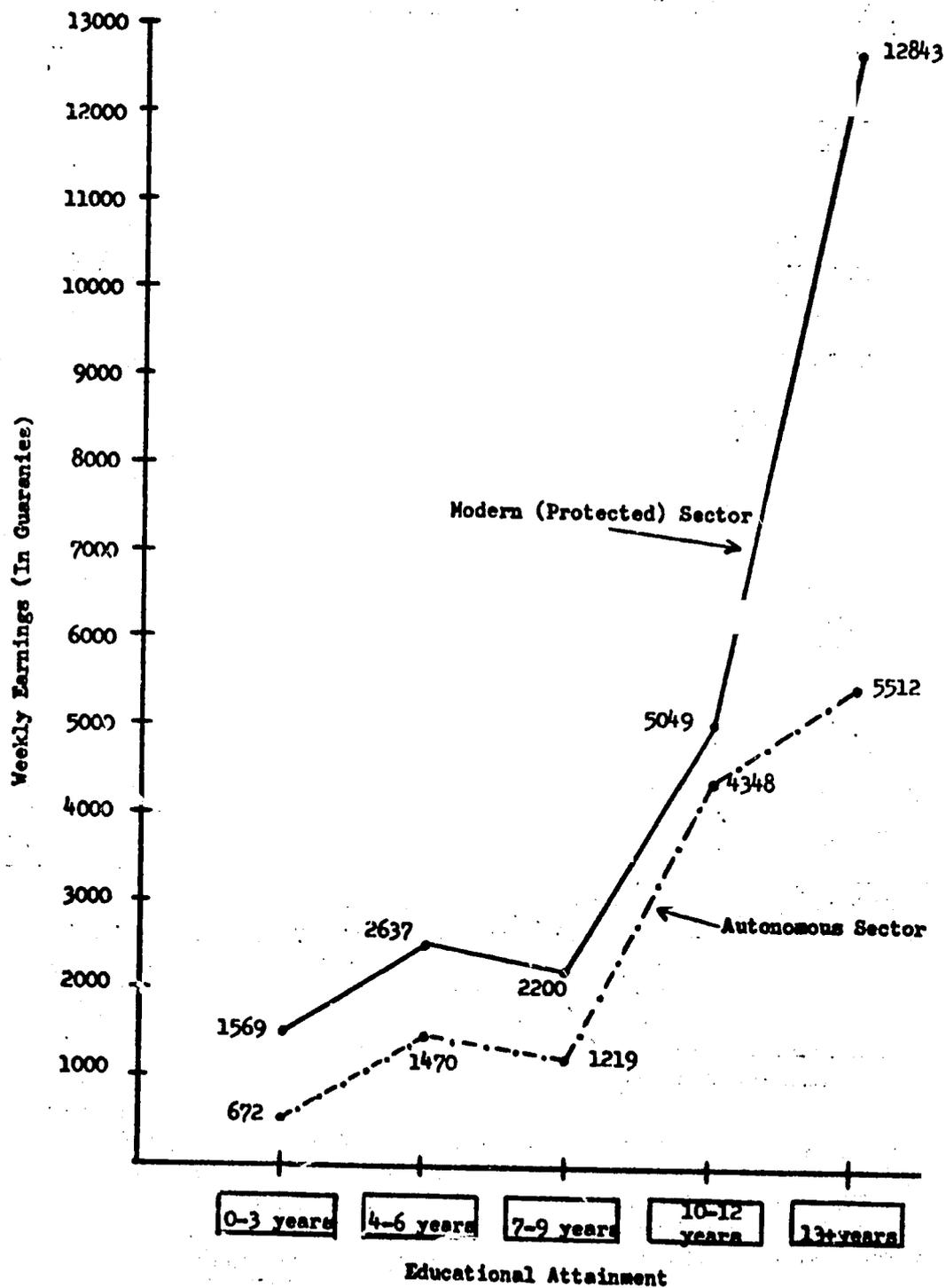
Employment Categories	Years of Education			
	0-3	4-6	7-12	13+
Stable Employment/Fixed Incomes	11	31	40	18
Stable Employment/Variable Incomes	22	40	30	8
Other	19	40	34	7
Unemployed	15	36	43	6
Economically Active Population	16	36	36	12

Source: PREALC, op. cit., Table 14.

The modern sector rewards participation. Chart XIV-3 shows average weekly earnings of participants with similar levels of education in the protected and autonomous sectors. The pay-offs are particularly significant in the higher education category, where the spread in earnings is greater. The basic point to be made from the chart is that educational level is not the sole determinant of earnings, though, as will be seen below, it is the most powerful determinant. The presence of two differentiated labor markets is in fact a critical element in the determination of economic rewards. A related point is that because there exists a labor-supply surplus in the market, the returns to labor (measured in this case by weekly incomes) provide a measure, however rough, of marginal productivity in both sectors. The additional absorption of labor into the labor market, in other words, may be significantly related to the need, perceived by employers, to equate marginal revenues and marginal costs.

CHART XIV-3

AVERAGE WEEKLY INCOMES IN THE AUTONOMOUS AND MODERN LABOR SECTORS OF ASUNCION, BY EDUCATIONAL ATTAINMENT



Source: PREAIC, op. cit., Table 102.

The evidence available from the PREALC study indicates that there are two structural components which condition the results observed in Chart XIV-3, and which shed further light on the external efficiency of Paraguayan education.

First, there are significant differences in the distribution of occupations in the modern and the autonomous sectors of the urban labor market. The modern, protected sector is geared to stable employment with fixed incomes, while the traditional, autonomous sector is geared to stable employment with variable incomes. The first category, as indicated earlier, attracts those with higher educational attainment, whereas the reverse takes place in the autonomous sector. As Table XIV-4 shows, the relative distribution of jobs, the incomes associated with the different activities, and the distribution of educational qualifications in the job categories determine the average levels of income observed in Chart XIV-3.

TABLE XIV-4

AVERAGE WEEKLY EARNINGS OF ASUNCION WORKERS
BY CATEGORIES OF EMPLOYMENT AND YEARS OF EDUCATION, 1973

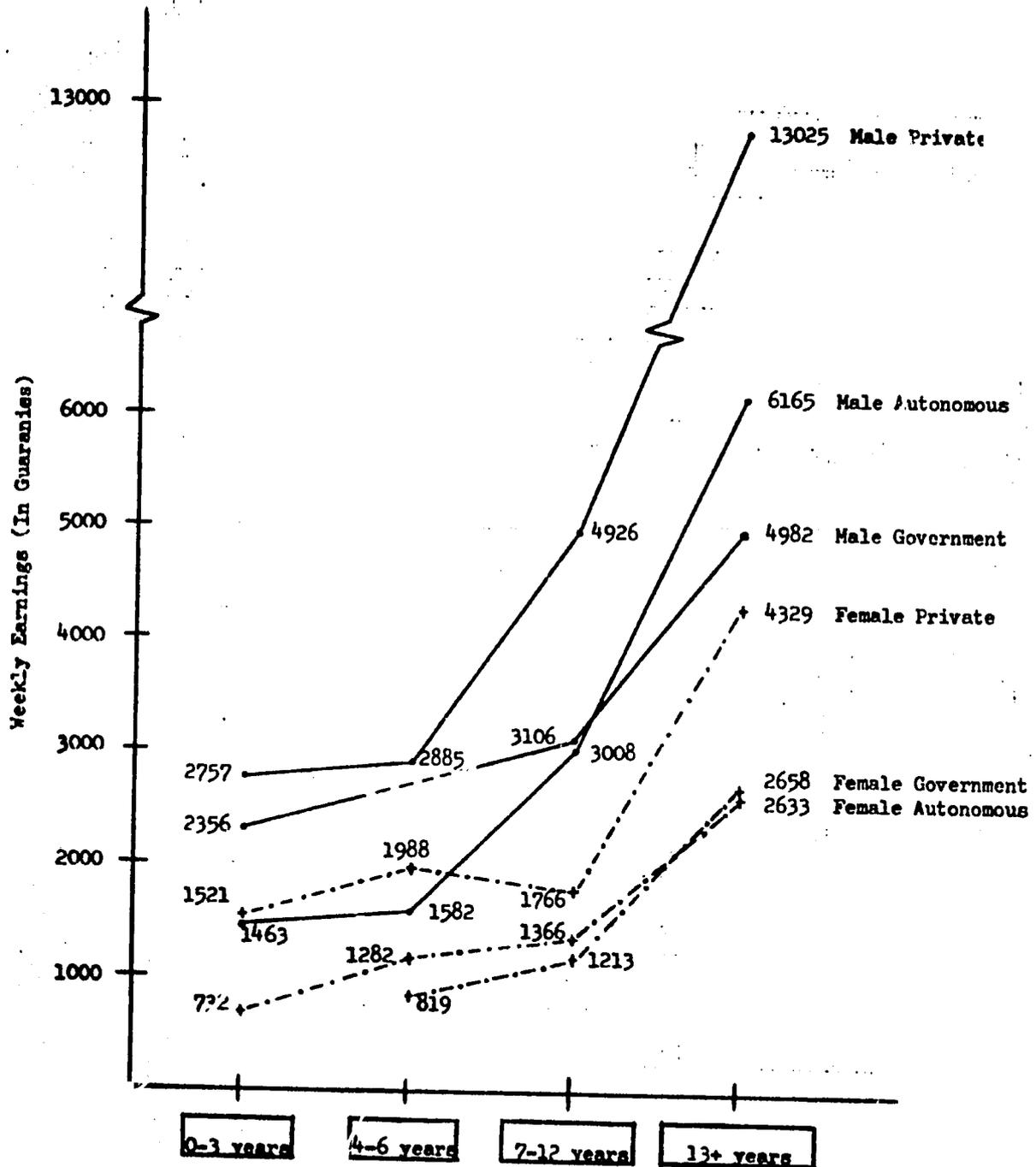
Employment Categories	Years of Education				
	0-3	4-6	7-9	10-12	13+
Stable Employment/ Fixed Incomes	% 11 ¢ 2003	31 1875	13 1995	27 3625	21 7070
Stable Employment/ Variable Incomes	% 22 ¢ 1246	40 2169	18 2615	12 5146	8 8436

Source: PREALC, op. cit., Table 15.

Second, the queuing mechanism at work in the market is an effective mechanism for discrimination by sex. Chart XIV-4 shows the consistency with which the system discriminates against women, at each level of education and within each sector (including a subdivision of the modern sector into government and private). Significantly, the spreads between male and female remuneration widen as higher levels of specialization (with university education) are reached in the private sector. Since greater numbers of females are concentrated in the autonomous sector, this circumstance tends to lower the average income levels observed in that sector.

CHART XIV-4

AVERAGE WEEKLY EARNINGS OF WORKERS IN ASUNCION, BY SEX, EDUCATIONAL ATTAINMENT AND SECTOR OF THE LABOR MARKET, 1973



Source: PREALC, op. cit., Tables 52. and 53.

b. Determinants of Earnings

The evidence accumulated indicates that education, or the possession of an educational certificate, is an important determinant of access to more privileged positions in the labor market and hence higher lifetime earnings. In Tables XIV-5 and XIV-6, a number of variables associated with employment are considered; and their impact on earning levels is examined separately, establishing statistical controls. The equation results, which explains 62 percent of the variance, indicate that level of educational attainment and the age of the individual are the most important factors that determine earnings in the modern, protected sector. Undoubtedly it pays to have a university education in Paraguay. The incremental value of secondary education over primary is \$961 per week, but it is only realized if the present Diversified Cycle is reached. The impact of primary and basic secondary education on additional income is definitely more modest. Nonetheless, it should be remembered that, given the importance of age as a determining factor, the younger cohorts, however better educated they may be, face less remunerative employment initially, as well as greater unemployment and under-employment.

3. The Rural Labor Market

There is no information available for the rural areas, comparable to that for the urban areas, which provides cross tabulations of incomes and education or productivity and education. At any rate, it has been argued in earlier parts of this section that the educational status (in terms of school attainment) of the rural population is essentially low, and incrementally lower in the older generations. Moreover, given the organization and structure of agricultural production in Paraguay, organized as it is along individual family enterprises, it would be somewhat futile to attempt to isolate systematically the impact of schooling on economic participation and income levels.

As stated in Section V of this Assessment, the bulk of the rural labor force is employed on family farms. Agricultural and livestock production are labor intensive activities which require the participation of parents (particularly the father) and the children (particularly the males) throughout the agricultural year and quite certainly at the time of planting and harvest. Farmers also engage in off-farm activities, but these generally do not represent meaningful employment alternatives.

a. Availability of Family Labor

Tables XIV-7 to XIV-9, taken from the Small Farmer Sub-Sector Assessment, provide information on availability and utilization of family labor on small farms in the districts of Santa Rosa, Itá, and Quindy. Farms have been classified by size: less than 3 hectares, 3 to 4 hectares, 5 to 9 hectares, 10 to 19 hectares, and 20 hectares and over.

TABLE XIV-5

DETERMINANTS OF EARNINGS IN ASUNCION (WORKERS WITH STABLE
EMPLOYMENT AND FIXED INCOMES)

Variable	Eta ² *	Relative Weight
Education	.135	100
Hours Worked	.020	16
Number of Years at Same Job	.062	46
Economic Activity	.013	10
Size of Enterprise	.040	29
Sex	.043	32
Age	.119	88
<hr/>		
Mean Earnings		¢ 2523
Standard Deviation		2551
Coefficient of Variance		.86
Multiple Correlation Coefficient (R^2)		.62
No. of Observations		716

Source: PREALC, op. cit., Tables 27 and 28.

* The Eta coefficient is determined by the within-group variance and indicates the amount of variance explained by each variable.

TABLE XIV-6

EARNING PERFORMANCE IN WORKERS WITH FIXED INCOMES AND
STEADY EMPLOYMENT, ASUNCION, 1973

Variable	Categories	Average Income	In Relation to Global Mean <u>1/</u>	Standard Deviation
Education	up to 3 yrs	1631	- 892	917
	4 to 6 yrs	1837	- 686	1331
	7 to 9 yrs	1869	- 654	1365
	10 to 12 yrs	2798	275	8321
	13 and over	3795	1272	2782
Hours Worked	up to 19 hrs	1522	-1001	1042
	20 to 34 hrs	2080	- 443	2102
	35 and over	2673	150	2174
Years of Employment (same job)	up to 23 ms	1738	- 785	1811
	24 to 59 ms	2247	- 296	1857
	60 and over	3002	479	2196
Economic Activity	industry, construct.	2340	- 183	1700
	private service	2444	- 79	2314
	com. and banking	3042	519	2809
	government	2403	- 120	1006
	other	2515	- 8	2755
Size of Enterprise	2 to 9 employed	1862	- 661	1666
	10 to 99 employed	2876	353	1991
	100 and over	2945	442	2465
Sex	male	2832	309	2415
	female	1890	- 633	1303
Age	12 to 19 yrs	892	-1631	634
	20 to 24 yrs	1803	- 720	1616
	25 to 34 yrs	2586	63	1876
	35 to 49 yrs	3144	621	2504
	50 and over	3296	773	2399

Source: PREALC, op. cit., Table 29.

1/ Differences with means have been corrected to reflect differences of each result with the mean of \$2523

TABLE XIV-7

PERCENTAGE OF AVAILABILITY OF FAMILY LABOR CLASSIFIED BY SEX, AGE,
AND FARM SIZE, IN SANTA ROSA, ITA, AND QUIINDY

<u>Farm Size</u>	<u>Men</u>			<u>Women</u>		
	<u>6 to 12 years</u>	<u>13 and 14 years</u>	<u>15 years and over</u>	<u>6 to 12 years</u>	<u>13 and 14 years</u>	<u>15 years and over</u>
Less than 3 ha.	67.5	62.0	46.4	43.0	54.0	52.3
3 to 4 ha.	76.9	46.1	48.6	36.7	44.2	43.9
5 to 9 ha.	86.6	55.5	49.9	46.0	53.9	34.0
10 to 19 ha.	81.2	50.6	51.9	41.1	47.5	22.9
20 ha. and over	70.9	50.0	39.7	30.2	25.0	32.7
Total	76.7	53.0	48.0	40.6	48.4	33.3

Source: Small Farmer Sub-Sector Assessment, p. 331.

Throughout all categories, males are the biggest contributors to family labor on the small farms. Significantly, the youngest males (aged 6 to 12) make the largest contribution, particularly on farms of intermediate size (from 10 to 19 hectares). This demonstrates the importance of youth participation on the farm, which points out one source of conflict with sustained school attendance. In particular, the utilization of child and youth labor demonstrates the pressing need of the intermediate farms to capture all possible sources of labor within the farm to extend production. When males and females become 15 and older, their support to the farm decreases considerably, as they become interested in setting up their own households and acquiring their own plots.

In Table XIV-8 a computation has been made of needed and actual labor availability on the farms. In the method of calculation, it has been assumed that all males aged 15 and over constitute an equivalent man-day unit of labor; if they are 13 or 14, their equivalency is one-half, and if they are between 6 and 12, their equivalency is one-third. Women are

computed at one, one-third, and one-fourth equivalent units. A theoretical maximum of 300 days of work per year (50 weeks at 6 days per week) constitutes 100 percent availability.^{1/}

TABLE XIV-8

FAMILY LABOR AVAILABLE FOR THE FARMS STRATIFIED BY
TOTAL HECTARES IN ITA, QUIINDY, AND SANTA ROSA
(Man-days per Year) ^{1/}

	<u>Up to 3</u> <u>hectares</u>	<u>3 to 4</u> <u>hectares</u>	<u>5 to 9</u> <u>hectares</u>	<u>10 to 19</u> <u>hectares</u>	<u>20+</u> <u>hectares</u>	<u>Total</u>
100% Availability	1,039.99	1,132.71	1,158.33	1,316.07	1,509.09	1,160.51
Real Availability	564.22	659.95	766.65	807.04	818.54	683.39
% Availability	54.3	58.3	66.2	61.32	54.2	58.9
Number of Farms	80	81	60	28	22	271

Source: Small Farmer Sub-Sector Assessment, p. 329

^{1/} A maximum of 300 days per year is estimated for 100 percent availability.

^{1/} Alternative calculations were carried out to measure the productivity of labor in the farm. These include: (a) a 270 man/day assumption which allows for 30 days when effective work is canceled by rain; and (b) a 240 man/day assumption which allows for 30 days for market-related activities and approximately 60 days of such activity for the family unit. As stated in the Assessment, while a 240 day assumption appears low, it is the equivalent of 48 weeks containing five work-days. (See Small Farmer Sub-Sector Assessment, p. 190.)

The results indicate that the lowest levels of availability of family labor occur in the smallest (less than three hectares) and largest (20 hectares and over) farms. Once again, the need to pool family resources is greatest in the case of intermediate farms, where the scarcity of labor is more deeply felt. On the smaller farms, the "labor surplus" situation (in relation to available land) results in an apparent under-utilization of labor. When examining the productivity of factor inputs, however, the computed availability represents a "constrained maximum" which would not result in marginally increasing labor productivity were additional family labor to be made available. In the upper end of the range, the declining availability indicates the increasing scarcity of labor in relation to available land resources.

The reallocation of labor away from the small plots is the result of the higher wages which individuals command off the farm (¢s 266 and 427 vs. ¢s 180). Table XIV-9 shows that the smallest farms are, after the larger farms, the largest providers of off-farm labor. In addition, the small farms are the only net providers of labor. Comparing the evolution of items 5 and 7 in the table, it is possible to observe that the smallest farms absorb the equivalent of 28 man-days from outside the family, while releasing the equivalent of 60 man-days. As the size of farm increases, this relation turns to a net absorption which grows as a function of farm size.

Relative factor endowments in the different groups of farms help explain this behavior. However, as Table XIV-10 shows, the spread in returns to labor on and off the farm is relatively more favorable on the smallest farms. In this group the average on-farm weekly wages are valued at ¢s 749, while off-farm they are ¢s 1,343. As size of farm goes up agricultural wages go up (the only exception being the 10 to 19 hectare group), while wages in other activities essentially stabilize. Again, the only exception is the 10 to 19 hectare group; but this group is hard-pressed for labor, which causes labor to be retained on the farm. Such activities as handicrafts, and to some extent construction and commerce, appear to be the areas where the highest alternative sources of income lie.

b. Returns to Factor Inputs and Income Profiles

The results obtained from an economic simulation model, which were tested by analysis of variance, indicate that: (a) differences in farm capital endowment are not related to different technologies of production; (b) farmers in all groups are income maximizers, but factor

TABLE XIV-9

ESTIMATES OF AVERAGE TOTAL LABOR USED IN THE FARM
(Equivalent man-days per year)

1. Limits (hectares)	<u>Up to 5</u>	<u>5 to 9</u>	<u>10 to 19</u>	<u>10 to 19</u>	<u>20+</u>	<u>Total</u>
2. Family labor available	612.08	766.65	807.04	807.04	818.54	683.39
3. Limits (hectares)	<u>Up to 5</u>	<u>5 to 8</u>	<u>9 to 13</u>	<u>14 to 24</u>	<u>25+</u>	<u>Total</u>
4. Wages paid (Gs. x 1000)	5.06	8.29	15.61	15.88	42.86	18.05
5. Man-days equivalent <u>1/</u>	28.04	45.95	86.53	88.03	237.68	100.06
6. Off-farm income (Gs. x 1000)	15.95	11.73	14.00	20.71	26.74	17.79
7. Man-days equivalent	59.92 ^{2/}	44.06 ^{2/}	32.79 ^{3/}	48.50 ^{3/}	62.62 ^{3/}	54.53 ^{4/}
8. Total labor (2-7+5)	580.20	768.54	860.78	846.78	993.50	728.92
9. Average total land (Has.)	2.783	6.186	10.724	18.758	42.991	16.760

Source: Small Farmer Sub-Sector Assessment, p. 332

1/ At an average of 180.4 Gs/day for agricultural labor.

2/ At an average of 266.2 Gs/day for all labor.

3/ At an average of 427.0 Gs/day for all labor.

4/ At an average of 326.2 Gs/day for all labor.

TABLE XIV-10

AVERAGE WEEKLY WAGES RECEIVED BY FARMERS IN DIFFERENT ACTIVITIES
STRATIFIED BY THE SIZE OF FARM

<u>Activity</u>	<u>Up to 3 hectares</u>	<u>3 to 4 hectares</u>	<u>5 to 9 hectares</u>	<u>10 to 19 hectares</u>	<u>20 to 29 hectares</u>	<u>30+ hectares</u>	<u>Total</u>
Agriculture	749.3	905.6	1,099.3	817.3	748.6	2,036.5	950.5
Construction	1,616.6	833.3	1,583.3	6,250.0	1,020.0	750.0	1,755.9
Cattle raising	1,162.5	1,050.0	-	1,300.0	-	-	1,170.8
Commerce	2,175.0	969.2	1,003.1	2,360.0	3,173.4	2,042.8	1,979.5
Handicraft	2,826.6	2,859.6	2,359.0	2,726.1	1,696.6	3,710.0	2,667.7
Others	1,557.6	1,373.4	1,391.4	1,255.8	1,968.0	3,451.8	1,734.5
All activities	1,342.7	1,377.6	1,288.6	2,087.6	1,653.8	2,789.2	1,631.1

Source: Small Farmer Sub-Sector Assessment, p. 325.

markets are not totally fluid; and (c) all farmers adjust the composition of output in order to utilize those factors which can be obtained most cheaply.^{1/}

Insofar as capital utilization does not result in technological "deepening," it may be expected that larger farm size will not result in higher returns to factor inputs. At the same time, it is commonly observed that smaller farms make a more intensive utilization of available inputs. As a result, returns to capital, for instance, can be higher in the smaller farms where their scarcity value, ceteris paribus, is highest.

TABLE XIV-11

AVERAGE NET FARM INCOME AND AVERAGE RATIOS OF NET AND GROSS
RETURNS PER UNIT OF INVESTMENT IN LAND AND FIXED CAPITAL
FOR FARMS CLASSIFIED BY TOTAL HECTARES OF LAND

	0 to 4 Has.	5 to 8 Has.	9 to 13 Has.	14 to 24 Has.	25+ Has.	Total
Average Net Farm Income	1.1684	0.8553	0.8457	0.8217	0.5603	0.8577
Standard Deviation	0.1523	0.0504	0.0731	0.0823	0.0402	0.0370
Net income/ Fixed capital	1,168	0.855	0.846	0.822	0.560	0.838
Cost/ Fixed capital	0.093	0.109	0.135	0.085	0.103	0.106
Gross returns/ Fixed capital ^{1/}	1.261	0.964	0.981	0.907	0.663	0.944

Source: Small Farmer Sub-Sector Assessment, pp. 307 and 310.

^{1/} Calculated by adding ratios of net income and costs to fixed capital.

^{1/} Thus, inasmuch as the smallest farmers are labor rich and capital poor, if they are given more capital (either financial or land) their production would increase, but they would tend to shift toward more livestock production. Large farmers (who are capital rich and labor poor), if given more labor, would increase their production, but they would shift toward crop production. Cf. Small Farmer Sub-Sector Assessment, p. 212.

TABLE XIV-12

PRODUCTIVITY OF THE LAND: AVERAGE RATIOS FOR FARMS
STRATIFIED BY TOTAL HECTARES OF LAND
 (₦s x 1000/Ha.)

	<u>0 - 4</u> <u>Has.</u>	<u>5 - 8</u> <u>Has.</u>	<u>9 - 13</u> <u>Has.</u>	<u>14-24</u> <u>Has.</u>	<u>25+</u> <u>Has.</u>	<u>Total</u>
Value of annual crops to hectares of annual crops	27.04	31.31	31.80	32.15	30.60	30.65
Total sales plus consumption to hectares of annual and permanent crops	40.85	41.68	42.86	40.44	43.25	41.82

Source: Small Farmer Sub-Sector Assessment, p. 305.

Tables XIV-11 and XIV-12 show that returns per unit of investment in fixed capital and land do indeed vary inversely to the size of the farm. Gross returns as a proportion of fixed capital range from 1.26 in the smallest farms to .66 in the largest farms. Similarly, the average productivity of investment in the smallest farms is 1.17; it ranges down to .56 in the largest farms. The productivity of the land, as measured by the value of annual crops to hectares of annual crops and by total sales plus consumption to hectares of annual and permanent crops, reflects the utilization of a uniform technology throughout the possible range of farm sizes. The results indicate such productivity to be quite stable.

Due to statistical problems of collinearity among variables, it is not possible to isolate the productivity of labor in agriculture. The model utilized in the Assessment assumes such productivity to be randomly determined. In light of the specification of the model, that is a reasonable assumption.

Table XIV-13 provides summary information on income levels and apparent farm productivity when farms are grouped by size. As expected, gross farm income (row No. 3) goes up with the size of farm. However, the increase in income is not concomitant with the increase in the size of the farm. The evolution of such relationships is as follows.^{1/}

^{1/} Cf. Small Farmer Sub-Sector Assessment, p. 171.

	<u>0 - 3</u> <u>has.</u>	<u>3 - 4</u> <u>has.</u>	<u>5 - 9</u> <u>has.</u>	<u>10-19</u> <u>has.</u>	<u>20-29</u> <u>has.</u>	<u>30+</u> <u>has.</u>
Land Size Ratio	1.0	2.6	4.6	9.1	16.3	41.7
Net Farm Income Ratio	1.0	2.3	2.8	3.8	5.0	7.6

Viewed from this perspective, the productivity of smaller farms is demonstrably higher (see row 6 in Table XIV-13). Under present levels of productivity, equalizing the size of farms would result in ₡s. 34,500 of gross income per thousand hectares in the smallest farms as opposed to ₡s. 8,700 in the largest farms.

As regards the productivity (gross income) per unit of labor, row 7 in Table XIV-13 shows that the observed ratios of differential productivity of labor are even lower than those observed for income levels. The following ratios result:

	<u>0 - 4</u> <u>has.</u>	<u>5 - 8</u> <u>has.</u>	<u>9-13</u> <u>has.</u>	<u>14-24</u> <u>has.</u>	<u>25+</u> <u>has.</u>
Labor Productivity Ratios	1.0	1.24	1.51	2.12	4.15

The differences between these ratios and the income ratios obtained above, although they do not apply to the same categories of farms, can be theoretically attributed to returns to other factor inputs such as capital and land.

These findings essentially corroborate the tenability of the argument developed earlier for the analysis of the Asunción market. Namely, the structural aspects of the labor market are the important determinants of the level and spread of incomes. While no information on educational levels has been used in this analysis, two tentative conclusions may be advanced. First, since educational attainment in schools is likely to be uniformly low throughout the entire rural population, it is quite possible that on the aggregate the impact of schools is currently very low, and has been so in the past. Second, the returns from technology-deepening inputs appear important, particularly on the smaller farms. This argues in favor of the design of learning packages which incorporate such technologies (and, ideally, spreading the availability of necessary inputs) whether in NFE activities, through informal learning mechanisms, or by their incorporation in the school curricula.

TABLE XIV-13

RELEVANT RATIOS FOR FARMS STRATIFIED BY TOTAL HECTARES

	<u>0 to 4</u> <u>Has.</u>	<u>5 to 8</u> <u>Has.</u>	<u>9 to 13</u> <u>Has.</u>	<u>14 to 24</u> <u>Has.</u>	<u>25+</u> <u>Has.</u>	<u>Total</u>
A. Basic Data						
1. Total hectares	2.783	6.186	10.724	18.758	42.991	16.760
2. Hectares cultivated	2.502	3.799	4.885	6.324	9.868	5.559
3. Gross farm income (Gs x 1000)	96.13	134.54	198.88	249.66	375.05	215.42
4. Total labor used (man days/year)	580.20	768.54	860.78	846.57	993.50	728.92
5. Total fixed capital (Gs x 1000)	131.44	214.94	294.81	405.80	931.48	406.56
B. Ratios						
6. Gross income per hectare of total land (Gs x 1000/ha)	34.5	23.2	18.5	13.3	8.7	12.9
7. Gross income per unit of labor (Gs/man day)	166	187	231	295	377	296
8. Total capital per unit of labor (Gs/man day)	226	280	342	479	938	558
9. Labor used per hectare of total land (man days/ha)	208.5	124.2	80.3	45.1	23.1	43.5
10. Labor used per hectare of cultivated land (man days/ha)	231.9	202.3	176.2	133.9	100.7	131.1
11. Gross product per unit of total capital	1.261	0.964	0.981	0.907	0.663	0.944

Source: Small Farmer Sub-Sector Assessment, p. 211.

SECTION XV

POLICY ANALYSIS

As stated at the beginning of this report, Paraguay has established as a national development objective the maintenance of a high rate of economic growth, combined with a policy of improved distribution of income. Growth with equity has been a dominant theme in many of the recent addresses of the President, as well as in official documents.

Planners have suggested the following general strategies to achieve these objectives.

- First, development of the Itaipú hydroelectric project, which will provide Paraguay with the foreign earnings necessary to finance capital development programs which are now dependent on foreign loans. The existence of a large energy source also will stimulate the growth of industry.
- Second, the GOP proposes to begin a program of agro-industry, or the processing of agricultural products prior to export. These efforts will be accompanied by schemes to increase agricultural production. Since Paraguay does not have a large unemployed rural labor force, increased production demands increased productivity of farmers, as well as more extensive exploitation of available land (currently, only 11 percent of agricultural land is under cultivation). This will require efforts to reduce under-employment, and to increase the labor force participation rate, especially of women.
- Finally, the government's economic development program calls for investment in import substitution industries. Consistent with a concern for efficiency, it is expected that these industries will concentrate on production activities in which Paraguay enjoys comparative advantage.

These development strategies have direct implications for the education and training system in Paraguay. For example, increased agricultural productivity will require expanding the skills and knowledge base of the rural labor force. The analysis of the economic behavior of small farmers suggests that many members of the rural labor force are quick learners, and that the introduction of new technologies, if appropriately simple, will not be difficult. The analysis suggests, however, that a major constraint to increased productivity is lack of organization for use of expensive machinery and marketing of products.^{1/} Although current rural/urban income differences are not large by international standards,

^{1/} Except in the colonization areas, there seems to be little organizational infrastructure among farmers to permit them to maintain a significant part of their surplus for re-investment.

they must remain low if economic growth is to be accompanied by a more equitable distribution of income.

The second part of the economic development strategy, industrialization for processing of agricultural products and import substitution, will require provision of basic skill training, appropriate to the level of technology employed.

The educational requirements of the economic development strategy, which call for the provisions of educational services to presently educationally deprived groups, will necessitate the use of both formal and non-formal educational approaches. The previous sections have examined the current situation in formal education. A summary of findings is in order at this point.

A. POLICY IMPLICATIONS IN FORMAL EDUCATION

1. Primary Education

The present system of primary education delivers an incomplete product to an insufficient number of students. The nation's economic development strategy requires not just a few persons educated to a high level of ability, but rather a large number of persons equipped with some minimal level of cognitive and communications skills.

At present, although 83 percent of the age group are enrolled in primary school at any one time, less than 50 percent of those enrolled reach the fourth grade, and only 28 percent graduate from the sixth grade. These figures are national totals; if productivity of the educational system is examined for the rural areas, the results are even less favorable.^{1/}

Clearly, the problem is not one of getting parents to send their children to school. If 83 percent of the age group is enrolled in school at any one time, it is likely that about 90 percent of the age group enrolls in school at some time in their lives. Nor is the problem strictly one of students not remaining in school for a long enough period to benefit from the education provided. The data show that students often remain in school for two or three or four years; but too many of them pass all of that time in one grade, condemned to a perpetual review of the same material, without hope of passing on to learn other skills.

Evidence that parent and student motivation for education is high is also shown by the fact that many of the schools constructed in previous

^{1/} See Sections VII and XIII.

years have been built at the initiative of local communities; even in public primary schools, parents provide about 50 percent of the total cost of the educational process.

Given this evidence, it would seem likely that were sufficient opportunities for enrollment provided, close to 100 percent of the age group would be enrolled in school. It is also likely that given the proper circumstances, most students would remain in school until completion of the sixth grade.

To some extent, the problem of early desertion is related to the problem of insufficient enrollment of the age group. There are not enough schools or teachers to accommodate all potential students at once. Admittedly this is conjecture, as MOE data on school facilities are inadequate.^{1/} But most schools are running two shifts a day and many are running three; also, many primary schools in rural areas are run under private auspices, which suggests a high unsatisfied demand for education. Official repeater rates for the first grade are in excess of 25 percent; independent calculations by Schiefelbein show that these rates could in fact be as high as 50 percent.^{2/} High repetition rates mean that children pile up in the first grade, taking up space, and preventing the entrance of new students into the system. The fact that in the rural areas it takes 7 years of instruction to bring one student to the fourth grade, and 12 years to bring a student to the sixth grade, means that the system must provide the equivalent of more than one seat per year for each student. In other words, were the system more efficient in moving students through, larger enrollments could be obtained with the existing physical plant.

The problems of inefficiency are to some extent a result of overcrowding in existing facilities. The motivation and ability of both students and teachers flag when all are jammed into inadequate quarters, without electric lights, good ventilation, seats and desks, or painted walls.

It is difficult at this time to determine the magnitude of the need for new primary schools or classrooms. Given the figures available, it seems likely that the MOE would have to build 250 schools each year to provide current levels of coverage, and twice that number to begin to reduce overcrowding. Similarly, while a maintenance program seems advisable under any circumstances, it is difficult given the information available in the MOE to specify the size of the task other than to acknowledge that it is large.

^{1/} See Section X.

^{2/} See Section VII.

Repetition is fundamentally a problem of the system's failure to raise the knowledge and ability level of the student to the extent that he or she can handle the requirements of the next highest grade. The investigation carried out in this assessment suggests that the major difficulty in most Paraguayan primary schools is that students are not taught to read at a sufficiently high level. Reading instruction suffers from a lack of teachers properly trained in teaching reading in a bilingual situation, and from an acute shortage of reading materials in Guaraní. Instruction in other subject areas is also deficient, because of the lack of training for teachers in the new curriculum and the shortage of essential teaching materials and aids. Not only are materials scarce: when they are available, they are sold rather than given to families whose cash income is insufficient to bear even the basic cost of the materials.

In summary, the problem in rural primary education is that existing resources are insufficient to provide the minimal levels of education needed for economic and social development. Students fail too often and repeat too often, crowding poorly-built and maintained buildings, overtaxing teachers, preventing new generations of children from enrolling until they too come close to the age in which they begin to be more useful on the farm than in a dead-end school.

Fortunately, policy instruments already exist to alleviate these problems. Paraguay has developed a new curriculum that incorporates most of the positive features of recent advances in pedagogical practice, and which is specifically adapted to the Paraguayan milieu. The MOE, on an experimental basis, has attempted a new program of "guided promotion" designed to reduce failure rates in the early grades, and eventually result in automatic promotion. In-service training programs to bring teachers up to date on new curricula and instructional practices have been offered to 5 percent of the teaching force. The Ministry has formally recognized that teachers regularly use Guaraní in the classroom, and is currently developing a new program of bilingual instruction in which students will learn to read first in the dominant language of their household. The Ministry has also demonstrated concern about the maintenance of school facilities.

Overall, however, these reforms have not been implemented on a sufficiently large scale to impact the system. Intentions have been good, but actions have fallen short of goals. At the current rate of implementation, Paraguay will eventually attain the kind of educational system it seeks, but only after the approaching critical period for providing a skilled labor force has passed.

Previous assistance by USAID and other donor agencies has been essential in enabling the GOP to develop existing policy instruments. USAID and UNESCO supported the efforts that resulted in the development of a new

curriculum. USAID has in the past contributed to the construction of rural primary schools, and to the development of the Regional Education Centers, which form the basis for in-service training for primary teachers as well as for community outreach programs.

But while these efforts have enabled the MOE to begin the task of reforming education to meet the development needs of Paraguay, they have not been sufficient to enable the GOP to complete the task on its own. Expectations are that the share of the national budget allocated to the MOE will remain essentially the same during the current five-year economic planning period. Any increased contribution to education will come from the expected expansion of GDP (and the government's share of it), resulting in an annual rate of increase in allocations to education of about 7 to 8 percent. This will not be sufficient to finance necessary capital development programs and meet the recurring costs of an expanded educational system.

Nor is it likely that recently committed foreign assistance will be sufficient to the task. The third World Bank loan will contribute principally to improving the efficiency of the existing system. Although one of its major items is the completion of 77 rural primary schools whose construction was begun by local groups, these schools will for the most part substitute for existing schools that are already crowded with students. Other aspects of the loan, such as development of the Rural Community Learning Centers, upgrading of supervisory personnel, and production of textbooks, principally benefit those students who are already in the system. No analysis has been done on the expected pay-off of these programs in terms of improved through-put of the system; but at the most, it would seem that they would reach less than 50,000 of the 260,000 students enrolled in rural primary schools, and none of the estimated 80,000 children not now in school. The contribution of the World Bank loan to the expansion of educational opportunity in Paraguay is small, as seen in the fact that it will add only 1.5 percent to the projected recurrent expenditures of the MOE for 1981.

It would take a major effort to improve efficiency of primary schools; that is, to increase through-put by reduction of failure and repetition and consequent desertion. It is worth noting, however, that a number of countries in the world, including some at similar levels of economic development, have implemented policies of automatic promotion in primary schools without demonstrable reductions in the quality of education provided, and without excessive unit costs for education. Korea and Taiwan, at lower levels of per capita incomes than Paraguay, were successful in educating all of their population to a minimal standard (first six, then nine grades) instead of developing a small cadre of highly trained persons to the detriment of the education of the majority. Venezuela and El Salvador are Latin American examples of countries that recently have begun to apply on a national scale policies of automatic promotion in primary grades.

Essential to the execution of this policy is the provision of complete schools in rural areas. To some unknown extent, repetition in rural Paraguayan schools is a function of children staying in the same grade because there is nowhere else to go. Less than half of the rural school children are enrolled in schools with all six grades. Incomplete schools either push children out at a level where they have not learned enough to continue to educate themselves systematically, or they encourage children and parents to migrate to urban areas where complete schools are available.

Massive construction of schools, assuming resource availability, is complicated by the fact that much of Paraguay's construction labor force is bound up in the Itaipú hydroelectric project. But rural communities already have demonstrated their willingness to participate in school construction projects, given proper technical assistance and materials. While many rural schools could be brought up to six grades by the addition of classrooms, other communities have no school facilities, and will require new construction. Efforts to systematically plan construction are constrained by limited information about the distribution of unsatisfied demand, and by the limited administrative experience in conducting a planned construction program.

It seems reasonable to assume that the provision of six grades in rural areas will not generate immediately a heavy flow of people to urban areas, seeking more education in order to get better employment. Any potential migration flow would be discouraged by higher unemployment rates in urban areas, especially Asunción; the stated priority of government efforts toward employment generation in rural areas through agro-industrial projects; and the implementation of the new curriculum, which appears relevant to the interests and values of rural children.

But education does create its own demand, and parents and children alike are quick to note that secondary school graduates earn higher salaries and hold more social prestige than do primary school graduates. The increase in numbers of graduates of primary schools will necessarily increase the demand for secondary education. The additional costs of satisfying this demand would be more than Paraguay could handle, especially given the relatively low government economic support of education.

Other countries have faced this problem; there are ways to ameliorate the impact of educational expansion on the public treasury. Such policies are essential if Paraguay is to maintain its commitment to income redistribution; that is, to growth with equity. Public subsidization of secondary and higher education, when enrollments are only a small fraction of the age group, contributes to a regressive distribution of income, because higher-income families can better afford to send their children to secondary school, and because graduates of secondary school and universities earn higher incomes.

Two policies have been used in other countries to postpone increased educational expenditures resulting from expansion of primary education. First, government support of secondary education is kept low, until the point that most of the pertinent age group begins to enter. The private sector is allowed to carry most of the cost burden of increased secondary schooling. Second, governments have imposed an examination for entrance into secondary school: manipulation of the difficulty level of the examination controls the number of new secondary students. These examinations also tend to reward cognitive ability more than family status and thereby tend to equalize educational opportunity. Neither of these policies is totally effective in eliminating family income as a major determinant of educational attainment, but they do help reduce class differences.^{1/}

The realization of activities such as those described above will require increased investment in educational materials, and training of teachers in their use. The materials provided under the latest World Bank Loan can be used in conjunction with teacher training programs, to support the efforts of teachers who will frequently be working alone or in small groups without opportunities for frequent contacts with supervisors. The free provision of textbooks and the establishment of small school libraries will also help to avoid a reduction in quality of education when the system implements the policy of "guided promotion."

2. Secondary Education and Teacher Training

On the basis of the information gathered for this assessment, a major new investment in formal secondary education, with the exception of teacher training, is not recommended at this time. That is, no major effort should be made to expand academic or diversified bachillerato enrollments, or to improve the quality of instruction in existing institutions.

What evidence is available suggests that the current supply of graduates from secondary schools is adequate to meet labor force needs for at least the immediate future. In fact, it may be that for the short run, secondary schools have too many students; there is evidence that graduates experience difficulties in securing employment. There are more than enough applicants for higher education. The kinds of skilled manpower required at the present time, and for the agro-industry and import substitution programs discussed above, typically are not products of either academic or technical secondary schools.

^{1/} The imposition of an examination for entrance into secondary school, together with high social demand for secondary education (which will result naturally as more and more people complete primary education), also help to improve the quality of primary education, without raising public costs. Students and parents, concerned about obtaining high scores on examinations, pressure teachers to provide higher quality education. The experience in countries that have used examinations of this kind is that they generate a sense of fairness among students

The present supply of graduates, which is growing at 8 percent per year, seems more than sufficient. The unit cost of secondary education is three times that of primary education; in the absence of evidence of a high social economic return, an investment in secondary instead of primary education does not seem justified. Finally, until the proper analyses can be done to assess the need for secondary education, the private sector can be expected to continue to increase its offerings, meeting existing social demand. As argued earlier, given the low through-put of students in primary schools, public subsidization of secondary education constitutes a regressive distribution of income. The GOP has recently signed an agreement with the IDB to study teacher training needs in vocational/technical schools, a further argument that secondary education can be ignored for the time being.

Existing programs for pre-service training of primary school teachers also appear adequate. These teachers currently are trained in fourteen separate institutions, one of which, the Instituto Superior de Educación, also offers training for secondary teachers. The current supply of graduates of these programs exceeds the demand created by Ministry hiring. An expansion of enrollment in primary schools would require additional teachers, if the current student/teacher ratio were maintained at 31:1. But if this ratio is elastic, and if through-put rates can be improved, then the current supply of primary teachers will remain adequate.

On the other hand, there is a need to rapidly expand programs for in-service training of teachers. As discussed in Section VIII, the number of in-service teachers currently receiving some training in the new curriculum is such that more than ten years will pass before all teachers have been reached. Expansion of the in-service primary teacher program will require utilization of the teacher training institutes, and of the Regional Educational Centers as "regional teacher development centers," both as residential training facilities and as outreach centers. Relative to the rest of the system, these centers are well supplied with both material and human resources, and are strategically located to reach much larger numbers of teachers than currently are being exposed to new curriculum materials.

not successful in attaining admission; at the same time, they increase the motivation of parents and students.

Examinations of this kind also can be critical instruments in the development of regular procedures for the evaluation of educational programs. A national examination allows the Ministry to compare outcomes of different kinds of primary schools, the productivity of teachers with different levels and kinds of preparation, and the effects of class size, textbooks, and other inputs to the educational process. Because the examination is developed on the basis of the objectives of the curriculum, it provides a means for evaluating the extent to which the system is realizing the overall objectives of the curricular reform.

In addition to material incentives for teachers who opt for additional training, the system should capitalize on parent interest in the new curriculum. This could be accomplished through the development of a nationwide mobilization campaign that would invite parents to seek out teachers to make sure that their children were benefitting from the new curriculum. Citizen mobilization efforts of this kind have worked successfully in other countries undergoing educational reforms; e.g., Chile and El Salvador.

Critical to the effort to rapidly extend the new curriculum will be the Regional Education Centers. The analysis in Section IX suggests that to date these centers have primarily served as high-quality schools offering complete primary and secondary tracks, as well as pre-school instruction, to a limited portion of the population in their districts. In addition to serving the children who attend, these centers should become community-based learning resource centers, open to the public at large and acting as the focus of educational reform in schools in surrounding towns and rural areas. Ministry of Agriculture collaboration should be obtained to actualize the Bachillerato Agronomico program, possibly within the REC's, as well as to make the centers a component of programs to provide increased information on agriculture to individuals involved in agro-industry. The teacher training institutes could also fill this role; but to do so, they would require inputs of the kinds of resources which already exist in the Regional Education Centers.

Projections indicate that the supply of secondary teachers will match demand by 1980, with no additional investments. Therefore, no action should be taken to expand ISE. Some assistance for teacher in-service training is required for the Institute, however.

Given limited resources, and the already sizable subsidization of higher education by the public sector (18 percent of the budget of the MOE), it is recommended that no additional inputs to higher education be made at this time.

B. NON-FORMAL EDUCATION AND INFORMAL LEARNING THROUGH PARTICIPATION IN DEVELOPMENT

The GOP does not currently have a systematic policy for developing NFE or for incorporating educational elements into its overall development policy. However, there is a specific rural development policy which seeks the coordination of a number of institutions in the Eje areas, and attempts to mobilize community resources. In addition, a variety of NFE activities have been underway for a number of years. Many of these programs are concentrated in the rural areas in general, and in the Eje areas in particular. The development of SNPP's institutional capabilities is also a tangible demonstration of the GOP's commitment to the strengthening of NFE.

Any attempt to separate non-formal education activities and informal learning in the rural setting is by definition somewhat artificial. The latter concept, however, is more global in nature, because it frees learning from the boundaries of specific organizational schemes. The NFE components of the programs and institutions necessitate specific considerations about what is to be taught and who is going to teach it and how, as well as over what period of time. These activities also require the intended users to set aside a portion of their time to participate in whatever programs are carried out.

By contrast, the informal learning component entails the existence of information and communication flows, but without the need to organize participation and delivery. The idea sponsored in this assessment is that the information flows should have some intentionality, which should be based on the recognition that there exist important categories of learning needs that are currently not appropriately fulfilled; the information flows in those areas do not exist, are too weak or inadequate, or are not properly conveyed.

For purposes of planning both NFE and the desired content of informal learning, it is necessary to have a clear idea of these learning needs. Some of them can be identified through induction, but induction imposes a limit which falls short of the necessary specificity. It is for this reason that great emphasis is placed in this report on the need for carrying out a number of studies which would result in the provision of guidelines for planning action.

The availability of information should help decision-making regarding contents, the types of clientele to be attended, and the delivery systems to be used. There currently exists a felt need for understanding the extent to which these programs and activities contribute to rural development, their potential market, and the constraints to their expansion and improvement.

The underlying theme of this analysis is that of participation in development. Participation, as argued in Section V, entails a process of becoming informed: informed about how to do things to obtain tangible benefits for oneself, and informed about what is being done by institutions and groups which may result in individual benefits.

The need for strengthening non-formal education and informal learning arises from the immediacy of the problem of participation. Formal education constitutes a long, drawn-out process directed essentially to the younger groups of the population. Yet, the immediate need, particularly if the pursuit of growth and equity is assumed, is for mobilizing those groups essentially over 20 and 25 years of age. It is known that the older the group, the smaller its previous exposure to formal education. This also argues in favor of strengthening out-of-school education.

The direction the policy must take is clearly that of organizing and coordinating the action of the different institutions involved in NFE and in rural development. Some coordination and joint programming is already taking place in the Consejo Nacional de Progreso Social (CNPS), but the effort is still limited. What is needed, to begin, is a clear definition of the roles of the different agencies in isolation and in coordination. The content of the programs would be decided largely on the assessment of needs. The delivery of activities would be the result of plans emanating from the coordination that is established.

In this sense, a ranking of priorities and fields of specialization must be developed. Organizations such as SNPP and SEAG are primarily interested in the transmission of work-related skills. SENASA and PAEN specialize in the provision of welfare-oriented services: sanitation and nutrition education, in this case. The Adult Education Department provides functional education. The Ministry of Public Works and the Housing Institute provide physical and housing infrastructure.

The areas of concentration are, therefore, easily identifiable. If, for example, it is found that the provision of technology-deepening inputs can have a substantial pay-off, this will call for: (a) joint content planning and delivery programming by SEAG and SNPP; (b) the cooperation of the MOE in providing locales (e.g., school buildings), printing facilities, use of the educational radio, and its functional education programs; and (c) the participation of the credit-giving institutions such as CAH, and BNF. Since transportation and marketing also constitute a problem, planning and institutional support would have to extend to this area also. If feeder roads are needed, community resources could be mobilized through mingas (i.e., a free collective effort by the community at large), for laying out the roads or repairing those that have deteriorated. The same principles could be applied to any other collective enterprises such as buildings of storage silos, crop harvesting, construction of irrigation canals, digging of wells, etc. The limits would, in fact, be imposed by the limits of the imagination of planners and participants.

Fundamental to the pursuit of this policy is the organization of community groups. These could constitute the needed "action cells." Procedures would be set up for their organization so that some degree of uniformity could be achieved. The community groups, aided by outside institutional support, would draw up their own plans which could be submitted to the CNPS for review and approval. The submission of such plans would, in fact, benefit the institutions in CNPS to plan their own work in such a way that it responds to felt needs. Given the scarcity of financial resources, it is expected that the decisions on funding and support would be selective in nature. Even then, however, some benefits would accrue from adopting more carefully planned and coordinated action, rather than the current unsystematic approach.

ANNEX

ANNEX A

INTERNATIONAL ASSISTANCE TO EDUCATION

The educational development of Paraguay has been supported by international donors for a number of years. The major source of financial and technical assistance has been the United States; today, however, a number of foreign governments and international agencies, notably the World Bank, are also lending their support to improve the scope of educational coverage, as well as its content and quality.

This annex outlines past and present external assistance, in order to place current and planned AID intervention in the context of past programs and proposals. Emphasis is given to those needs which are presently being addressed by other donors, which complement AID's own efforts and plans.

A. PAST INVOLVEMENT AND POLICIES OF AID AND PREDECESSOR AGENCIES

American involvement in assistance to education in Paraguay began in 1945, under the Inter-American Cooperative Education Service (SCIDE). Since that time, the bulk of assistance has been to primary and secondary education, although support has been given to UNA and to the Catholic University. In the 1950's and 1960's, SCIDE efforts were directed to primary teacher education; to the production of instructional materials; to vocational education; and to training of supervisory personnel. The San Lorenzo Rural Normal School, designed to upgrade primary teacher training, formed the basis for what is now the Regional Education Center program. In-service training for supervisory personnel was carried out in San Lorenzo and abroad, principally in Chile and Puerto Rico.

The Curriculum and Materials Center was also created under SCIDE auspices in 1955. The Center became active in the development of professional teaching materials; publication of separate news magazines for elementary students and teachers; and initiation of writers' workshops, a curriculum laboratory, and an advisory service for teachers and school principals. To upgrade vocational education, SCIDE established the Escuela Técnica Vocacional in Asunción in 1948. In addition, SCIDE supported a number of educational reform commissions which were set up to propose changes in the structure of primary and secondary education.

The first program implemented in Paraguay by the Agency for International Development was the Rural Education Development Project (REDP), which was initiated in 1963. The San Lorenzo physical plant was finished, with the addition of a new wing for the secondary level and the incorporation of two nearby schools for teacher training. Three additional regional centers were constructed, at Encarnación (1966), Villarrica (1967), and Concepción (1967). These institutions were built to specifications which are still in effect. Each includes a primary and secondary school plus facilities for teacher training, workshops, and demonstration plots. They are designed to serve about 2,000 students, with a permanent staff of 30 working in three shifts. Also under REDP, 10 elementary schools were built and an additional 19 were renovated.

The Curriculum and Materials Center, which in 1966 became the Textbook Production Center, was supported through REDP after SCIDE programs were continued under AID. From 1955 through 1957, the Center published 60 titles in almost 600,000 copies; of these, 143,000 were financed through SCIDE, and 457,000, through REDP. Additional reference books were purchased from RTAC. REDP also continued to provide assistance for teacher training and vocational education, which at that point began to include agricultural training.

In higher education, meanwhile, support was given initially to UNA and, in 1969, to the Catholic University. The program areas in higher education included medical and nursing education; agricultural and livestock education, including agricultural economics; public administration; and organization and planning. The results observed in these areas indicate that the programs have had limited impact, with the possible exceptions of those in livestock production and agricultural education.

In order to address some of the most pressing needs identified in the Diagnóstico Educativo and in the 1969-1980 Educational Development Plan, a \$4.2 million loan was signed in 1970. The entire package totaled \$6.3 million including grant and counterpart funds, and was directed to rural and basic education. An essential project component was the construction of 32 schools to provide space for 20,800 students. The schools included space and facilities for agricultural, industrial arts, and home economics courses. Also included in the loan package was the construction of two additional Regional Education Centers in Pedro Juan Caballero and Puerto Stroessner. The plant of the Instituto Superior de Educación (ISE), in Asunción, where the majority of Paraguay's teachers and administrators receive pre-service and in-service training, was also built under the loan.

Further actions undertaken through the loan and in related programs include administrative and budgetary improvements, curricular reforms, teacher and supervisor training, and production and distribution of teaching materials. The area of curriculum reform, which is heavily emphasized in Paraguayan educational policy, was given a significant boost with the participation of curriculum consultants from 1971 to 1973. There are two current grant projects, in the use of radio technology and the production of instructional materials for non-formal education; and a third project, in bilingual education, is about to begin. The grant projects are essentially in line with current theories regarding educational delivery. It is expected that the system's outreach will be significantly enhanced, in a cost-efficient manner, if greater utilization is made of radio education and grass-roots delivery of educational services which are directed to educationally deprived segments of the population.

B. OTHER DONOR ASSISTANCE

During the 1970's, the pattern of foreign assistance to education in Paraguay has paradoxically represented both a continuation of and a departure from past involvement. Continuity is established insofar as emphasis

remains on rural education, on its quantitative expansion (e.g., through the building of schools), and on the improvement of its qualitative content (through the support of curriculum reform, materials production, and teacher training). The departure entails unambiguous support of NFE, bilingual education, and the utilization of modern technology for educational delivery. In terms of magnitude, AID and the World Bank stand in a category by themselves as the biggest providers of financial assistance. The Inter-American Development Bank is also in the first stages of at least two significant operations. Other agencies and governments, including UNDP/UNESCO, UNICEF, the OAS, and the German and Brazilian governments, are essentially financing technical assistance, or else lend support on a project-by-project basis.

1. UNDP/UNESCO, UNICEF, OAS, and Other Donors

The assistance provided by the United Nations is channeled through UNESCO and financed by UNDP. UNICEF is also active in its own areas of concern, which include rural populations (particularly mothers, children, and youths), through NFE activities which emphasize health, nutrition, and basic education.

From 1971 through 1975, UNESCO activities were focused on teacher training and upgrading; the programs coincided with the start of the new teacher training plan. This strategy is still in effect, although it is now complemented by a research program which started in 1976. UNESCO directed the bulk of its assistance to the Institute of Basic Sciences at UNA, and to ISE. In the latter institution, UNESCO provided assistance by making available the services of consultants in training of teachers and school inspectors, science teaching, educational research, and curriculum evaluation and preparation. Two other consultants participated in training of physics and chemistry teachers. A number of scholarships have also been made available in several disciplines, for varying periods of time.

UNICEF involvement, as stated earlier, is in the area now known as non-formal education. They may also be defined as community-based development activities which have educational components. In Paraguay, these programs are concentrated in the Eje Norte. Principal activities include health care and health education geared to environmental sanitation practices, aimed at reducing infant diarrhea; nutrition education, including planting of family vegetable gardens; land clearing; and crop diversification. Other current activities include the improvement of maternal health and child care in rural areas through continuing medical education, including instruction in family planning; also, there is a program of integrated services related to health, education, nutrition, and community organization to protect and develop family life.

The Organization of American States, for its part, has an active involvement with the MDE. During 1976 and 1977, the OAS has provided support in a number of areas, which include planning and execution of the

accelerated primary track; the Eje Norte program of functional education for adults; research about the effects of bilingualism on school achievement; technical assistance to the information division of the Primary Education Department; and support to two multi-national projects carrying out comparative research.

A number of governments, including France, Italy, Mexico, Argentina, Brazil, and Switzerland, provide assistance to specific activities on a project-by-project basis. With the exception of France, the assistance provided by these governments consists largely of scholarships for technical and professional training in a number of areas, including the training of university professors. The German government provides assistance to a group of schools which teach German language and culture. The Mennonite community in Filadelfia, though not strictly foreign, is also active in a number of education projects, including the utilization of radio.

2. The Inter-American Development Bank

To the present time, the IDB has not been particularly active in education in Paraguay. Only one loan operation has been carried out that relates directly to education: in 1965, the IDB approved a loan to UNA to underwrite the physical expansion and strengthen the organizational capability of the University. The loan amount was \$8.5 million and the period of disbursement ended in 1968. A second phase is now being prepared; and a grant for technical services has been provided to undertake the preparation of the project. The study was awarded to the University of Campinas in São Paulo. The amount of the expected loan is initially estimated at \$8 million.

Currently the IDB is also providing funds for education as a component of the integrated development loan made to the Ministry of Agriculture (MAG) and National Development Bank (BNF). The project component entails the creation of four agricultural schools under the jurisdiction of MAG (See Annex G).

Responding to current GOP priorities regarding the development of vocational education in Alto Paraná, the IDB has also provided a grant for technical services in the preparation of a project to be financed by a future loan. The grant is for \$120,000, with \$25,000 in counterpart funds, and will be used to prepare a vocational education plan which will identify specific project elements for a loan currently estimated at \$6.5 million.

3. The World Bank/International Development Association

Since the late 60's and early 70's, the World Bank and IDA have become increasingly active in the education sector. This is reflected in Paraguay, where in the current decade these two associated institutions have constituted the major source of international assistance to education.

The World Bank strategies essentially mirror the evolution of GOP thinking on the subject of educational development. Thus, the first project financed by IDA was intended to strengthen vocational education in the Diversified Cycle. The second was directed to the development of the institutional and technical capabilities of SNPP, and particularly to increasing the scope of SNPP's non-formal activities in the rural areas. The emphasis of the third and final project is on school construction, rural primary education, and community-based NFE activities.

The purpose of the first project is discussed at some length in Annex F. In summary, its objective is to strengthen vocational education in the Diversified Cycle of the secondary level. A number of colegios multilaterales will be set up to offer the array of disciplines and technical areas included under the bachillerato diversificado program.

The second project is intended to create within SNPP a capability to deliver services to the rural areas. More specifically, the project is expected to increase the vocational training capacity of SNPP fourfold. The total cost is estimated to be \$5.7 million, including physical contingencies of \$.4 million and price contingencies of \$1 million. As described in the project document, the following elements are included:

- construction and equipment of vocational training centers in Asunción and San Lorenzo, increasing the existing capacity from 205 to 545 trainee places.
- construction of four new vocational training centers in Hernandarias (Itaipú), Encarnación (Yacyreta), Chore, and Oviedo, providing 495 trainee places.
- provision of 2 mobile training workshops and 24 sets of equipment and transport for about 1,500 trainees.
- provision of technical assistance totalling 10.5 man-years of expert services, and 5.5 man-years of fellowships.

The third project also responds to a specific need as expressed in the MOE's Diagnóstico. The project is expected to support GOP efforts to improve and extend educational opportunities in rural areas and semi-urban towns. Also, it should improve the quality of the education system by increasing the production of textbooks and teaching materials, upgrading teachers and supervisors, and strengthening educational administration. Specific project elements include:

- establishing 83 rural community learning centers (RCLC's), which will offer primary education to about 30,000 school-age children, and NFE and training to about 20,000 out-of-school youths and adults.
- supporting rural communities in completing construction of 77 primary schools for 18,000 students.

- providing functional buildings and equipment for workshops and laboratories in five Basic Cycle schools with 2,400 students.
- expanding two existing colegios multilaterales (comprehensive schools) with workshops and laboratories to serve 1,800 students and to supply complementary equipment for workshops and laboratories for three schools being constructed under the first education project.
- providing in-service training for about 2,700 teachers, principals, and supervisors of project institutions.
- printing 10 textbooks and related teaching guides for grades 5 and 6 in rural schools (about 300,000 books).

Additional project elements include strengthening administrative capabilities in some MOE departments; conducting a school facilities survey and school map, as well as a bilingual education study; and providing 8 man-years of technical assistance and 27 man-years of fellowships for training abroad.

ANNEX B

BILINGUALISM AND EDUCATION

Paraguay is one of the most bilingual countries in the world: approximately 92 percent of the population speaks Guarani, while 55 percent is Spanish-speaking.^{1/} It is the purpose of this annex to analyze the Paraguayan linguistic situation and to explain its relationship to education. The linguistic parameters will be defined, in terms of monolingual speakers and bilingual speakers, as well as the linguistic profile of the school-age population. Socio-linguistic information will be included to illustrate the attitudes and values concerning each of the languages. The development of language policy in Paraguay will be traced, and the attempts of private groups to adjust to the linguistic situation in the schools will be reviewed. Finally, the current plans of the Ministry of Education for the initiation of an experimental bilingual education project will be presented.

A. BILINGUALISM IN PARAGUAY

Table B-1 shows the distribution of the number of monolingual and bilingual speakers of Spanish and Guarani, based on information from the 1950 and 1962 census.

Due to the flexibility exhibited by any language in adjusting to a wide range of usages, and to the fact that a speaker of a language develops a strong personal identity with "his" or "her" language, the phenomenon of shifting from one language to another within a linguistic community usually takes several generations. This remains true, even when members of the community are attempting to adjust to new social, economic, and political realities. As little significant restructuring of Paraguayan society has taken place, it is safe to assume that the linguistic situation has undergone minimal change since 1950 and 1962. In fact, linguists agree that the bilingual situation in Paraguay has established its own balance, and is in no way transitional.

^{1/} A distinction must be made between bilingual individuals and a bilingual country. While it is theoretically possible to have a situation in which most individuals in a country are bilingual, the nature of language acquisition as well as the role of language in maintaining social stratification makes this possibility unlikely. Bilingualism implies the co-existence and interaction of two groups of people who speak different languages, and consequently, the existence of individuals from each of these groups who speak both languages.

TABLE B-1

POPULATION DISTRIBUTION BY LANGUAGE SPOKEN, 1950 AND 1962^{1/}

Census	Spanish Only	Guaraní Only	Spanish- Guaraní	Other Languages ^{2/}
	%	%	%	%
1950	4.7	40.1	53.8	1.4
1962	4.4	45.1	48.4	2.1

Source: Bureau of Statistics and Census.

- ^{1/} The 1972 census did not include any questions concerning linguistic characteristics of the population.
- ^{2/} Both censuses excluded information concerning other indigenous languages; at present, there are 17, spoken by an estimated 50,000 inhabitants, or approximately 2 percent of the population. The data given above are for immigrant groups, primarily Brazilian, European, and Asian.

The data in Table B-1 show only the proportion of people in each category in relation to the total population. What is of more interest is where the speakers of each category may be found, what their position in society might be, and what their attitudes and beliefs are concerning the use of each language.

Approximately 34 percent of Paraguay's population lives in what have been officially classified as urban areas; the remaining 66 percent live in rural areas. Table B-2 shows monolingual or bilingual speakers, by urban and rural areas, as percentages of total population.

TABLE B-2

POPULATION DISTRIBUTION ACCORDING TO LANGUAGE SPOKEN, BY LOCATION

Census	Spanish %		Guaraní %		Bilingual %	
	Urban	Rural	Urban	Rural	Urban	Rural
1950	2.0	2.7	1.7	38.4	12.2	41.6
1962	2.4	2.0	1.3	43.7	12.4	36.0

Source: Bureau of Statistics and Census.

To further illustrate the urban/rural differences, Table B-3 shows percentages of each linguistic category, in terms of total rural and total urban populations.

TABLE B-3

PROPORTION OF THE POPULATION BY LANGUAGE GROUP, IN RELATION TO TOTAL URBAN AND RURAL POPULATION

Census	Spanish %		Guaraní %		Bilingual %	
	Urban	Rural	Urban	Rural	Urban	Rural
1950	13.0	3.2	10.6	45.7	76.1	49.5
1962	14.7	2.4	9.1	52.3	77.0	43.0

Source: Bureau of Statistics and Census.

As shown, the incidence of bilingualism is much greater among the urban population. On the other hand, the rural population includes a larger proportion of monolingual Guaraní speakers.

B. LANGUAGE ATTITUDES

From a socio-linguistic perspective, the attitudes held about each of the linguistic categories are as important as the number of speakers in each category. Although Paraguay emphasizes its role as a bilingual nation, it is individual bilingualism that is in fact stressed; i.e., the simultaneous knowledge of both Guaraní and Spanish. While Guaraní may be considered more poetic or romantic by many bilingual speakers, who might prefer it for telling jokes and singing songs, the language is not thought of as having any inherent value. Thus, a person who speaks only Guaraní is considered to be guarango (ill bred), menos inteligente (less intelligent), and menos culto (less cultured) than a person who is bilingual or even monolingual in Spanish. Monolingual speakers of Guaraní often share this kind of deprecatory attitude and call themselves tavy/taví (stupid) because they are unable to speak Spanish.^{1/} They are also described and will describe themselves as uneducated and uncultured if they speak only Guaraní. This seems to stem from the fact that it is in the schools of Paraguay that the monolingual Guaraní speaker generally has his or her first exposure to Spanish. The assumption is made that the person who does not speak Spanish is the person who has not had much formal schooling.

TABLE B-4

DISTRIBUTION OF THE POPULATION BY LANGUAGE CHARACTERISTICS, ACCORDING TO AGE

Census/Language	Est. Age	Est. Age	Est. Age	Est. Age	Est. Age
	3-4 %	5-15 %	16-44 %	45-64 %	65+ %
Spanish	7.8	4.8	3.8	3.9	3.6
1962 Guaraní	69.5	51.0	37.0	46.3	58.3
Bilingual	22.6	44.2	59.2	49.6	37.9

Source: Bureau of Statistics and Census.

^{1/} Joan Rubin, National Bilingualism in Paraguay, The Hague, Mouton, 1968.

As illustrated in Table B-4, 70 percent of all pre-school age children in 1962 spoke only Guaraní. If the urban and rural differences shown in Table B-3 are correlated with this information, it can be estimated that over 90 percent of rural children starting school speak only Guaraní. The ages of Spanish acquisition appear to be from 5 to 15, with the highest rates of bilingualism found in the 16 to 44-year-old age group.

The only study that has associated the amount of Spanish spoken with years of school attendance was done in Itapuami.^{1/} This study found that there is a high correlation between the number of school years completed and the degree of bilingual proficiency.

TABLE B-5
LANGUAGE AND SCHOOLING IN ITAPUAMI, 1968

	None	1	2	3	4	5	6	7	Σ	Actual Number
Monolingual	17.5	3.3	1.6	0.2					22.6	185
Incipient ^{1/}	5.5	5.4	7.1	2.8	0.2				21.2	173
Subordinate ^{2/}	1.5	1.6	10.5	12.5	5.1	0.2	0.2	31.7	31.7	259
Coordinate ^{3/}	0.5	0.6	2.3	4.9	6.2	4.7	3.7	1.6	24.5	

Source: Rubin, 1968.

N.B. Figures are percentages, unless otherwise noted.

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- ^{1/} An incipient bilingual is a person who although unable to produce any utterances in the second language, might still indicate some understanding.
- ^{2/} A subordinate bilingual is a person who is able to speak a language, but not fluently.
- ^{3/} A coordinate bilingual is one who both speaks and understands a language well.
-

^{1/} Itapuami is a small rural community with 817 adult inhabitants, northeast of Asuncion (Rubin, op. cit., p. 77).

C. LANGUAGE AND EDUCATIONAL PARTICIPATION

The family who speaks Guaraní places a great deal of emphasis on formal schooling for the children. However, there are a number of factors which hinder the learning of Spanish, or of any other subject, by the monolingual child who enters the Paraguayan school system.

The monolingual, Guaraní-speaking child entering school for the first time is confronted not only with the new experiences of school itself, but also with what might be considered a foreign culture, due to the heavy urban bias of the curriculum. Even more critical are the problems which the child faces in attempting to adapt, when all school materials and academic content are presented in Spanish, which to the child is essentially a foreign language. The child finds himself in the position of having to perform in Spanish, when he does not know the language; and he very quickly becomes alienated and either drops out or is withdrawn by his parents, who realize that he is not benefiting from the experience.

D. CURRENT POLICIES AND INITIATIVES

GOP policies presently fall far short of dealing with the language problems of the campesinos. A beginning was made in 1968, when the Paraguayan Constitution was amended to make the country officially bilingual. Spanish is defined in the amendment as the "official" language of government and commerce, and Guaraní is described as the "national" language. This official position is not reinforced by any policy, however, which would give real significance to the amendment. Only recently has the Ministry of Justice and Labor allowed testimony in courts to be given in Guaraní; the Ministry of Defense now requires entrants to pass an oral test in Guaraní in order to become soldiers. In 1972, the Ministry of Education lifted the prohibition on the use of Guaraní in the classroom; but the MOE provides no bilingual materials or training in bilingual instruction for teachers.

The linguistic problems of children in the rural schools have been evident for many years. Most rural teachers have had to cope with the situation on their own; they have received little assistance from the Ministry of Education. Traditionally, the teachers have developed individual approaches and ideas concerning the teaching of Spanish and the use of Guaraní in the classroom.

The first attempt by the MOE to systematically develop Spanish teaching materials was in 1962, in the rural school of Posta Gaona, a small town about 20 kilometers from Asunción. The language arts exercises that are now included in the new curriculum are the final products of the work done in Posta Gaona through 1968.

Prior to 1972, the use of Guaraní in the classroom was prohibited. According to the 1973 educational reform, however, one of the objectives of the new curriculum is to ensure that the use of Guaraní in the classroom facilitates and reinforces the educational process. At the present time, however, no official recognition has been given to the need to include the instruction of Spanish in the curriculum, even though it is openly admitted that the primary motivation for sending children to school in the rural areas is to enable them to learn Spanish.

Several private initiatives have been attempted in bilingual education; they have met with limited success. All have been efforts by religious organizations, solely involved with local Indian groups. Although Guaraní is an Indian language and dialects are spoken by several Indian groups, the majority of Guaraní-speaking Paraguayans are mestizos.

The first conscious attempt at bilingual education in Paraguay was made by the Anglican Church some 80 years ago in their mission station with the Lengua Indians. The school has been functioning intermittently since the turn of the century; after being closed for several years, it was re-opened in 1968 and presently has 100 children attending pre-school through sixth-grade classes. Of the three teachers, two are Paraguayan and the third is English. Since 1974 the curriculum has actually been trilingual, since the pre-school year is taught in Lengua. Instruction is given in Guaraní, which is used through the first three grades. The fourth grade is a transitional year, when the students begin to study Spanish; and the fifth and sixth years are taught in Spanish.

The Anglican Church is currently printing some of the materials developed by the teachers, even though there are no plans to expand the program to other communities where Lengua is spoken.

The most sustained effort in bilingual education has been that of the Mennonite colonies in the Filadelfia area. Since 1937, Mennonite schools in Lengua and Chulupi communities have offered instruction in the indigenous languages, while teaching Spanish as a second language. There are now 43 schools with a total enrollment of 1,800. The Mennonites have printed several textbooks in both Chulupi and Lengua, and they are presently trying to standardize the teaching of Spanish in their schools. This is difficult, as they offer no training to their teachers beyond the teacher training courses in Asunción given by the MOE, which do not include the teaching of Spanish in their course content. Even though the curriculum and the organization of these schools vary greatly from their public system counterparts, the project is supervised and partially funded by the Ministry of Education.

The only other effort in bilingual education was initiated in 1967 by New Tribes, the American protestant mission. They are now working with five different Indian groups, in five schools. Instruction is in the Indian languages and Guaraní, although they hope to develop materials for teaching Spanish in the upper primary grades. All teacher training and materials development is done by the missionaries.

The Ministry of Education is currently planning to initiate an experimental bilingual education project in the 1978 school year. An investigative unit has been studying the effects of bilingualism on scholastic achievement since January 1976. Recently, the unit has been looking into the problems of writing Guaraní and using it in first grade textbooks, as well as studying the speech of first and second grade children in both Spanish and Guaraní. This information will facilitate the design of Spanish materials for use in the first and second grades. The unit is also gathering information about parent expectations of what children should be learning, and parent opinions of what children actually are learning.

The Ministry of Education will be experimenting with two transitional models of bilingual education over the next three years in twenty selected rural schools. In one model, Guaraní will be the initial language of instruction, and Spanish will be taught as a second language. It is hoped that a transition to the Spanish curriculum can be effected in three years, without impeding academic progress.

In the alternative approach, Guaraní will not be used as the language of instruction. Instead, the first grade will be used as a preschool year for the purpose of teaching Spanish. It is expected that content courses in Spanish can be given at an earlier date, thereby avoiding possible instructional problems which may be encountered during the transition from Guaraní to Spanish.

The progress of the students in each model will be evaluated, by means of a control group consisting of similar schools using traditional instructional methods.

ANNEX C

MAJOR NON-FORMAL EDUCATION PROGRAMS IN PARAGUAY

The following descriptions of the major non-formal education activities in Paraguay are based on reports which were previously developed by two members of the assessment team; they have been supplemented with additional information gathered during the assessment. Each activity is catalogued according to training function.

A. PRE-EMPLOYMENT TRAINING

1. Servicio Nacional de Promoción Profesional (SNPP)

1. Total number of participants to date: 5,630.
2. Yearly global cost of the program: approximately \$380,000.
3. Objective: to provide practical, job-oriented training, mainly in the blue-collar and service skills, for unemployed and under-employed members of Paraguay's working force.
4. Methodology: combination of theory and shop practice by the participants, in courses ranging in length from three to ten months.
5. Type of training: blue-collar skills, agriculture, and services.
6. Target population: men and women, urban and rural.
7. Starting date: 1972.

Since its establishment, the objective of SNPP has been to provide pre-employment technical training at little or no cost, in order to help participants secure employment.

In addition to the training center in Asunción. SNPP frequently transfers some of its machinery to a town in the interior and conducts courses using whatever facilities are locally available, usually school buildings.

Although all of SNPP's present financing comes from the national government, there has been international assistance to the program in the past and there are plans for more in the future. Grants have been made by Great Britain and Spain, and currently there is a loan from the World Bank to undertake skill training in relation to the Itaipú construction project.

The courses taught by SNPP are grouped into three major sectors: agriculture, industrial, and service. Agricultural training is offered in operation of tractors; wheat, corn, cotton, potato, sugar cane, and soybean production; dairy maintenance; and swine production. In the industrial sector, training is given in masonry, electricity, welding, leather-working, diesel mechanics, operation of heavy machinery, and carpentry, among others. In the service sector, courses are offered for restaurant workers, chambermaids, cooks, bartenders, laundry operators, and receptionists.

The length of each course varies; the shortest lasts three months, and the longest, ten months. The weekly instructional load is twenty hours, broken into five sessions of four hours each.

Since its inception, approximately 5,500 people have been trained through the SNPP program. It has grown from 800 students and 18 full-time instructors in 1972, to 2,400 students and a full-time staff of 48 during the 1975 calendar year.

2. Escuela de Sanidad Militar

1. Total number of participants to date: approximately 1,000.
2. Yearly global cost of the program: not possible to calculate.
3. Objective: to train participants as nurses, medics, dental technicians, pharmacists, radiologists, anesthetists, and laboratory technicians to work in military posts throughout the country.
4. Methodology: lectures supplemented by audio-visual aids and practical laboratory work.
5. Target population: young men; some professionals.
6. Starting date: 1920.

The Military Hospital and Sanitation School, under the aegis of the National Armed Forces, is a part of the Central Military Hospital complex located in Asunción. Since its inception, it has supplied the country with personnel trained in nursing and first aid; in 1957 the program was expanded to include additional specialties.

The target population for the nursing and medic courses are military conscripts. They are males, 18 years of age or older, and must have completed at least the Basic Cycle of secondary school. Participants in the course for health officers are professionals, doctors and dentists usually between the ages 30 and 35.

The Escuela de Sanidad Militar has supplied the military with trained medical personnel, many of whom continue to practice their specialties after leaving the army. The program is relatively small; only 1,000 individuals have participated since 1920.

3. Escuela Agrícola de Villarrica

1. Total number of participants to date: data unavailable.
2. Yearly global cost of the program: \$30,183.
3. Objective: to train intermediate-level technicians in the various fields of agronomy.
4. Methodology: mostly lectures and practical work groups; practical demonstrations; audio-visual materials.
5. Target population: young campesinos.
6. Starting date: 1939.

During the first year of training at the Escuela Agrícola, the student learns the basic concepts of agriculture, including crops, poultry raising, and livestock, and also takes courses in the humanities. The second year consists of intensive training in more specialized areas of agriculture. Participants are required to enter an apprenticeship program, in which they serve as assistants to agronomists working in agriculture extension.

Students are sons of campesinos, at least 15 years old, who have completed primary school. They come from the Departments of Alto Paraná, Caaguazú, and Guairá.

4. Instituto Politécnico "Juan XXIII"

1. Total number of participants: 1,186.
2. Yearly global cost of the program: \$11,429.
3. Objectives: skill formation at the intermediate level and preparation in the humanities in accordance with national secondary school requirements.
4. Methodology: combination of theory and practice, featuring classroom lectures and workshops, supplemented by audio-visual aids.
5. Target population: young urban males.
6. Starting date: 1964.

Instituto Politécnico "Juan XXIII" is a private institution founded to prepare automotive mechanics with a third-level license, and licensed drivers. It is located in Encarnación, Paraguay's second largest city, and is under the direction of a Catholic religious congregation, The Fathers of the Divine Word. The program began with 1 instructor and 27 students; in 1968, it evolved into the Polytechnic Institute, with a larger staff and an expanded program which included instruction in humanities at the secondary level. Enrollment rose from 44 in 1967 to 60 in 1968, and has continued to increase; 198 participants attended in 1975. In 1972, the Institute was recognized officially by the Ministry of Education, and it is presently a dependency of the Department of Vocational Education of the MOE.

5. Colegio Técnico "Javier"

1. Total number of participants to date: 1,197.
2. Yearly global cost of the program: approximately \$3,968.
3. Objectives: to form habits of respect and consideration toward other human beings, according to Christian ideals; and to prepare students who are well qualified in technical skills.
4. Methodology: theory and practical instruction, supplemented by audio-visual aids. Classes in theory have 30 students, while the size of the practical sessions is limited to 15.
5. Target population: young urban males.

Colegio Técnico "Javier," a private institute located in Asunción, is run by the Jesuits. It was established to meet the demand for technical training among the residents of the neighborhood around the school. In 1975, 198 participants were registered, of whom 180 finished the course.

Training is offered in automotive mechanics, electricity, and radio and television repair. While the program is open to women, the majority of students are men, due to the fields of specialization in which training is offered.

Graduates are employed in repair shops and radio stations, both in Paraguay and in neighboring countries.

6. Instituto Agropecuario "Carlos Pfanni"

1. Total number of participants to date: 132 (since 1971).
2. Yearly global cost of the program: \$63,492.

3. Objectives: to prepare students in accord with their talents and interests to be effective as skilled artisans in industry, farming, commerce, or other areas of production and service, so that they might earn a decent living; and help fill a nationwide need for skilled labor.
4. Methodology: a combination of theory and practice; the guiding principle is learning through experience. There is immediate practical application of all theoretical material given in the classroom. Audio-visual aids such as film and flip charts are used to supplement classroom presentations.
5. Target population: campesinos between the ages of 15 and 19.
6. Starting date: 1927; reorganized under present structure in 1971.

The Institute was founded in 1927 in the town of Ipacarai by the Catholic Salesian Congregation, to provide training which led to a diploma as a Perito Agrónomo (lowest level agricultural technician). In 1956 the Institute was moved to the city of Coronel Oviedo in Caaguazu Department; and in 1971 the program was modified to include academic training. Since its reorganization, the Institute has produced 132 graduates. There were 105 students registered for the 1976 course.

Successful completion of the program results in a secondary diploma as well as a specialization certificate in agriculture. Graduates are qualified to work with university-trained agricultural technicians in extension and agricultural credit.

7. Centro de Formación de Auxiliares de Enfermería (CENFAE)
 1. Total participants to date: 613.
 2. Yearly global cost of the program: \$25,396.
 3. Objectives: to prepare selected candidates to provide limited nursing services; and to prepare technical staff to start similar training programs elsewhere in Paraguay.
 4. Methodology: lectures, visual aids, and practical demonstrations.
 5. Target population: men and women over 18 years of age who have completed primary education.
 6. Starting date: 1958.

CENFAE was established in 1958 to produce auxiliary medical personnel for government health centers throughout the country. Last year an experimental course was begun for midwives. The program is administered by the Ministry of Public Health and Social Welfare. Of the total participants to date, 593 have been women; in recent years, there has been a great demand for this training and especially an increased interest by men. Although many job opportunities for graduates exist in Paraguay, the low salaries offered have caused many graduates to seek employment in other countries.

Students in the Center are at two levels. The in-service group consists of employees of the Ministry who are interested in improving their skills in relation to their current jobs. Others form a pre-employment group which is made up of persons with limited education and little or no experience, who are seeking careers in health care.

8. Instituto Técnico-Vocacional Santa Bernardita

1. Total number of participants to date: 4,225.
2. Yearly global cost of the program: \$5,555.
3. Objectives: to interest students in the study and development of domestic arts; to teach Christian moral and ethical principles.
4. Methodology: a combination of theory and practice using lectures, demonstrations, and workbooks.
5. Target population: adult urban women and female domestic servants.
6. Starting date: 1952.

The Santa Bernardita Technical-Vocational Institute is a private institution located in Asunción, operated under the auspices of the Catholic parish, San Miguel Arcángel. It is run by the parish priest, with assistance from one of the parishioners. The Institute began functioning in 1952 and was officially recognized by the Ministry of Education in 1953.

The goals of the program are to begin training in woodworking and carving, clothes design, and personal hygiene; and to continue the existing courses in garment-making, home economics, and manual arts. Graduates are prepared to work in clothing shops and factories, and basic primary education is also provided.

9. Escuela Técnica Salesiana "Pedro Jorba"

1. Total number of participants to date: 166.

2. Yearly global cost of the program: \$39,682.
3. Objectives: to prepare qualified workers for the mechanical and industrial development of Paraguay who at the same time have a broad general education based on Christian principles.
4. Methodology: classroom presentations, practical application, and skill development in school workshops.
5. Target population: males over 12 years of age, generally with a complete primary education.
6. Starting date: 1959.

The Salesian Technical School began its operation in 1959 through a private donation of \$7,936. This religious group had given technical training along with general education since 1897, but the technical section was closed in 1902. In addition to the original grant, German church sources provided funds for additional equipment and made possible a production unit which provides most of the funds to support the school. Throughout the program, new technical fields have been added to the curriculum, but the number of students has remained almost constant.

B. IN-SERVICE TRAINING

1. Instituto de Desarrollo Municipal (IDM)
 1. Total number of participants to date: 2,100.
 2. Yearly global cost of the program: \$15,873.
 3. Objective: to improve the working capacity of municipal employees and achieve cooperation within the community for municipal goals.
 4. Methodology: lectures followed by dialogues among participants on points given in the lecture.
 5. Target population: white collar municipal employees.
 6. Starting date: 1971.

IDM is an autonomous development institute founded by the Paraguayan government in 1971. It is located in Asunción, but establishes centers of operation in the interior of the country as needs arise. Although autonomous, it has ties to the executive branch of the national government through the Ministry of the Interior. It is supported through a USAID loan.

The objective of IDM is to stimulate the development of the government at the municipal level in the interior by providing technical, administrative, and financial assistance to the municipalities in the following areas: municipal administration, personnel administration, tax collection, planning of municipal works and services, planning of projects which require inter-municipal cooperation, organization of municipal enterprises, judicial matters, property tax management, planning of housing projects, and preparation of proposals regarding municipal improvement projects.

In 1976, training courses were conducted for 10 to 20 employees from each of 168 municipalities. The courses vary in length from one to five days. The target population is made up of municipal employees, who for the most part are adult males. Although they reside in the interior, they live in towns and therefore have an urban orientation. They are classified as semi-skilled, white-collar officials and almost all have finished primary school; a considerable proportion have completed at least some secondary school.

2. Centro de Adiestramiento en Servicio (CAES)

1. Total number of participants to date: 24,377.
2. Yearly global cost of the program: \$67,460.
3. Objectives: to train administrative personnel at all levels of government and from private institutions in skills needed to increase the effectiveness of their organizations; and to prepare instructors capable of organizing and implementing similar training programs in other parts of Paraguay.
4. Methodology: group techniques stressing the active participation of students in the learning process, role-playing, debate, slides, and movies.
5. Target population: employees of the municipalities, the central government, and private institutions.
6. Starting date: 1962.

The Center for In-Service Training began its activities in 1962 with support from USAID/Paraguay and the Ministry of Finance. The Center was created for the purposes of training office staff of government agencies in filing methods, advanced typing, and secretarial services. In the second year of operation, the program was extended to include the preparation of instructors to provide similar kinds of training in the interior. In 1965, the Center became a part of the School of Economics of the National University. Training programs are now offered in a wide variety of administrative areas, for central government and municipal employees as

well as for people in other public and private offices. Approximately 70 training programs are given each year.

The training provided by the Center is organized into four programs: administrative training, special programs, training for municipal administrators, and motivational training.

During the first years of the program, it was supported by grants from USAID and some assistance from the organizations benefiting from the training. The financial information available for 1974 shows that AID financed over one-third of the costs; sales of materials and course fees covered an equal amount; and the Ministry of Finance contributed the balance.

C. PRODUCTION TRAINING

1. Servicio de Extensión Agropecuaria (SEAG)

1. Total number of participants to date: SEAG agents are in contact with 8,000 families through 163 extension agents in 67 sub-regional offices.
2. Yearly global cost of the program: \$507,936.
3. Objective: to help farm families make better decisions about agricultural production, and to promote increased income and a better life.
4. Methodology: personal visits, demonstrations, field trials, and group meetings.
5. Target population: medium and small-scale farm families, plus some large-scale producers.
6. Starting date: 1952.

SEAG was formed under the auspices of the Ministry of Agriculture. The service consists of three branches: research, extension, and seed development and procurement. It has grown considerably since its inception, when it had approximately 50 technicians and about 20 sub-regional offices. By the end of 1975, the extension staff had grown to 163 technicians, and the number of offices, to 67. Recently, SEAG created a department of communications, which is beginning to produce flyers and information bulletins for both farm families and technicians.

One aspect of SEAG training is directed to farm families; the other focuses on the service's own extension personnel. SEAG extension agents use group meetings, personal visits, discussions, regional trials, and demonstrations to transfer agricultural technology. Such methods are occasionally supplemented by films. The service frequently works through

existing organizations such as cooperatives and associations, and it has started mothers' clubs and 4-H clubs for adolescents. In this way, all members of the farm family are taken into account. Many participants, especially the adults, have had only one or two years of schooling, and are basically illiterate.

The impact of SEAG on the Paraguayan countryside seems to be considerable. However, the relevance of the information transferred by the program is unknown, since no evaluation studies have been carried out. As indicators of success, SEAG officials point to recent increases in national agricultural production, and to former 4-H club members who became leaders in their communities, agricultural cooperatives, or farmer organizations.

2. Instituto de Bienestar Rural (IBR)

1. Total number of participants to date: unknown, as no data exist.
2. Yearly global cost of the program: \$2,420,000.
3. Objectives: to assist campesinos obtain land; and to provide general training in health and agriculture.
4. Methodology: short courses with lectures, and some demonstrations, audio-visual aids, and discussions.
5. Target population: campesinos.
6. Starting date: 1970.

Established under Law No. 852, IBR is mandated to direct land reform in Paraguay. The general goal of the institution is to help bring about the development of the rural areas and the campesinos who live there. IBR forms part of the Consejo Nacional de Progreso Social, and works with other Consejo members (Secretaría Técnica de Planificación and the Ministries of Education, Justice and Labor, and Public Health and Social Welfare), as well as associate members (BNF and the Ministry of Public Works), in planning and carrying out programs.

IBR has about 40 technicians in the countryside; the majority are men who work out of regional offices. About 15 farm teams with technicians from other sectors (agriculture, health, labor) in non-formal education. The topics which they stress are the process of land titling; the rights and responsibilities of landowners; and management of credit. The basic teaching format is a formal course, lasting up to four weeks, held in small towns in the interior. As a rule, 40 to 60 campesino leaders attend each course.

3. Crédito Agrícola de Habilitación (CAH)

1. Number of participants in total credit and training program: 27,730.
2. Global yearly costs of full program: \$214,285.
3. Objective: to provide supervised agricultural production credit for the small farmer.
4. Methodology: informal visits and formal presentations on technical subjects, with demonstrations and practice.
5. Target population: small farmers, especially colonists.
6. Starting date: 1943.

CAH was established in 1943 as a division of the Bank of Paraguay in order to provide supervised agricultural production credit for low-income farmers otherwise unable to qualify for loans. In its early years, it provided both short and long-term loans, managed pools of machinery for rental, and provided agricultural supplies. Six regional and twenty district offices organize the services provided to the farmers. Training is part of the program but takes a secondary role to the principal credit function.

The goal of the training is to help the farmer improve his production and thus increase his income. Classes cover the use of fertilizers and insecticides, times of planting, and other critical agricultural techniques; improved living conditions; and nutrition and health. Formal presentations are made in these subjects and, where possible, there are demonstrations and practical work. In reality, most training is much less formal; it is carried out during the frequent visits of the supervisor to help plan and monitor the production financed by the program.

Trainees are almost all farmers, especially low-income colonists with large families. Over 27,000 people have taken part in the total program; but the number receiving training is not available. 1974 figures show that the service was extended to 3,150 farmers, with a total of 11,000 hectares.

4. Fondo Rotativo de Préstamos Pastoral Social

1. Total number of participants to date: approximately 200 families.
2. Global yearly cost of the program: approximately \$15,873.
3. Objectives: to help groups who through unified action wish to achieve better economic development; and to train

groups in economic and technical areas, to enable them to undertake such unified action.

4. Methodology: learning while doing; questioning successes and failures; and starting projects.
5. Target population: campesinos.
6. Starting date: unavailable.

The Fondo Rotativo de Préstamos is experimental in nature; it is the first attempt in Paraguay of the Catholic Relief Services (Caritas) and their counterpart agency, Pastoral Social, to undertake self-help development projects.

The transfer of knowledge and experiences occurs as a result of the visits made by the technicians to the communities. Generally, in the first meeting the objectives of the group's project are set forth, and alternative ways to achieve them are discussed. Subsequent meetings consist of round-table discussions in which the progress of the project is evaluated.

The most cases participants are campesinos who are members of cooperatives or pre-cooperatives; they have some experience with working in groups. There are no prior education prerequisites for participating in the program.

5. Asociación Rural del Paraguay

Asociación Rural del Paraguay is a private institution founded in 1903, reorganized in 1938, and officially recognized by the Paraguayan government shortly thereafter. It maintains a central headquarters in Asunción and draws participants from all sectors of the country. Among its objectives are: to stimulate the spirit of cooperation among cattlemen and rural laborers; and to transfer to its members knowledge relating to improved techniques of farming in general and cattle-raising in particular. A major vehicle used by the association for transferring information is the organization of periodic seminars, group meetings dealing with farming topics, and agricultural fairs. The target population is primarily large-scale cattlemen and farmers. The yearly global budget is calculated to be approximately \$373,015, all of which is provided by membership dues and special donations from members.

D. BASIC EDUCATION

1. Programa de Alimentación y Educación Nutricional (PAEN)

1. Total number of participants to date: 13,786.
2. Yearly global cost of program: \$38,095.

3. Objectives:

- a. Long range: to improve the level of life in the rural areas, especially the nutrition of pregnant and lactating women and pre-school children;
- b. Short range:
 - 1) to improve family farms and school gardens, with particular attention given to vegetables, fruit, poultry, swine, fish, and soy production;
 - 2) to develop nutrition education programs in rural primary schools;
 - 3) to increase nutrition activities in both rural schools and homes;
 - 4) to stimulate improved health conditions within rural homes; and
 - 5) to promote artisan activities as a supplementary source of income.
4. Methodology: combination of theory and practical application, including lectures, group discussions, demonstrations, and audio-visual aids such as films, slides, and flip charts.
5. Target population: campesinos families; primary school students; semi-professionals such as rural nurses' aides and rural teachers; rural community leaders; and professionals such as doctors and school directors.
6. Starting date: 1959.

PAEN, established in 1959, was given the responsibility for coordinating the nutrition programs of the Ministry of Public Health and Social Welfare, the Ministry of Agriculture, and the Ministry of Education. International organizations such as UNICEF, FAO, OMS/OPS, UNESCO, and PMA have provided technical advice, equipment, and materials. Since 1972, PAEN has been a part of the national integrated rural development service, under the auspices of the National Council for Social Progress (CNPS).

PAEN provides general education in nutrition and health, as well as training in the preparation of nutritionally balanced meals. The target population is most often urban housewives, campesino women, or leaders of campesino communities. The format most frequently used is a one or two-day workshop. The topics presented at such work sessions include incorporation of soybeans into the daily diet, planting of fruit and vegetable

gardens, the nutritive value of milk, proper diet for babies, and home economics. The number of participants at such work sessions ranges from 20 to 25 at some of the one-day presentations, to a maximum of 250 at week-long sessions. Lectures, demonstrations, and films are some of the teaching methods used during these short courses. Courses are held at PAEN's headquarters in Asunción as well as in the interior, where the site may be a rural school, health center, or municipal office building.

A second format used by PAEN is a month-long course which is directed at professional and semi-professional groups such as school teachers, directors of schools, and nurses' aides. This training is given in order to upgrade the ability of such people to transfer information to their students and patients.

To date, PAEN has had 13,786 participants in its training courses. There are uncalculated numbers of people being reached through the program's radio and television activities. Consequently, in terms of numbers of people reached, the impact of PAEN is impressive. However, most of these people have participated in short courses with no follow-up activity. Moreover, no overall evaluation of training effectiveness has been conducted. Nevertheless, the number of participants has almost doubled in the last two years.

2. Departamento de Alfabetización y Educación de Adultos

1. Total number of participants to date: 86,228.
2. Global yearly cost of the program: \$391,312.
3. Objectives: to improve accelerated primary education for adults; to offer adults an educational alternative in elementary professional preparation; and to provide functional education.
4. Methodology: classroom presentations using charts and blackboards, small group discussions for motivation, filmstrips, movies, radio, television, demonstrations, and practical experimentation.
5. Target population: adults between 15 and 50 years of age with little or no primary education.
6. Starting date: 1966.

In 1966, adult education under the MOE was organized much as it is today: three one-year cycles, each covering two years of primary schooling with concentration on functional, life-related subjects and community development activities. In succeeding years, more literacy training was provided for military conscripts and for police officers; increased use was made of mass media, including classes by radio and television; pre-employment training was expanded and more attention was given to the needs

of women. The program has grown as follows:

<u>Year</u>	<u>Number of Centers</u>	<u>Number of Teachers</u>	<u>Number of Students</u>
1966	12	24	1,123
1970	151	466	10,055
1975	208	285	12,377

The Adult Education Department begins activities with motivation and persuasion. Functional education starts where the student lives. If he is a farmer, the course must provide him with better techniques for farming and help him produce more. Classes generally are 2 1/2 hours per day, over a nine-month period, with some flexibility according to the local conditions. Most classes meet in primary schools, although some use community buildings and churches. Classes for police and military personnel are held in their own facilities.

This program has the longest history of involvement in adult education in Paraguay of any of the institutions surveyed, and has probably exposed more people to out-of-school education programs than any other. Its costs are low, largely due to use of existing facilities and of personnel in the formal educational system, as well as the large numbers of volunteers and low-paid teachers.

3. Servicio Nacional de Saneamiento Ambiental (SENASA)

1. Total number of participants to date: data unavailable.
2. Global yearly cost of the program: unavailable.
3. Objectives: to construct infrastructure related to environmental sanitation; and to educate campesinos in the use of and benefits from such works.
4. Methodology: a combination of theory and practice, featuring dramatizations, group discussions, and field practice.
5. Target population: campesinos.
6. Starting date: unavailable.

SENASA is a semi-autonomous arm of the Ministry of Public Health and Social Welfare. The Department of Promotion and Training is the branch of SENASA which is charged with education. Its general goal is to aid in rural development through teaching environmental sanitation.

The bulk of the non-formal training carried out by SENASA is done by its 70 rural technicians, 55 of whom are in the field. Most work out of rural health centers. Participants are primarily male campesinos with several years of education, who will return to their communities after training to teach others.

SENASA has three different type of training. The first is a three or four-week course designed to train voluntary para-medics and well-diggers and plumbers for potable water systems. The goal of this course is to provide people with skills to initiate and carry out public health projects in the compañías. The course is attended by approximately 20 campesino leaders.

Course instruction in Guaraní covers administering questionnaires at a chosen test site, building latrines, installing and repairing pumps, and carrying out other health and sanitation practices.

SENASA also runs courses for food-handlers, e.g., butchers and owners of bars and restaurants in the country. The courses last one week, and the main topic is good sanitation; they are followed up by one-day refresher meetings every six months.

4. CREDICOOP

1. Total number of participants to date: unavailable.
2. Yearly global cost of the program: unavailable.
3. Objectives: to provide advisory and technical assistance in cooperative administration, management, finance, and legal matters; to channel credit to member cooperatives; to provide educational materials and activities for members; and to provide a united voice for credit cooperatives in Paraguay.
4. Methodology: formal presentation of information, along with small group discussion, use of visual aids, and group dynamics.
5. Target population: cooperative members; the majority are urban, with middle-level education. A minority are rural with little or no formal education.
6. Starting date: 1973.

The educational department of CREDICOOP organizes and implements training programs on the national, regional, and local levels. During 1975, four national-level courses were held, bringing together cooperative leaders from throughout the country to discuss common concerns, and to analyze the effectiveness of their integrating organization, CREDICOOP.

Regional courses, generally lasting two days, are also held, to train individuals from various cooperatives in special areas such as the functioning of the administrative council or the credit committee. Finally, weekend courses are organized for local cooperatives, to train the officials or members in areas of special need for the improved operation of the cooperative. Shorter, more informal training activities are organized for committees or small groups.

5. Instituto de Desarrollo Integral y Armónico (IDIA)

1. Number of participants: 1,340 during 1975.
2. Global cost of the program: unavailable.
3. Objective: to raise the level of living of campesinos and urban poor through programs of research, promotion, and education.
4. Methodology: courses, seminars, group meetings, demonstrations, and the use of audio-visual aids, particularly videotapes.
5. Target population: adult campesinos and urban poor.
6. Starting date: 1964.

IDIA, a private institution founded in 1964, initially received financial support from a private German foundation and USAID. At the present time it is completely self-supporting, maintaining itself through a tourist agency, motel business, and air transport service.

The Institute focuses its efforts in the areas of administration, agriculture, and social organization. It offers training mainly through short courses, seminars, encounter groups, and workshops. The short courses use both classroom lectures and practical application sessions, while the seminars follow a group discussion format in which the participants are encouraged to generate solutions to their own problems. Encounter groups employing group dynamics and role playing are also used.

6. Instituto Americano para el Desarrollo del Sindicalismo Libre (IADSL)

1. Total number of participants to date: 2,300.
2. Global yearly cost of the program: \$23,809.
3. Objective: to train leaders of local unions so that their organizations can function more effectively.

4. Methodology: roundtable discussions, role-playing, short lectures, and visual aids.
5. Target population: primarily urban men, 90 percent with some primary education, and 10 percent with secondary or more.
6. Starting date: 1971.

Financed by USAID, in 1971 IADSL began to work with Paraguayan labor leaders. In the first year, 60 men were educated in their rights and obligations as union members.

Training courses are given at the basic level, lasting 40 hours; at the intermediate level, lasting 80 hours; and at the national level, lasting 168 hours. All are full-time study programs. Subjects covered in the courses include union organization, parliamentary procedures, union financing, collective bargaining, social security, labor legislation, the history of the international and local labor movements, and human relations. Students are recruited by contacts with unions, associations, and federations.

7. Oficina Nacional de Progreso Social (ONPS)

1. Total number of participants to date: 1,700.
2. Yearly global cost of the program: not available.
3. Objective of the Training Department: to coordinate the training courses implemented by the various institutions which form part of the National Council of Social Progress.
4. Methodology: panel discussions, formal presentations, and group discussions.
5. Target population: all levels of staff of cooperating agencies; field technicians, para-professionals, and colonists.
6. Starting date: 1972.

ONPS was created in 1972 as the implementing arm of the National Council of Social Progress (CNPS), an inter-institutional organization formed in 1967 to plan, coordinate, and implement rural community development programs. The Council includes the Ministers of Agriculture, Health, and Education, the President of the Rural Welfare Institute, and the Executive Secretary of the Technical Planning Secretariat. The major activity of the CNPS has been an integrated rural development

program in the "Eje Norte de Colonización," an area northeast of Asunción. The National Office of Social Progress, working with the Technical Planning Secretariat, has been responsible for coordinating and supervising this complex development program. The ONPS training department has as its objective the coordination and supervision of the training courses given by the institutions forming CNPS. This department offered 69 courses through 1975, reaching 1,700 participants.

8. Centro Paraguayo de Población (CEPEP)

1. Total number of participants in program to date: unavailable.
2. Yearly global cost of the program: unavailable.
3. Objectives: to encourage and carry out careful study and research in medicine, sociology, and demography that will contribute to the development of the country; to encourage a positive change in attitudes about the family and a more general acceptance of the concept of responsible parenthood; to make information on family planning and reproduction available to doctors, paramedical personnel, community leaders, and the public in general; to provide free medical, social, and educational services through family planning clinics, aimed especially at low-income families, in order to improve the health of mothers and children.
4. Methodology: individual interviews; small group presentations and discussions; larger formal lectures; radio, television, films, and other visual aids.
5. Target population: a wide range of participants, but the majority are low-income mothers.
6. Starting date: 1966.

The Paraguayan Center for Population Studies was founded by a group of doctors, demographers, economists, and sociologists who were interested in systematically studying the population growth in Paraguay. The Center maintains a library and publishes occasional technical books and papers, as well as a bimonthly scientific journal, Temas de Población, for free distribution. The Education Department organizes training activities at the clinic level for the general public as well as other courses, seminars, and conferences for specialized groups.

Educational activities take place through home visits of clinic personnel; in individual and small group sessions; through the organization of parents' clubs; in courses and seminars; and through the use of newspapers, radio, and television. Doctors present technical information,

using terminology which can be understood by the participants. Presentations are short. Movies, hand-outs, slides, and other visual aids are used.

Clinics reach young married couples, pregnant women, and lactating mothers. Most users are from low-income groups. Specialized groups receiving seminars in recent years include armed forces medical personnel, directors and supervisors of primary schools, mass media personnel, and labor leaders. Of the 27 clinics coordinated by CEPEP in 1973, 16 were in Asunción; most of the rest were located in the larger towns of the interior.

9. Asociación Cristiana de Jóvenes (YMCA)

1. Number of participants in 1975: 7,994.
2. Total yearly costs: \$142,857.
3. Objective: to contribute to total human development within a Christian philosophy in order to help participants more effectively serve their families and nation.
4. Methodology: a wide variety of teaching approaches are used according to age group, background, and specific subject matter.
5. Target population: all ages, social classes, and economic levels; a majority are urban middle-class.
6. Starting date: unavailable.

The YMCA of Paraguay, located in Asunción, has developed into a large, multi-purpose operation. In 1974, a branch program was opened in San Lorenzo, 12 km from the capital, with the help of the Canadian YMCA.

The program in Asunción includes activities for children, young people, and adults, in camping, sports, music, family and social life, and leadership formation. Classes on such aspects of family life as physiology, reproduction, budgets, hygiene, etc., have been offered for the general public, with as many as 100 people attending. The success of these programs led the Association to plan for expansion of social and economic development activities.

In Santa Rosa de Santísima Trinidad, a neighborhood of Asunción, the Association has carried out the first of a series of planned experiments in social development. Following a process of leadership formation, the community, with Association support, built several sport facilities; a Ministry of Health kindergarten was reorganized; the adult literacy program of the Ministry of Education reopened; dental services were organized; and a program of poultry-raising began with some loans available for those interested in beginning this business.

10. Misión de Amistad

1. Total number of participants to date: not available.
2. Yearly global cost of the program: not available.
3. Objective: to help people improve the physical, social, and spiritual aspects of their lives.
4. Methodology: classroom lectures, group dynamics, and audio-visual aids such as radio, films, puppet shows, and theater.
5. Target population: pre-school and primary school age children; young adults of both sexes living in urban areas with rural backgrounds; and campesinos.
6. Starting date: 1953.

Misión de Amistad was founded in 1953 by the United Christian Missionary Society of the Disciples of Christ Church, to provide social as well as spiritual help to the poor in Asunción.

The Mission provides education for urban children, ages 4 to 14, through arts and crafts workshops and a puppet theater. There is also an adult education center, recognized by the Ministry of Education, with literacy classes, second language training, and instruction in how to deal with social problems.

The literacy classes, started six years ago, meet five times a week for two hours each night, and follow the regular school calendar. There are three cycles, which correspond to primary school grades 1 through 6. Successful completion of the courses leads to a primary school equivalency certificate. There are approximately 25 to 30 students in each section, with a drop-out rate of nearly 50 percent. Since the program began, there have been approximately 300 participants, about 150 of whom finished all three cycles.

The Mission recently sponsored a rural health education project. The initial phase, consisting of a socio-economic profile of three target areas, was complete in 1975. Subsequent work will center on the implementation of health education through group meetings; lectures using Mission as well as rural education and health personnel; movies; demonstrations; and theater. It is also planned to expand the program to the urban area around Asunción.

11. Organización de Desarrollo Comunal (ODECO)

1. Total number of participants to date: unavailable.

2. Yearly global cost of the program: \$24,080.
3. Objectives: to provide technical assistance and other support necessary to promote integrated development in both rural and urban communities; and to organize community development centers.
4. Methodology: community meetings, discussions, lectures, films, and demonstrations.
5. Target population: primarily men, but including some women and children, of rural communities with some primary education.
6. Starting date: 1964.

This group, which had been providing community development assistance in three neighborhoods in Asunción, decided to formalize and extend its efforts beyond the capital. At present, ODECO is working with nine community development centers in the Central District, in programs of health, education, and improvement of economic production. Health activities have included building of latrines, home improvement, and courses in first aid. In the educational field the organization assists communities to improve their schools and organize theater groups, movie presentations, and other recreational activities. ODECO provides training courses for teachers and has organized some adult education programs.

In an effort to improve economic production, ODECO provides technical assistance, training courses, and financing for agricultural and artisan projects, including fish, poultry, bees, vegetables, hogs, dairy improvement, and home artisan skills. Loans totalling \$7,936 have been made to 56 individuals. In many of these activities, ODECO utilizes technicians from government programs.

12. Centro Femenino de Educación Integral (CEFEDI)

1. Total number of participants to date: approximately 350.
2. Yearly global costs: \$2,380.
3. Objective: to provide short courses for women of immediate benefit to them and to their families.
4. Methodology: combination of formal presentation and practical application.
5. Target population: women of all ages and with various levels of education.
6. Starting date: 1973.

CEFEDEI grew out of the Comisión Nacional Republicana de Acción Social (CONARAS), a social action group sponsored by wives of high government officials, which previously had been active in hospital work in Asunción. The new program was established to provide training in specific fields for women. In the first year, courses were offered in hair-styling, sewing, and other aspects of home arts: 60 students participated in classes taught by three volunteers and two paid teachers.

13. Obras Sociales Salesianas

1. Total number of participants to date: 1,271.
2. Yearly global cost of the program: \$3,968.
3. Objectives: to help meet the economic, social, and spiritual needs of the target population; and to provide professional training.
4. Methodology: formal presentation and practical work.
5. Target population: urban female domestic employees.
6. Starting date: 1962.

Obras Sociales Salesianas was initiated as a social action program by the Salesian Fathers in one of the poorest neighborhoods in Asunción. Professional training is given in dressmaking and home economics. In addition, instruction is provided in basic literacy and health. The program lasts for three years, and consists of six hours of training each week, on Saturday and Sunday afternoons.

14. Proyecto Marandú

1. Total number of participants to date: approximately 12,000.
2. Global yearly cost of the program: \$95,238.
3. Objectives: to stimulate the self-reliance of indigenous groups and to improve their capacity for social development, within their own culture and in contact with wider Paraguayan society.
4. Methodology: visiting technical teams provide medical and other technical assistance, and hold informal community discussions.
5. Target population: all members of the indigenous groups.
6. Starting date: 1974.

The Marandú project, conceived by the director of the Center for Anthropological Studies at the Catholic University of Asunción, began with a grant from the Inter-American Foundation. It operates through three teams specializing in medicine, training, and documentation, plus an administrative group. In an Indian community, the technicians use traditional communication channels and systems, to the extent possible. The medical personnel work closely with the local shaman to provide medical care.

Training takes place through informal discussions held in the communities on subjects of concern to the Indians. The most common topics have been land tenure, health, and civic rights. Videotape, films, and other materials produced by the documentation team are used in the training sessions.

The total population of the Indian groups participates in the activities of the project, except where local cultural traits limit the role of some segment of the group. In addition to Spanish, Guaraní and Chulupí are used, sometimes requiring local translators.

15. UNIPACO

The national federation of agricultural marketing/service cooperatives, or Unión Paraguaya de Cooperativas (UNIPACO), was established in 1970 by twelve large cooperatives. The membership has since increased to over 30 cooperatives, representing approximately 2,700 members. UNIPACO provides such services as rental of grain drying, cleaning, and storage facilities; marketing of products; distribution of improved seeds; some agricultural processing; and sale of farm supplies. It has also provided assistance in organizing and supplying technical and financial assistance to new cooperatives and pre-cooperatives; and it has trained the managers of several member cooperatives and non-affiliated pre-cooperatives. UNIPACO provides short courses for members of affiliated cooperatives on aspects of agricultural production and marketing, as well as on cooperative organization and management.

Financial support has come from member contributions, some GOP assistance, and grants from USAID.

ANNEX D

LOW-LEVEL TECHNICAL INSTITUTES IN PARAGUAY

There are at least 282 low-level technical institutes throughout Paraguay, some of which grant degrees recognized by the Ministry of Education. They range in size from 100 students in well-equipped classrooms, to 5 students operating out of a private home. Almost all of the institutes offer training in garment-making, tailoring, and shirt-making. These courses make up 85 percent of all low-level training, although courses are also offered in typing, hairdressing, manual arts, sewing, and training for domestic service.

Table D-1 outlines the different courses offered by the institutes in each of the Departments. Asunción, in the Central District, has 73 low-level training institutes offering 145 courses. The other 209 institutes are more or less evenly distributed throughout the rest of the country, according to population.

Table D-2 shows the numbers of students enrolled in each type of course, by Department. According to a survey by the Bureau of Statistics and Census, in 1974 there were 8,308 students registered for low-level technical skills courses. Of these, 73 percent were in garment-making; 10 percent in tailoring; 8 percent in training for domestic service; and the remaining 9 percent, in the other five areas.

The total enrollment of 8,308 was at the beginning of the year; high drop-out rates resulted in only 2,761 finishing the year. Even that number does not necessarily graduate or complete a course, as some courses are longer than one year.

TABLE D-1

LOW-LEVEL TECHNICAL INSTITUTES IN PARAGUAY,
BY OFFERING AND DEPARTMENT, 1974

DEPARTMENT	TOTAL INSTITUTES	OFFERINGS							
		TYPING	HAIR- DRESSING	GARMENT MAKING	MANUAL ARTS	SEWING	DOMESTIC SERVICE	TAILORING	SHIRT- MAKING
Central (Asunción)	73	2	7	73	8	3	10	24	18
Concepción	8	0	0	1	7	0	0	0	0
San Pedro	20	0	0	16	1	0	0	3	0
Cordillera	22	0	0	19	0	0	0	2	2
Misiones	2	0	0	2	0	0	0	0	0
Caaguazú	18	0	0	18	0	0	0	3	1
Caszapá	7	0	0	7	0	0	1	0	0
Itapúa	18	0	0	18	3	0	1	3	3
Paraguarí	45	0	0	45	7	2	2	11	3
Alto Paraná	5	0	0	5	0	0	0	0	0
Central (out- side Asunción)	52	0	0	49	2	0	4	17	9
Ñeembucú	2	0	0	1	0	0	0	2	0
Amambay	3	0	2	3	0	1	0	0	0
Pte. Hayes	5	0	0	5	1	0	0	1	1
Alto Paraguay	2	0	0	2	0	1	0	0	0
Guairá	9	0	1	8	3	1	1	2	0
TOTALS	282	2	10	278	25	8	19	68	37

Source: ILO Survey, 1974. Based on information from the Bureau of Statistics and Census.

TABLE D-2

NUMBER OF STUDENTS REGISTERED IN LOW-LEVEL TECHNICAL INSTITUTES IN PARAGUAY,
BY CATEGORY AND DEPARTMENT, 1974

<u>DEPARTMENT</u>	<u>OFFERINGS</u>							
	<u>TYPING</u>	<u>HAIR- DRESSING</u>	<u>GARMENT MAKING</u>	<u>MANUAL ARTS</u>	<u>SEWING</u>	<u>DOMESTIC SERVICE</u>	<u>TAILORING</u>	<u>SHIRT- MAKING</u>
Central (Asunción)	18	72	1904	75	17	453	354	151
Concepción	0	5	221	0	0	0	0	0
San Pedro	0	0	193	18	1	9	0	0
Cordillera	0	0	53	13	0	0	12	12
Misiones	0	0	38	0	0	0	0	0
Caaguazú	0	0	380	1	0	0	86	1
Caazapá	0	0	0	0	0	0	0	0
Itapúa	0	0	219	4	0	22	0	0
Paraguarí	0	0	1080	41	12	40	156	18
Alto Paraná	0	0	98	0	8	0	0	0
Central (outside Asunción)	0	0	976	12	0	81	119	28
Neembucú	0	7	34	0	0	0	22	0
Amambay	0	13	46	19	86	0	26	1
Pte. Hayes	0	0	98	21	0	0	10	4
Alto Paraguay	0	0	95	0	21	0	0	0
Guairá	<u>0</u>	<u>99</u>	<u>169</u>	<u>35</u>	<u>10</u>	<u>22</u>	<u>12</u>	<u>0</u>
TOTALS	<u>18</u>	<u>196</u>	<u>5604</u>	<u>239</u>	<u>155</u>	<u>627</u>	<u>797</u>	<u>225</u>

A-41

Source: ILO Survey, 1974. Based on information from the Bureau of Statistics and Census.

ANNEX E

COMMUNICATIONS AND THE USE OF TECHNOLOGY IN PARAGUAY

A. GENERAL COMMUNICATIONS SYSTEM

There are two basic information channels in Paraguay: personal dialogue and the radio. They work together to transmit almost all information in the country; and their effects eclipse those of the other channels, including television, newspapers, and magazines.

1. Personal Dialogue

Oral history is a common way to transfer information from one person to another. This takes place in private homes and between extended family members, as well as in cafes, bars, markets, and churches. The bilingual character of Paraguay means that many conversations are held in Guaraní, or in the mixture of Guaraní and Spanish called Yopará (see Annex B).

2. Radio

The widespread availability of transistor sets has brought radio broadcasts to virtually all Paraguayans. It is estimated that there are 650,000 radio sets in 350,000 families, or nearly two per family. Radio signals can easily reach almost the entire country, including the sparsely populated Chaco region.

As shown in Table E-1, Paraguay has 26 AM stations, 10 FM stations, and 10 short-wave stations. The most powerful is the government station, Radio Nacional del Paraguay. All others are privately owned and operated, and depend solely on advertising revenue for support.

Stations are relatively modest; most have only minimal facilities for professional cut-ins and recording. All are linked to Radio Nacional and form a national network to bring government news twice a day, and to cover special events. Most programming is live, interspersed with recorded music.

3. Television

The country has an estimated 35,000 receivers, and two television stations: Channel 9 in Asunción, and Channel 7 in Encarnación.

- Channel 9 opened in 1965, with programming from 10 a.m. to 12:30 p.m. and from 5 p.m. to 11 p.m. Owned by several businessmen in Asunción, it has direct ties to the national government; and thus it serves as an important medium for government communications to some 300,000 viewers in the Asunción area. About 10 percent of the programming is produced locally, both live and on videotape. Another 70 percent is from the United States, and 20 percent comes from Argentina, Brazil, and other Latin American countries.

TABLE E-1

BROADCAST STATIONS IN PARAGUAYRADIO

Frequency	AM Stations		
	Name	Power	Place
570	Radio La Voz del Amambay	1 (0.5)	Pedro Juan Caballero
610	Radio La Voz del Chaco	10	Filadelfia
640	Radio Caaguazú	10	Coronel Oviedo
660	Radio Itá Pirú	10	Pto. Pte. Stroessner
700	Radio Carlos A. López	10	Pilar
730	Radio Guaraní	1.5	Asunción
760	Radio Encarnación	25	Encarnación
860	Radio La Voz de la Cordillera	25	Caacupé
890	Radio Presidente Stroessner	1 (25)	Pto. Pte. Stroessner
920	Radio Nacional del Paraguay	10 (100)	Asunción
970	Radio Comuneros	5	Asunción
980		1	Pedro Juan Caballero
1020	Radio Ñandutí	5	Asunción
1060	Radio Boquerón	10 (1.5)	Alberdi
1120	Radio Nuevo Mundo	3	San Lorenzo
1140	Radio Pananbí Verá	5	Villarrica
1200	Radio Charitas	1	Asunción
1230	Radio Centenario	3	Caaguazu
1270	Radio Saltos del Guairá	1	Saltos del Guairá
1300	Radio Paraguay	5 (2.5)	Asunción
1330	Radio Chaco Boreal	10	Asunción
1360	Radio Guairá	5 (2.5)	Villarrica
1380	Radio Concepción	1	Concepción
1400	Radio Nanawa	1	Luque
1430	Radio Difusora Asunción	0.5 (10)	Trinidad
1480	Radio América	1	San Juan - Misiones
1480	Radio Mcal. López	0.5	Bella Vista

(Continued)

TABLE E-1
(Continued)

Frequency	Short-wave Stations		
	Name	Power	Place
5975	Radio Guairá	3	Villarrica
6015	Radio Paraguay	1	Asunción
6025	Radio Nacional del Paraguay	3	Asunción
6110	Radio Charitas	1	Asunción
9735	Radio Nacional del Paraguay	100	Asunción
11850	Radio Asunción	3	Asunción
11915	Radio Nacional del Paraguay	100	Asunción
11940	Radio Nacional del Paraguay	100	Asunción
11945	Radio Encarnación	5	Encarnación
15210	Radio Guaraní	3	Asunción

Frequency	FM Stations		
	Name	Power	Place
90	ZPV 1	0.05	Asunción
95	ZPV 2	1	Asunción
97	ZPV 70 (Stereo)	4	Asunción
98	ZPV 98 Stereo	3	Asunción
100	Canal 100 (Stereo)	1	Asunción
102	ZPV 75 (Stereo) Tayy	1	Asunción
103	ZPV 4	1	Asunción
105	ZPV 10	0.1	Asunción
107	ZPV 14	0.05	Asunción

TELEVISION

Name	Place
CANAL 9 CERRO CORA	Asunción
CANAL 7	Encarnación

- Channel 7 in Encarnación was founded in 1976 to meet an increasing demand for television in southern Paraguay. It also serves as a bulwark against penetration by television broadcasts from Argentina in that area.

A survey conducted by the Instituto de Comunicación y Arte in 1976 showed that roughly 70 percent of the population in Asunción watched television regularly.1/

4. Newspapers

With one exception, all newspapers are now published in Asunción, although papers in larger cities in other Departments have existed from time to time.

News reporting is generally of low quality; reporters take most stories from government press releases, wire services, and verbal accounts of events. There is no investigative reporting. Both UNA and the Catholic University offer journalism courses, but they include only general reporting techniques.

Newspaper readership is quite high, at least in Asunción.2/

The following papers are available:

- ABC Color is an independent daily tabloid founded in 1967. With a circulation of 35,000 to 50,000, it is the leading paper in the country. It uses the major international wire services for world news, and publishes a weekly educational supplement for children.

1/ This survey divided the population of Asunción into high, middle, and low strata, based on housing, occupation, income, and other socio-economic criteria. Using a random sample of 2,411 households, the survey found that children in the middle strata watched the most television (83 percent watched regularly). Men preferred an American series, The Six-Million Dollar Man, while women preferred a soap opera entitled Piel Naranja. Children preferred Batman, The Six-Million Dollar Man, and Lost in Space. Cf. Instituto de Comunicación y Arte, Boletín de Rating y Verificación, No. 53, July 1976.

2/ The Instituto de Comunicación y Arte survey (ibid.) reported that 68 percent of those in the high strata, 58 percent in the middle strata, and 37 percent in the low strata buy at least one newspaper each day.

- La Tribuna was founded in 1925 and has a daily circulation of 8,000 to 10,000.
- Ultima Hora recently came out as an afternoon paper, using a modern offset printing system, and reportedly has a circulation of 38,000. It evolved from a morning paper called Pais.
- El Radical is a weekly published by the Radical Liberal Party; it has a circulation of 3,500 to 5,000. Formerly called El Heraldo, it has a long history of government opposition. Observers state that it practices self-censorship so as not to be suppressed; but from time to time it prints strong attacks against government policies and domestic situations.
- El Pueblo is the official organ of the Revolutionary Febrerista Party; it has a circulation of about 2,500.
- Patria, a full-size, eight-page daily, is the official organ of the National Republican Association, commonly known as the Colorado Party. It is distributed to government officials and contains major government decrees, laws, and policies, as well as explanations of programs.
- El Colorado is a weekly, unofficial publication of the Colorado Party. Founded in 1965, it attacks other publications which criticize the government.
- El Sur, started in Pilar in January 1977, is published once a month.

5. Magazines

Popular periodicals are published regularly in Asuncion, as follows:

- Nandé is a bi-monthly, founded in 1959 as a news publication. It has articles on Paraguay and other Latin American countries; it examines socio-economic issues in Paraguay, and provides reviews of books, movies, and the arts.^{1/}
- Sendero is a bi-monthly publication of the Catholic Church. Considered liberal, it offers articles on politics, human rights, and socio-economic questions.

^{1/} A recent article took the view that reading was increasing in Asuncion. Bookstore owners were optimistic about increasing sales, especially of best-sellers which had been translated into Spanish. Other popular subjects included cooking, child care, art history, mythology, sewing, and motherhood.

- Aquí, established in 1971, is a weekly gazette that reviews national and international news and provides special features about issues of local interest.
- Comercio is published by the Chamber of Commerce and the Council of Importers. It is a monthly, and has articles on business opportunities and government decrees which affect the commercial community.
- Diálogo is an independent monthly which is concerned with issues of development in Paraguay.

Local journals, such as Revista Paraguaya de Sociología, are well written but have limited readership. The most popular foreign magazines are from the United States and Argentina.

6. Movies

About 100 motion picture theaters, half of them in Asunción, attract large crowds, especially on weekends. It is estimated that 85 percent of the features come from the United States; 15 percent are from Europe, Argentina, and Mexico.

B. PUBLIC SECTOR PROGRAMS

The Paraguayan government has several programs which use mass media.

1. MOE Tele-education Department

Since its establishment four years ago the Department has produced about 80 programs for radio and 100 for television. Recently, plans have been made for a rural radio education project in Caaguazú Department, assisted by USAID/Paraguay grant funds. This three-year experimental project will attempt to introduce radio-based instruction into incomplete rural primary schools; into community learning centers in rural areas where no primary schools now exist; and into regular rural primary schools, to supplement the courses currently being offered. More detailed information on this project is found in Section VIII of this report.

2. MOE Adult Education Department

a. Tele-Centers

Since 1972, the Adult Education Department has offered accelerated primary school classes on television for adults. The course includes 100 live programs, each lasting 25 minutes; they are broadcast at 6 p.m. Monday through Friday, from April to December. Adults gather in a local club, a school, or wherever there is a television. After watching the

program, they work with a facilitator for an additional 90 minutes. MOE equivalency examinations are offered at the end of the year; and adults who pass receive a first-cycle primary certificate (i.e., equal to grades 1, 2 and 3). An MOE supervisor monitors these centers to check attendance and quality of student work.

Unfortunately, the effectiveness of this program has not been adequately measured. The MOE attaches only minimal significance to the Tele-Centers, a fact which is reflected in the small portion of the MOE budget allocated to the program. Drop-out rates are high, and most Centers close down before the end of their first year of operation. As a result, the educational programming ends up as an open broadcast program for Asunción viewers. Another problem is that only the first primary cycle is offered, which means that certification only extends through the third grade.

b. Radio Centers

The Adult Education Department also offers an accelerated primary program through radio classes for adults. Participants either form their own center or enroll in an existing group, where they receive 30 minutes of radio instruction each day. Broadcasts are followed up by work with a primary school teacher serving as facilitator. The course consists of 100 pre-recorded radio broadcasts, aired on Radio Nacional from 7 to 7:30 p.m., Monday through Friday, March to September. Students who pass an equivalency test receive a certificate equal to that received after three years of primary education.

The program has been in existence since 1969; at the present time, there are 20 centers serving about 200 students. The programs, which are recorded at the radio station at the U.S. Embassy, only offer instruction through the first cycle of primary. As is the case with the Tele-Centers, students must find an alternative if they are interested in completing all six primary grades.

3. Other Public Sector Programs

- The Ministry of Public Health and Social Welfare sponsors a live television program, aired each week, entitled Problemas de Salud.
- The Ministry of Agriculture provides agricultural information over Radio Nacional each morning from 6 to 8 o'clock. The program, which is also supported by the Instituto de Bienestar Rural, is broadcast in Guaraní. Another program, Desarrollo, is also aired from time to time, and offers a more in-depth treatment of subjects of interest to the Paraguayan farmer.

- Programa de Alimentacion y Educacion Nutricional (PAEN) occasionally offers radio and television programs which deal with such topics as diet and meal preparation using soybeans and vegetables. PAEN also broadcasts 20-minute programs every morning over a radio station in Asuncion; information is given about the structure and function of the institution and about health and nutrition.

ANNEX F

VOCATIONAL EDUCATION

Vocational education is currently one of the major areas of interest of the GOP. Perhaps more than in any other area, the role and functions of vocational education are perceived as having immediate relevance for the fulfillment of some of Paraguay's larger development objectives.

Important characteristics of the GOP's current thinking in the area of vocational education include:

- its inclusion as an integral part of the secondary level in the Diversified Cycle.
- its organizational structure, which transcends the traditional scope of MOE operations.
- its content and orientation, which extend beyond the usual terms of reference for educational policy (i.e., formal, academic, and school-based).

It must be emphasized that these characteristics are essentially intentions for a future model of development. At the present time, vocational education is not institutionalized; rather, it proceeds from what are essentially private initiatives which respond to the felt needs of given groups. In the public sector, vocational education is a residual category, constrained by critical shortages of human and financial resources. Its impact on human resource development is limited by a system of incentives which favor preparation leading to the universities and the liberal arts professions offered by them.

A. PRESENT INSTITUTIONAL CAPABILITIES: PARTICIPATION, PROGRAMS, AND IMPACT

A survey taken in 1975 shows a total of 32 vocational education centers in Paraguay.^{1/} Of these, 23 are classified as centers of

^{1/} Ministerio de Justicia y Trabajo, Dirección General de Recursos Humanos, Estudio de la Capacidad Instalada de los Centros de Educación Técnica y Formación Profesional en el Paraguay, Asunción, 1975.

technical education, and 9 as centers of professional training.^{1/}

Of the 23 technical education centers, 12 are in Asunción. The rest are located in Pilar, Concepción, Villarrica, Caazapa, Misiones, Caacupé, and Oviedo, with two each in Ipacarai and Encarnación. Six of the nine professional training centers are in Asunción, with the remaining three located in Caacupé, Villarrica, and Puerto Stroessner. Only 14 percent of the participants in all 32 of the centers are enrolled outside Asunción, however. In Asunción, the enrollment is predominantly in professional training (72 percent), while in the interior, it is concentrated in technical education (86 percent).

Eleven of the vocational education centers operate on a national level; and nine, on a regional level. Twelve are locally operated. Most of the centers receive financial support from a variety of sources. Five are fully financed and nineteen are partially financed by the government; four charge user fees; and thirteen centers are at least partially supported by foreign donations.

1. Participation and Utilization of Installed Capacity

The enrollment in the vocational education centers in 1975 was approximately 7,130. Two-thirds of the students were enrolled in professional training centers, with an average of 500 participants per center. The technical education centers are typically smaller, with an average enrollment of 105 students.

More than 90 percent of the participants are male. Half of the participants are in the 18 to 25 age bracket, with the second largest group (29 percent) in the 26 to 39 bracket. In terms of educational levels, 56 percent of the courses require completion of primary school. This requirement, however, is more stringent in professional training, where 63 percent of the courses require primary completion, than in technical education (48 percent). An additional 25 percent of the courses, particularly those offered in professional training, require secondary or previous technical instruction.

^{1/} In Paraguay, the term technical education describes programs which emphasize theoretical knowledge more than practical experience; courses of study last for at least two years. Graduates are expected to have mastered skills which are common to related occupational groups. By contrast, professional training denotes a program with courses which are specific in scope and highly practical in orientation, often tied to prevailing labor market conditions. The use of the term professional in this case represents an attempt to enhance the public perception of this type of training.

While student/teacher ratios have limited value in explaining apparent demand for teaching in these types of educational settings, the range of figures observed indicates contrasts between different areas and provides some inkling of capacity utilization.

On the average, the student/teacher ratio is 18.3:1. In the interior, the ratio is 6.4:1, while in Asunción it is 25:1. The contrast is greatest in the professional training centers: in Asunción, the ratio is 62:1, while in the interior it is 6:1. These figures indicate not only a greater teaching load in the capital, but also a significantly higher number of course offerings in any given year.

The survey indicates that installed capacity is under-utilized.^{1/} On the average, technical education facilities are utilized four hours per day, while professional training facilities are utilized for six hours. If it is assumed that optimum utilization entails approximately 12 hours of daily use, it appears that more intensive utilization could be made. Under-utilization, according to the survey findings, affects both classrooms and workshops. If full utilization were made, some 26,600 individuals could be attending the classrooms (as opposed to a current 7,134), and some 3,400 could get practice in the workshops (as opposed to a current 1,443).

The derivation of these figures is admittedly tentative and the results should be read with caution. Averages in vocational education tend to be less meaningful than in other areas of education, due to problems of comparability, substitution, access, duration of courses, and content of training. The course-by-course, individual enrollment figures show that enrollment per session generally fills the available capacity, and thus under-utilization results from having too few sessions in any given day.

2. Instructional Staff

In vocational education, the instructional staff consists of 389 teachers, 85 percent of whom are male. One-third of the instructors teach academic subjects, while the remaining two-thirds are directly engaged in the technical and instrumental areas. Eighty percent of the teachers are located in the technical education centers. On the average, male teachers are 34 years old, and females are 37. Approximately 43 percent have less than five years of experience; and 63 percent, less than ten. Only 11 percent have more than 15 years of experience. More than one-third of the teachers are university graduates, while an additional 7 percent have had some university training; 40 percent have completed the required levels of technical education, and 4 percent have had either secondary school or incomplete technical training.

^{1/} Estudio de la Capacidad Instalada de los Centros de Educación Técnica y Formación Profesional en el Paraguay, op. cit.

In terms of teaching loads, one-fourth of the instructors work full time, with 58 percent of the instructors in the professional training centers having a full-time load of over 21 hours per week. Over half of all instructors, on the other hand, work less than 10 hours per week.

B. CURRENT PLANS FOR THE DEVELOPMENT OF VOCATIONAL EDUCATION

Present plans for vocational education are based on a project financed by IDA, which contemplates the construction and equipment of so-called colegios multilaterales, or multi-purpose schools. The first one to be completed is the Colegio Técnico Nacional. The program is designed to put into practice the new organization and curriculum, and to make the bachillerato diversificado a reality. It is expected that these multi-purpose schools will produce individuals who are trained in construction, electricity and electronics, auto mechanics, diesel engine repair and maintenance, industrial chemistry, general mechanics, and refrigeration. The vocational schools would be expected to offer their services and specialized facilities to non-formal activities, in addition to the regular bachillerato program.

1. Expected Profile of Vocational Graduates

The thrust of the vocational education program is to produce graduates who have sufficient humanistic knowledge and background to satisfy the more traditional requirements for the bachillerato. Ideally, this should be complemented with the necessary scientific and technical knowledge required of a middle-level technician.

More specifically, the profile of graduates, to which the programs are expected to be tailored, includes the fostering of individual capabilities in the following areas:

- a. Research tasks: to gather and utilize data and information, and to make observations regarding available equipment and installations.
- b. Participation in small projects: to make calculations on required equipment, prepare specifications, and elaborate budgets concerning purchase of materials and amount of labor required.
- c. Participation in large projects: to backstop the professionals and managers of the project.
- d. Organization and industrial processes: to elaborate work plans, organize files and service orders, and facilitate processes according to the logic of project development.

- e. Supervision: to provide instructions to plant personnel and to participate in the work tasks.
- f. Operations: to fill out supply orders, and instruct personnel in the use of instruments and machines.
- g. Implementation: to install, maintain, and repair machines, equipment, and instruments.

2. Program of Studies, Curriculum, and Methods of Instruction

The technical/professional track will be available to students at the secondary level, in the Diversified Cycle. The course of instruction is to last for three years and will consist of a common and a differentiated plan. The common plan is shared with the liberal arts (bachillerato humanístico) program and takes up one-third of the time. The differentiated plan consists of theoretical and practical subjects which are related to vocational training.

The purpose of the curriculum is to produce graduates who are able to relate their knowledge to the solution of practical problems with which they are faced. Intensive individual participation is required. The content and materials of the program would be revised as needed, to ensure that the technical information is up to date. In terms of learning objectives, the plan contemplates fulfillment of the following conditions:

- a. Knowledge and understanding of the basic elements in a particular specialization.
- b. Knowledge and understanding of the relationships between task components and feedback, and between inputs and outputs.
- c. Knowledge and understanding of joint operations and purposes of individual tasks, to allow the individual to know and understand operations, control and maintenance.
- d. Ability to relate the functions of separate systems, and to adapt systems to the particular needs and conditions of Paraguay.

3. Needs Assessment and Proposed Delivery Models

At the present time, planning activities involve the production of an assessment of initial needs. Utilizing currently available manpower information and perceived professional training needs partly gleaned from the Economic Development Plan, the diagnosis is expected to produce an implementation plan which will, at the outset, specify the

areas of concentration, the specific content of programs, the initial intake rates, and the impact of the programs on job participation.

The schools will be organized along division lines: administration, student support, and educational services. Each school will be managed by a director and a technical/administrative board, who will jointly determine policy and supervise its implementation. The administrative division will monitor the daily operations of the institution. The division of student support will provide vocational orientation and counseling, as well as other support services, such as health care. The educational services division will be responsible for the coordination of academic areas, and for maintaining information flow and documentation services.

C. CONSTRAINTS TO DEVELOPMENT

The preceding discussion has dealt with the current status of vocational education, and with the interests, desires, and plans for the development of this branch of education. Whether the prospects for achieving objectives, in light of the current situation, seem favorable or not depends partly on individual perception of the value, utility, and efficiency of vocational education. Traditionally, this branch of education has been notorious for its high costs and low productivity, since the functions and the output of vocational schools seem to be perennially out of step with the needs of the labor market. This argument, on the other hand, can be countered with an alternative one, which defends the need for expanding the range of opportunities for knowledge and skill acquisition, particularly in areas which relate the products of education to the needs of the labor market.

The following constraints may be mentioned as being applicable in the Paraguayan situation:

- a. Lack of information: the effectiveness and impact of vocational training is related to the quality and quantity of existing information, and its utilization in planning and dissemination activities. At the present time, the information base is deficient in terms of both quantity and quality. No information generation and utilization plans are currently available, although mention has been made of the need to develop and maintain an information base.
- b. Lack of flexibility in content design and content variation: partly as a result of bureaucratic inertia, the lack of information, and the restricted range of professional training offered, vocational education has been faulted for its failure to respond to changing needs and requirements, and for having built-in obsolescence.

The Paraguayan plans demonstrate an awareness of this problem; yet, the announcement of good intentions is not necessarily a guarantee of performance in accordance with expectations.

- c. Lack of flexibility in program orientation and limited coordination among institutions: just as needs and requirements vary, the learning system should be suitably equipped to adopt a variety of approaches which may range from formal training to NFE activities and on-the-job training. The Paraguayan plan concentrates on the formal aspects, giving little emphasis to alternative approaches and inter-institutional coordination. Fundamental questions can be raised about the ability of the MOE to manage a program of this nature, to achieve the desired goals in promoting alternative delivery schemes, and to coordinate its action with other public and private agencies and programs. To the extent that these aspects are not articulated in sufficient detail, this observation remains a most critical one.
- d. Limited scope: vocational training programs cater to the needs of the modern industrial sector. The relative effort displayed in relation to other sectors of the economy is not commensurate with the needs and potentials of those sectors. It is recognized that not all problems can be faced and solved at the same time; yet, within the parameters of this limitation, planning activities should be more global in scope and take cognizance of alternative needs. The Paraguayan plan is designed to meet modern sector needs. No similar effort is currently envisioned in the agricultural sector, which will continue to be the basis of the Paraguayan economy.
- e. Distorted or limited incentives: the prevailing economic and social incentives conspire against sustained demand for vocational training. In Paraguay this situation is admittedly different from that in other Latin American countries, where earning differentials between the professions and blue-collar activities are ten to one. There is a shortage of trained technicians in Paraguay, and this increases their value. At the same time, however, a good proportion of those with technical training emigrate to Argentina, where the economic rewards are higher. To the extent that their training is subsidized by the government, the GOP is subsidizing the development of Argentina. Planning

must, consequently, include a serious study of the system of incentives, and whether a realignment of those incentives may increase the external efficiency of vocational education. No such provision is found in the Paraguayan plan.

- f. High costs: the unit costs, as well as the absolute costs, involved in the design and execution of vocational education are high; higher, at any rate, than the costs of regular education. The necessary machinery and equipment invariably puts a premium on costs. The generally low participation in vocational education determines a high level of unit costs as does the under-utilization of installed capacity. This means that additional effort is required to make vocational education internally efficient, particularly in view of the fact that the opportunities for achieving economies of scale or generalizing the experiences are limited. Cost simulation exercises can aid this effort. Currently there is no such information available; nor is there any information on the costs associated with program expansion in Paraguay.

ANNEX G

EDUCATIONAL INFRASTRUCTURE IN AGRICULTURE

There exists in Paraguay an infrastructure for the delivery of agricultural education, with services ranging from vocational instruction to agricultural extension, research, and experimentation. An additional characteristic, not uncommon in Latin America, is that the infrastructure is highly autonomous from the MOE; and it is disaggregated, consisting of individual units of educational production rather than constituting a system in itself.

This lack of coordination with the formal education system has advantages and disadvantages. The advantages result from the fact that the MOE has a limited capability to meet the different and specialized educational needs to which the agricultural institutions address themselves. Autonomy allows unrestrained operation and leaves ample room for adapting approaches to specific circumstances, agricultural areas, and population groups.

The price paid for autonomy is the existence of information voids, limiting the potential benefits which might result from meaningful coordination. The availability of information can result in avoidance of duplication and overlapping of effort. This can include such mundane accomplishments as sharing of facilities, for instance. Joint program planning can also enable the agricultural educational institutions to provide specific information on user profiles and needs assessments, leaving the components of formal education to provide the necessary inputs for delivery, including the use of specific didactic approaches.

In terms of the linkage between institutions of agricultural education and the formal system, development planning requires: (a) a vision of education that transcends the conventional parameters of formal education, taking into account the population groups who should benefit and the range and content of specific educational services; and (b) identification of educational inputs through a "backward linkage" method which relates educational needs to the implementation of overall development policies.

A. FORMAL EDUCATION IN AGRICULTURE

1. The Regional Agricultural Education Centers

The limited effectiveness and decreased impact that may result from dispersion of effort is exemplified by the existing situation within the system of the Regional Agricultural Education Centers (CREA's). Four such schools exist, at Villarrica, Caazapá, Concepción, and San Juan Bautista; all are managed by the Ministry of Agriculture (MAG). They were founded in the 1930's and with the exception of the one in Villarrica, each has produced fewer than 400 students during the past 40 years. In 1971, as part of an IDB loan to the Integrated Project for Agriculture

and Livestock Development (PIDAP), the CREA's received \$1.94 million to be used for construction, maintenance, equipment, materials, and initial operational costs. These funds were complemented by \$1.23 million provided by the GOP.

An evaluation conducted in 1973 by a team of USAID consultants revealed a series of fundamental problems which seriously constrain the performance and effectiveness of these institutions.^{1/} The following problem areas were identified:

- Physical isolation of the schools. Site selection criteria were based on land availability, for the convenience of the school, with no attention given to the possible benefits arising from interaction between the school and the community.
- Isolation of students, as the schools are residential. This limits their impact on the students' families and communities, and also constrains the possible range of experiences they may themselves require on the farm.
- Very high costs and low social and private returns. Individual demand is depressed by the fact that the schools offer a terminal program of studies and require the free labor of the students while they are in residence.

The schools are constrained by their isolation from the MOE in terms of formal education, an area which the MOE is best equipped to handle. This disadvantage is reflected in the curriculum and content of courses, which add agricultural specialization to the common core curriculum of the secondary level. Again, the 1973 evaluation report noted that the periods of instruction, which range from 50 to 60 per week, make the study load quite heavy, particularly in comparison to the regular secondary track. More recent evidence has not contradicted this finding. It is also reported that the schools offer a level of specialization which may not be directly transferable to the realities of the Paraguayan situation. The skills offered are narrow in scope, and they depend to a large extent on the use of technologies which are not readily available in the rural areas.

To summarize, it appears that the following are important constraints which limit the effectiveness and impact of the vocational training offered by these schools.

- The lack of coordination between the MOE and the MAG.
- The physical and professional isolation of the schools, the absence of outreach to the community, the disincentives to the participants, and the limited range of skills as well as the specialized technological base.

^{1/} Thomas Letts and A. Cruz-Gonzales, Agricultural Education for the Rural Schools and Communities of Paraguay, Asunción, October 1973.

2. Other Formal Training: Secondary and University Levels

As described in Annex C, a number of institutions offer educational services which are geared to agriculture specifically, or to the rural sector generally. While classified earlier as non-formal activities, some of the programs are "hybrid," in that they offer services which use formal delivery approaches. Lessons are organized in specific sequences to cover areas and materials that either require previous formal training or result in the granting of degrees and certificates. At the same time, recourse is taken to evaluation procedures that are normally associated with the formal system.

Included in this group is the Carlos Pfannl Agricultural School in Coronel Oviedo, which is run by the Salesian fathers. The school offers the agricultural track of the Diversified Cycle to approximately 120 students; it has 3,000 hectares which are used for demonstration and experimentation. It is funded by the GOP and receives periodic support from the German government. The facilities and programs are considered to be the most complete and thorough of those institutions which train middle-level agricultural technicians, and those bound for higher education. It is the only school which is entitled to grant the Bachiller Agrónomo and Técnico Agrónomo degrees.

Another institution of this type is the San Benito Agricultural School at Pastoreo, which offers the Basic Cycle to some 100 regular students. The school also has 40 students taking a two-year course in cooperative management, and 70 primary-level female students taking home economics. Support comes largely from the German and Swiss governments, as well as from the Divine Word religious order, which furnishes agricultural instruction.

The scale of operations of these institutions, as well as of the CREA's, demonstrates that the more specialized requirements of agrarian development are not being met. The MOE has plans to incorporate the bachillerato agrónomico into the Diversified Cycle; but, as shown elsewhere, this is an intention rather than a reality. For all practical purposes, the technical study of agriculture is still a residual area in Paraguayan education.

This observation has implications which relate to higher education. The Faculty of Agronomy (FIA) and the Faculty of Veterinary Sciences (FV) at UNA, where some 650 students were enrolled in 1975, constitute one of the more academically sound units at the University.^{1/} Both faculties

^{1/} USAID/Paraguay, Small Farmer Sub-sector Assessment and Constraint Analysis, Asunción, 1976.

have undergone major revisions in curricula, and are now offering more specialized and advanced courses.^{1/} The schools have the largest number of full-time professors (20) as well as numerous half-time faculty members (23) and part-time instructors (71). Eighteen professors have had advanced training, including two who hold the Ph.D. degree.

The qualifications of university graduates allow them many opportunities for remunerative employment. The majority are employed by public sector institutions such as MAG, the Development Bank (BNF), the Livestock Fund, and SENALFA. Of those who enter the private sector, a fair proportion become self-employed or involved with agri-business.

Quality of training and the existence of employment prospects, therefore, accrue to those students enrolled in this track. At the same time, as the small farmer sub-sector assessment notes, the urban orientation of graduates remains a significant problem insofar as it entails lack of familiarity with rural areas. This is another way of saying that the schools produce technicians who understand agricultural processes and livestock raising techniques, but who have a limited understanding of how higher agricultural productivity relates to the larger issue of rural development. Ideally, the costs of creating an elite group of individuals should be compensated by providing at least some of them with an understanding of the complex tasks of rural social engineering. The fulfillment of this objective requires understanding of the linkages that exist among such components as land reform, colonization, transportation, credit, marketing, cooperatives, and education.

B. NON-FORMAL MODES: EXTENSION AND COMMUNITY-BASED LEARNING

Formal education only partially covers the potential educational needs in rural areas. In an analysis of rural education, observation should be made of knowledge and skills needed, including existing demand and available educational opportunities; geographic and demographic characteristics of the actual and potential user population; and impact of education on the economic, social, and cultural levels of the users.

^{1/} The small farmer assessment reports that the curriculum reform essentially introduced a greater degree of specialization in the school of agronomy, while a sixth year was added to veterinary science. Agronomy students elect a field of concentration in their fifth year of study; current offerings include animal science, forestry, crop production, agricultural engineering, and agricultural economics. While students do not graduate as specialists, they do emerge as technicians who can either pursue careers or advanced training in their particular field. For veterinary studies, the sixth year allows more comprehensive study of natural science, pasture and forage crop production, socio-economics, and basic animal science.

It is not expected that educational services can be delivered through the formal system to meet the entire range of these needs. Non-formal approaches are adopted precisely to fulfill some of the felt needs, and they originate in the public sector as well as from the communities. Still, the additional education supply obtained through those approaches has a distribution pattern which is consistent with the allocation of economic and political power in society. NFE activities and informal learning stimuli are therefore more abundant in those areas and groups which are already favored.

Viewed in this light, the current situation in Paraguay can be characterized as a transitional stage which hopefully will precede meaningful action. It has been recognized that there are unmet educational needs, that these needs are of a highly variable nature, that they require a joint programming effort, and that a number of initiatives have already been taken. At the same time, resources are limited and managerial and organizational expertise is at least equally inadequate.

The third World Bank project is seeking to reinforce the learning base at the community level.^{1/} The central focus entails the creation of Rural Community Learning Centers (RCLC's), which are designed to function as regular schools and as community centers for educational participation. The centers, therefore, are expected to create an educational potential in community nuclei with approximately 6,000 people, who are judged to be disadvantaged in terms of income levels and provision of educational facilities.^{2/} The programs offered in the centers include regular and accelerated primary education, functional literacy, non-formal activities, and teacher in-service training. The Regional Education Centers (REC's) also have a number of community outreach programs. The size and scope of these activities are still limited, but a potential for more systematic involvement is being generated and could be specified in future foreign assistance projects.

The range of possible community education activities is practically inexhaustible. If parameters were set, they could range from strictly educational ventures (e.g., literacy training) to community development

^{1/} See Annex A.

^{2/} The criteria utilized for community selection include: (a) a higher ratio between rural population and fourth-grade enrollment; (b) the existence of, or plans for, rural development programs; (c) a higher proportion of small-scale farmers who own their land; (d) a higher proportion of subsistence and annual crop cultivation as opposed to large-scale farming of cash crops; and (e) the results of a preliminary school survey made by teaching staff and supervisors. The project will be located in the Departments of Canendiyú, Amambay, Itapuá, San Pedro, and Concepción. See International Bank for Reconstruction and Development, Staff Project Report, Third Education Project (Paraguay), November 1976.

strategies which originate from national policy guidelines and trace back the implied learning requirements. The development of feeder roads, for instance, strengthens the possibility for communication between different communities. This in turn opens up new economic opportunities, which necessitate more complex patterns of interaction among different groups if they are to improve or optimize their benefits. These processes of adjustment, in response to constantly changing situations, entail the fulfillment of learning needs. It is at this point that a community-based facilitating structure for learning and communication exchange can play a central role in promoting development.

Rural development necessitates the steady improvement of agricultural productivity, to achieve greater efficiency in production and ultimately to expand the national economy. Technical assistance in agriculture is provided through the extension services of SEAG (Servicio de Extensión Agrícola y Ganadera),^{1/} which directs its efforts to farmers who are dynamic and enterprise-oriented. This group, consisting of 7,000 of an estimated 141,000 small farmers in eastern Paraguay, exhibits the following characteristics: (a) users of the extension service tend to be 35 years old or under; (b) they own or operate small farms, purchase more production inputs, and readily adopt agricultural innovations; (c) they belong to voluntary associations; and (d) they receive credit more frequently, and participate in technical assistance programs.^{2/}

Extension agents provide technical assistance in a variety of areas, including soil conservation and fertility recuperation of the soil, use of farm equipment, use of high yield varieties, utilization of high quality seeds, planting practices and use of fertilizers, sanitation, harvesting, and marketing. Services are offered largely on a group basis to producer cooperatives and committees. There are 68 4-H clubs which are also supervised by extension agents. A regular feature of these clubs, which reach 1,400 young people, is that they provide motivation in such areas as production techniques, credit management, use of farm implements, and leadership training. SEAG's home extension agents work through 103 home economics clubs with some 2,400 wives and daughters. The purpose of these associations is to promote health and nutrition practices.

^{1/} SEAG was established in January 1975 and operated from 1952 to 1967 under the domain of the Servicio Técnico Interamericano de Cooperación Agrícola (STICA). In 1967 it became the education arm of the Ministry of Agriculture. Currently, SEAG has an estimated 182 technicians doing extension work, including 12 area supervisors, 115 extension agents, 18 youth agents, and 37 home agents who work with the women of farming communities in nutrition, health, and home economics. See Small Farmer Sub-sector Assessment, op. cit.

^{2/} Small Farmer Sub-sector Assessment, op. cit.

The Small Farmer Sub-sector Assessment notes that currently a consortium approach to extension is being adopted. A number of participating public and private agencies provide SEAG with technicians, information, supplies, demonstration materials, and production technologies, to extend the reach of extension services in the rural areas and to promote specific products. Extension agents are the catalysts for action in this scheme, since they set up and organize the groups and arrange meetings. This, not only extends SEAG's outreach, but also optimizes the utilization of available resources through complementation and specialization.

C. RESEARCH AND EXPERIMENTATION IN AGRICULTURE AND LIVESTOCK PRODUCTION

To the extent that research entails the generation of knowledge, it is a specialized form of education. Under ideal conditions, research should provide the needed information inputs which condition practice and execution. Also ideally, the research effort should not be limited only to the narrow topics of obtaining better crops, varieties, and animal species. Rather, this effort should be an integral part of a larger research program which links different elements of the rural setting in a comprehensive framework of overall development. By extending the research effort in this manner, it is possible to obtain a greater sum of total benefits; at the same time, the benefits may be extended to groups which are currently marginal. Also, the application of research results, particularly when these are of a practical nature, requires understanding of the intended users and the particular circumstances where those results will be applied.

At the present time, there exists in Paraguay a network of institutions which provide highly specialized research and experimentation services. These research organizations, however, are institutionally isolated from those other research components which are mainly concerned with clarifying the social, economic, and cultural nature of rural development. Partly because of the nature of the work involved, the institutional compartmentalization, a limited understanding of other ongoing work, and different levels of professional and institutional capabilities, the Paraguayan situation is characterized by the features depicted above. As expected, this situation limits the overall impact of research and development.

The research effort is regulated and largely carried out by the MAG's Directorate of Agricultural Research and Extension and the Faculties of Agronomy and Veterinary Sciences at UNA.^{1/} At the Directorate, the work is carried out in the Departments of Agricultural Research, National Program of Livestock Research and Extension, SEAG, Livestock Development, Poultry, Apiculture, and the National Seed Service. Research tasks are carried out at five experimental stations:

^{1/} The information used here is described in the Small Farmer Sub-sector Assessment, op. cit.

1. The Instituto Agronómico Nacional (IAN) was established in 1943 and is located in Caacupé, 48 km east of Asunción. IAN has been responsible for almost all major crop research; also, it has done work on variety determination, cultivation methods, agronomic practices, and the use of fertilizers. IAN has introduced forestry species; it also regularly tests, adapts, and releases improved crops and varieties. Currently, it works very closely with the Seed Service to generalize the spread of improved seeds.
2. The Centro Regional de Investigación Agrícola was established in 1952 at Capitan Miranda, 16 km northeast of Encarnación. It became functional only in 1970 through the help of PL 480 Title I funds. It currently carries out research programs on crops that are important in the departments of Itapuá, Alto Paraná, and Misiones, including soybeans, wheat, cotton, corn, and fruits and vegetables.
3. The Barrerito Experimental Station was also established in 1943, and is located in southeastern Paraguay. It is the main livestock research center for eastern Paraguay. To date, work has concentrated on artificial insemination, and insect and disease eradication. As a result of demonstration practices to ranchers, the station has been successful in spreading such beneficial practices as better water supply systems, higher quality pasture, improved breeding stock, and improved animal handling facilities such as corrals, cotes, and fences.
4. The Chaco Experimental Station, located on the Trans-Chaco highway in President Hayes Department, was established in 1969. The station carries out research relating to cattle and livestock; its existence is called for by the markedly different conditions of climate, soil, and vegetation which prevail in the Chaco.
5. The Artificial Insemination Center is located in San Lorenzo, outside of Asunción, and was established in 1954. In addition to providing information and carrying out experimentation on artificial insemination, the Center has undertaken research on range patterns, nutrition, and sanitation.

ANNEX H

HIGHER EDUCATION

There are two universities in Paraguay, both located in Asunción. The National University of Asunción (UNA) was founded in 1889 with the faculties of law and medicine, while the privately supported Catholic University was established in the 1960's. The mission of the two universities is quite different, although there is some overlap in certain programs. The Catholic University has emphasized the administrative sciences, while the National University is a comprehensive institution which offers preparation in a variety of professional areas. The Catholic University has established two other centers in the interior. UNA has established a Faculty of Agronomy in Pte. Stroessner, and studies are currently underway to determine the feasibility of establishing other schools in the interior.

A. ENROLLMENT

The enrollment of the Catholic University in 1976 was slightly over 5,385; and 264 graduates were reported.

The enrollment of the National University of Asunción is shown in Table H-1. Among the 15 faculties and institutes, there is a heavy concentration in economics, law, and the physical sciences. It is evident that enrollment is concentrated in the first two years. Few students in economics remain for the higher degrees of licenciado or doctorate in that field. The medical and dentistry faculties make a great effort to retain students through the necessary period to complete doctorates.

B. ADMISSIONS

The formulation of an admissions policy is one of the many problems facing the National University. With a steadily growing number of students graduating from secondary schools, there is pressure on the university to admit more students each year; and this is being taken into account in its planning. In 1959, an estimated 1,230 students graduated from secondary school; while in 1974, the figure was 6,200. This represents a five-fold increase in fifteen years.^{1/}

There is fierce competition for a limited number of spaces in many faculties. As a result, Paraguayan students attend universities in Brazil or Argentina, due to the difficulty of gaining admission to the universities in their own country. Most faculties limit the number of new places available; each applicant must pass a test given by that

^{1/} Ministerio de Educación y Culto, Investigación sobre Rendimiento del Sistema Educativo, Asunción, July 1976, p. 208.

TABLE H-1

NATIONAL UNIVERSITY OF ASUNCION, ENROLLMENTS BY FACULTY AND COURSE, 1975REPUBLIC OF PARAGUAY

FACULTY OR INSTITUTE	TOTAL	ENROLLMENT					
		COURSE					
		1	2	3	4	5	6
TOTAL =====	11,786	4,212	3,462	1,752	1,247	651	462
Economics	3,834	1,525	1,525	570	92	61	61
Law	2,162	845	379	192	448	153	145
Physics and Mathematics	1,191	298	504	146	92	63	88
Chemistry and Pharmacy	606	185	167	112	86	22	34
Philosophy	876	414	222	123	59	45	13
Medicine	532	161	76	96	105	42	52
Veterinary Medicine	391	144	75	53	69	50	-
Agronomy	387	132	102	60	52	41	-
Dentistry	214	49	46	43	40	36	-
Architecture	703	172	167	118	102	97	47
Basic Sciences	243	122	67	33	21	-	-
Library Sciences	29	7	16	6	-	-	-
I. Andres Barbero	203	49	50	42	48	14	-
I. Languages	76	30	26	20	-	-	-
Arts	339	79	40	138	33	27	22

faculty, although if the student fails the test once or even twice, he or she has an opportunity to take it again. As a result, some students gain admission one or two years after they first apply. The planned establishment of a new campus near Asunción will allow the university to expand its student places. Clearly, the development of a sound admissions policy, which is just but still selective, is a high priority item for the university.

C. TEACHING QUALITY

The improvement of teaching quality is another priority area. Ideally, faculty members should pursue three types of professional activities: teaching, research, and extension to the community. At the present time, only the first is possible, because professors' salaries are so low. They can only afford to teach two classes a week, as they must hold other jobs to supplement their income. This prevents students from having consultation with professors; it also reduces the scholarly activity necessary in a university, and to the intellectual life of a nation.

It is to be hoped that along with upgrading the quality of teacher preparation, Paraguay can find a way to increase professors' salaries, so that a greater involvement may be expected of them. Were the university faculties to be developed into centers of excellence, current needs for professional manpower might be more easily met, and the overall development objectives more effectively fulfilled.

For example, the National University has made efforts to improve its medical school. It has been recognized that since many of its graduates leave the country,^{1/} Paraguay does not benefit from what would otherwise be the undeniable return to the nation of well-educated doctors, in the form of a more healthy population.

The National University also intends to move into the training of educational administrators and supervisors. This is commendable, even if ISE continues to expand its programs in the preparation of educational administrators. Eventually, every principal and supervisor, and most Ministry officials, should receive some training in educational administration. The UNA and ISE may wish to collaborate to determine how much training each institution will offer in the preparation and in-service training of educational administrators and supervisors. There is room for both institutions, each offering different kinds of training. With its broad humanities and social science base, the university can provide an excellent series of experiences related to administration as a science. With its mission of teacher training, ISE can offer resources for training administrators and supervisors in the educational sciences, along with practical administration. Cooperation between the institutions is necessary as new programs are initiated, if efficiency is to be achieved.

^{1/} Graziela Corvalán, "La Emigración de Profesionales Paraguayos," Revista Paraguaya de Sociología, Centro Paraguayo de Estudios Sociológicos, 1974, pp. 91-120.

D. BUDGETS

The budget for the UNA in 1976 was ₡s 508,585 million, up from ₡s 414,350 million in 1975, representing a 22.7 percent increase. In addition, ₡s 5.12 million went to UNA for central administrative expenses.^{1/} The Catholic University also received ₡s 1.5 million each year. On the average, the operating budget is about ₡s 44,174 per student, or slightly over \$350.

^{1/} Ministerio de Hacienda, Dirección General de Presupuesto, Presupuesto General de la Nación, Administración Central, Asunción, Ejercicio Fiscal 1976, p. 214.

ANNEX I

EDUCATIONAL AND VOCATIONAL GUIDANCE

The Department of Guidance within the Ministry of Education is responsible for providing counseling and guidance services to primary and secondary schools, both public and private. This is to be accomplished through individual and group guidance; examination and adjustment of the learning process; and orientation and training of teachers, parents, and other community members in the dynamics of education and the related role of guidance.^{1/} The guidance services were established by executive decree in 1970.

A. THE CURRENT SITUATION

In 1974 there were 10 guidance counselors for all primary schools in the country; some 14,600 students, or 3 percent of the primary enrollment, received assistance. In the same year, 20 guidance counselors provided services to 10,026 secondary students, or 13 percent of the enrollment.

The Ministry of Education has a total of 18 professionals serving primary schools, and 29 serving secondary schools. Besides the 30 counselors, these include social workers, specialists in educational science and linguistic education, a school psychologist, and supervisors. Services were provided in a total of 48 primary and 19 secondary schools.

More attention is paid to secondary than to primary guidance services, because secondary students are more likely to be concerned about personal futures and possible careers. The effort that is directed to the primary level results from the fact that children develop learning problems in the early primary grades. The longer these remain untreated, the more severe the consequences for the child in later years. Recognizing and treating learning problems as soon as possible is of utmost importance if the child is to derive any advantage from schooling.

The Department of Guidance plans to give more emphasis to diagnosing the demands of the labor market, so that students can be better assisted in making sound personal decisions about choosing occupations. In order to accomplish this as well as the anticipated expansion of services, extensive resources will be necessary. Within existing financial constraints, alternatives must be considered, such as training teachers to diagnose learning difficulties before calling in a counselor to prescribe a course of action for the child or group.

^{1/} Ministry of Education, Desarrollo de la Educación - Segundo Proyecto MEC/BIRF, Tomo I, pp. III/k/1 - III/k/8.

ISE is now providing classes in specialization for counselors, to help meet the continuing need for more specialized guidance and counseling personnel. However, teachers must still be trained to recognize and diagnose learning problems as early in the child's development as possible. In this sense, each teacher becomes a counselor, and the work of the specialist becomes much more effective than when he or she is attempting to find and treat children with special learning problems. Teachers and specialists, working in teams, effectively complement each other's activities. An additional mechanism is the team teaching concept; within each group of teachers, at least one has some background in guidance. In such an organization, the counselor, or other specialist outside the school, works as consultant to the team, and is much more effective as a resource person than when he or she is going from classroom to classroom to call on individual teachers.

B. RECOMMENDATIONS

The following guidance services are recommended:

1. Exploration of new roles for specialists, such as organizing teaching teams in each school. With so few trained counselors available, their work is made more effective by working with groups or teams, rather than seeking out learning problems on a child-by-child basis.
2. Continuation of training for guidance and evaluation specialists at ISE. Particular needs include personnel skilled in the evaluation of education, improvement of testing procedures, and diagnosis of individuals and groups. Training in the use of appropriate data for making judgments about schools should be given high priority.

Once a sufficiently large number of people skilled in measurement and evaluation have been trained, the MOE can begin to observe and assess the effectiveness of its educational processes. Thus far, only student flow data are available. While these are essential in making conclusions about the effectiveness of the system, greater attention should be paid to the system's impact on the learning behavior of each student. This information can then be used to make judgments about such problems as why certain students drop out earlier than others.

Qualitative information about a system is necessary in order to determine the effects of the system on participants. Such data include information on achievement, language habits, mental abilities, attitudes toward school and learning, aspirations for the future, learning habits in the home and at school, perceptions of educational attainment held by parents and peers, and socialization patterns.

Students who have completed various kinds of courses should be followed up to see whether they succeeded in their chosen careers, or whether they had to go into another kind of career for which they were not prepared. It appears that most secondary students are planning to enter a profession through university training. Since so few spaces are available in the universities, it is important to see where these individuals actually go when they complete secondary school.

The effectiveness of guidance given to students depends upon the perceptions of jobs and educational attainment held by parents, teachers, administrators, employees, and peers. If preparation for a technical position is seen by most people to be degrading or inferior, (as compared to preparation for university), then counselors must overcome deeply ingrained social attitudes. School personnel should be encouraged to change their traditional attitude that technical work is low-prestige activity. It may in fact be more demanding and satisfying intellectually, and more remunerative, than many kinds of positions for which one is trained in a university. Creating new attitudes toward middle-level occupations is perhaps the greatest service vocational guidance personnel can perform. Written materials, radio, television, and advertising with posters and photos should be used to convince students that economic growth and prosperity require a variety of occupations that can be rewarding, both intellectually and monetarily.

STATISTICAL ANNEX

A-77

TABLE SA-1

POPULATION DATA FOR PARAGUAY
(figures in thousands)

TOTAL POPULATION OF PARAGUAY, 1975

AGE	URBAN AREA	RURAL AREA	ASUNCIÓN	OTHER URBAN AREAS
5	24.4	56.1	8.9	15.5
6	25.3	58.3	9.3	16.0
7	26.4	57.6	9.9	16.5
8	26.3	54.0	10.0	16.3
9	26.6	49.2	10.3	16.3
10	27.2	51.9	10.7	16.5
11	27.0	46.5	10.9	16.1
12	29.5	50.7	11.8	17.7
13	25.9	41.0	10.9	15.0
14	26.6	40.9	11.7	14.9
15	26.1	38.4	11.8	14.3
16	25.6	36.3	12.2	13.4
17	29.4	34.6	15.4	14.0
18	26.5	30.2	14.0	12.5
19	21.2	26.4	11.2	10.0
TOTAL	<u>1,005.3</u>	<u>1,641.6</u>	<u>452.4</u>	<u>552.9</u>

POPULATION PROJECTIONS, 1970-1980

YEAR	POPULATION		
	Total	Urban	Rural
1970	<u>2,031.1</u>	<u>852.1</u>	<u>1,449.0</u>
1971	2,364.8	880.1	1,484.7
1972	2,431.2	909.4	1,521.8
1973	2,500.3	940.0	1,560.3
1974	2,572.2	971.9	1,600.3
1975	<u>2,646.9</u>	<u>1,005.3</u>	<u>1,641.6</u>
1976	2,724.4	1,040.6	1,683.8
1977	2,804.7	1,077.3	1,727.4
1978	2,887.8	1,115.5	1,772.3
1979	2,973.5	1,155.0	1,818.5
1980	<u>3,061.8</u>	<u>1,195.9</u>	<u>1,855.9</u>

TABLE SA-2

SELECTED SOCIAL AND ECONOMIC INDICATORS FOR PARAGUAY, 1972

Characteristics	Paraguay Total	Rural	Urban
Persons per room	2.4	3.2	1.7
Rooms per house	5.4	5.7	5.0
% with indoor plumbing	25.5	6.0	53.0
% with electricity	11.0	.0	28.0
% with dirt floors	59.0	80.1	27.9
% with straw roof	51.0	71.5	20.8
Doctors per 10,000 pop.	4.58	1.2	2.1 (Asunción)
Graduate nurses	131.0	28.0	103.0 (Asunción)
Dentists	643.0	127.0	516.0
School attendance 7-14 years of age	83.1	79.0	90.9

Source: 1972 Census.

TABLE SA-3

ILITERACY RATES IN PARAGUAY

Sex	1962 Census			1972 Census		
	Urban	Rural	Total	Urban	Rural	Total
Male	9.2	24.7	19.0	7.4	19.9	15.0
Female	18.6	40.0	31.3	14.7	32.3	24.5
Total	14.4	32.5	25.4	11.4	26.0	20.2

Source: National Development Plan, Vol. I, p. 170.

TABLE SA-4

ENROLLMENT BY LEVEL, SECTOR, AND RURAL/URBAN AREAS, PARAGUAY, 1970 AND 1975

Enrollment	Primary Level	Secondary Basic Cycle	Secondary Diversified (%)	
			Humanities	Commercial
<u>1970</u>				
Urban Public	158,047	18,350	4,133	1,802
Urban Private	42,994	19,609	6,650	1,688
Rural Public	211,327	0	0	0
Rural Private	11,811	0	0	0
TOTAL	424,179	37,959	10,783	3,490
<u>1975</u>				
Urban Public	145,319	31,888	13,104	2,203
Urban Private	45,896	17,515	9,396	1,318
Rural Public	240,595	0	0	0
Rural Private	20,439	0	0	0
TOTAL	452,249	49,403	22,500	3,521

Source: Ministry of Education.

TABLE SA-5
CHARACTERISTICS OF THE SCHOOL SYSTEM IN PARAGUAY, BY DEPARTMENT AND LOCALITY, 1972

DEPARTMENT	POPULATION Age 7-14		ENROLLMENT		TEACHERS		SCHOOLS		TEACHER/SCHOOL		STUDENT/TEACHER		RURAL/URBAN ENROLLMENT
	U	R	U	R	U	R	U	R	U	R	U	R	
Asunción	74,112		66,143		2,299		155		14.8		28.8		
Concepción	7,836	18,530	7,378	11,946	234	361	20	122	11.7	2.9	31.5	33.1	1.6
San Pedro	5,304	27,882	7,108	18,656	222	581	21	181	10.6	3.2	32.0	32.1	2.6
Cordillera	8,712	37,321	15,104	27,561	474	837	42	189	11.3	4.4	31.9	32.9	1.8
Guairá	8,555	21,833	11,470	14,457	406	462	28	151	14.5	3.1	28.3	31.3	1.3
Caaguazú	8,150	42,563	11,126	28,531	288	788	23	225	12.5	3.5	38.6	36.2	2.6
Caazapá	3,850	22,820	6,197	15,904	181	452	17	134	10.6	3.4	34.2	35.2	2.6
Itapúa	10,522	38,147	11,738	27,119	400	874	44	282	9.1	3.1	29.3	31.0	2.3
Misiones	5,283	11,749	6,696	7,838	231	251	17	83	13.6	3.0	29.0	31.2	1.2
Paraguari	7,834	43,246	13,362	28,580	473	926	35	250	13.5	3.7	28.2	30.9	2.1
Alto Paraná	3,773	16,495	4,715	9,091	119	285	12	105	9.9	2.7	39.6	31.9	1.9
Central	29,762	39,291	25,193	35,863	812	1001	59	171	13.8	5.8	31.0	35.8	1.4
Neembucú	4,921	12,088	6,276	6,921	224	295	21	110	10.7	2.7	28.0	23.5	1.1
Amambay	5,996	9,305	4,302	4,627	115	153	8	63	14.4	2.4	37.4	30.2	1.1
Pte. Hayes	1,968	6,273	2,264	3,292	74	131	6	33	12.3	4.0	30.6	25.1	1.5
Boquerón	1,994	3,752	1,647	1,753	55	84	6	23	9.2	3.7	29.9	20.9	1.1
Olimpo	782	331	742	80	22	4	2	3	11.0	1.3	33.7	20.0	0.1

Source: MOE, Department of Planning.

TABLE SA-6
ENROLLMENT BY GRADE AND AGE, PARAGUAY, 1972

	-7	7	8	9	10	11	12	13	14	15+	TOTAL
1st	13,505	53,060	28,994	14,758	8,028	4,300	2,357	1,019	403	175	126,599
2nd	536	10,479	25,518	22,954	16,899	10,989	7,029	3,137	1,392	450	99,383
3rd	48	795	8,904	18,164	17,142	14,439	10,681	5,911	2,716	1,076	79,876
4th	-	11	703	6,959	12,980	13,304	12,022	7,815	4,189	1,750	59,733
5th	-	-	74	752	5,601	10,706	10,736	8,420	5,345	2,827	44,461
6th	-	-	-	27	640	5,074	9,065	7,907	6,205	4,710	33,628

URBAN AREAS

	-7	7	8	9	10	11	12	13	14	15+	TOTAL
1st	6,929	18,473	8,832	4,140	2,230	1,176	625	284	102	33	42,824
2nd	375	6,195	11,246	8,113	5,332	3,358	2,055	875	396	126	38,071
3rd	37	520	5,945	9,639	7,401	5,696	3,968	2,155	1,006	405	36,772
4th	-	6	561	4,991	8,009	6,796	5,668	3,675	1,895	802	32,403
5th	-	-	70	626	4,497	7,442	6,303	4,761	2,944	1,488	28,131
6th	-	-	-	25	562	4,181	6,727	5,113	3,869	2,783	23,260

RURAL AREAS

	-7	7	8	9	10	11	12	13	14	15+	TOTAL
1st	6,576	34,587	20,162	10,618	5,798	3,124	1,732	735	301	142	83,775
2nd	161	4,284	14,272	14,841	11,567	7,631	4,974	2,262	996	324	61,312
3rd	11	275	2,959	8,525	9,741	8,743	6,713	3,756	1,710	671	43,104
4th	-	5	142	1,902	4,971	6,508	6,354	4,140	2,294	948	27,330
5th	-	-	4	126	1,104	3,264	4,433	3,659	2,401	1,339	16,330
6th	-	-	-	2	78	893	2,338	2,794	2,336	1,927	10,368

Source: MDE, Department of Planning.

TABLE SA-7

PRIMARY EDUCATION ENROLLMENT, PARAGUAY, 1968-1975

Year \ Grade	TOTAL	1st	2nd	3rd	4th	5th	6th
1968	399,685	120,544	94,760	69,050	51,103	36,859	27,369
1969	409,524	119,784	94,320	72,767	53,250	38,819	29,582
1970	424,179	125,052	96,799	74,661	56,602	40,725	30,340
1971	436,857	126,034	99,585	77,467	58,009	43,397	32,365
1972	443,680	126,599	99,383	79,876	59,733	44,461	33,628
1973	451,530	126,077	100,796	80,675	62,147	46,789	35,046
1974	454,853	124,709	100,324	82,160	63,299	47,874	36,487
1975	452,249	121,736	99,139	81,889	63,763	48,283	37,439

A-83

Source: MDE, Department of Planning.

TABLE SA-8

PRIMARY EDUCATION URBAN ENROLLMENT, PARAGUAY, 1968-1975

Year \ Grade	TOTAL	1st	2nd	3rd	4th	5th	6th
1968	199,354	44,464	40,650	35,642	31,195	26,220	21,183
1969	200,823	43,434	39,293	37,219	31,784	26,909	22,184
1970	201,041	43,813	38,613	36,556	32,704	27,266	22,089
1971	202,592	42,961	39,055	36,753	32,490	28,289	23,044
1972	201,461	42,824	38,071	36,772	32,403	28,131	23,260
1973	196,667	40,943	36,611	35,459	32,148	28,232	23,274
1974	195,533	40,452	36,210	35,350	31,845	27,952	23,724
1975	191,215	38,607	35,592	34,399	31,456	27,508	23,653

A-84

Source: MOE, Department of Planning.

TABLE SA-9

PRIMARY EDUCATION RURAL ENROLLMENT, PARAGUAY, 1968-1975

Year \ Grade	TOTAL	1st	2nd	3rd	4th	5th	6th
1968	200,331	76,080	54,110	33,408	19,908	10,639	6,186
1969	207,701	76,350	55,027	35,550	21,466	11,910	7,398
1970	223,138	81,239	58,186	38,105	23,898	13,459	8,251
1971	234,265	83,073	60,530	40,714	25,519	15,108	9,321
1972	242,219	83,775	61,312	43,104	27,330	16,330	10,368
1973	254,863	85,134	64,185	45,216	29,999	18,557	11,772
1974	259,320	84,257	64,114	46,810	31,454	19,922	12,763
1975	261,034	83,129	63,547	47,490	32,307	20,775	13,786

Source: MDE, Department of Planning.

TABLE SA-10
NUMBER OF PRIMARY SCHOOLS, TEACHERS, AND STUDENTS, 1954-1974
REPUBLIC OF PARAGUAY

YEAR	SCHOOL			TEACHERS			STUDENTS		
	Number	Growth		Number	Growth		Number	Growth	
		Absol.	Relat.		Absol.	Relat.		Absol.	Relat.
1954	1,781	-	-	8,284	-	-	254,118	-	-
1955	1,910	129	7	9,111	827	10	267,643	13,525	5
1956	1,985	204	11	9,523	1,239	15	275,454	21,336	8
1957	2,040	250	15	9,927	1,643	20	287,049	32,931	13
1958	2,093	312	18	10,186	1,902	23	290,471	36,353	14
1959	2,122	341	19	10,441	2,157	26	296,539	42,421	17
1960	2,271	490	28	10,719	2,435	29	305,479	51,360	20
1961	2,371	536	30	10,988	2,704	33	311,833	57,715	23
1962	2,383	602	34	11,218	2,934	35	327,059	72,941	29
1963	2,501	720	40	12,358	4,070	49	334,638	80,520	32
1964	2,605	824	46	12,884	4,600	56	349,143	95,025	37
1965	2,662	881	49	13,239	4,955	60	362,261	108,143	43
1966	2,734	953	54	13,660	5,376	65	373,230	119,112	47
1967	2,745	964	54	13,677	5,393	65	385,075	130,957	52
1968	2,809	1,028	58	14,074	5,790	70	406,342	152,224	60
1969	2,896	1,115	63	14,327	6,043	73	415,791	161,673	64
1970	3,045	1,264	71	14,788	6,504	79	431,743	177,625	70
1971	3,200*	1,419	80	15,304	7,020	85	444,894	190,776	75
1972	3,283*	1,502	84	15,441	7,157	86	451,856	197,738	78
1973	3,366*	1,585	89	15,871	7,587	92	459,393	205,275	81
1974	3,440	1,668	94	16,401	8,117	98	462,534	208,386	82

- Continued -

TABLE SA-10
NUMBER OF PRIMARY SCHOOLS, TEACHERS, AND STUDENTS, 1954-1974
 (Continued)

GROWTH \ DETAIL	SCHOOLS	TEACHERS	STUDENTS
Total Growth	2,168	8,117	208,386
Average Annual Growth	108.4	406	10,419

*Estimates

Source: MDE, Desarrollo Educativo En Cifras, p. 32.

TABLE SA-11
TEACHING POSITIONS IN PRIMARY EDUCATION BY CATEGORY AND
LOCATION IN RURAL OR URBAN AREAS, PARAGUAY, 1968-1975

YEAR/AREA \ GRADE	TOTAL	1st	2nd	3rd	4th	5th	6th	7th
1968								
Total	12,722	8,569	153	810	1,332	306	299	1,253
Urban	6,604	5,562	118	482	253	52	35	102
Rural	6,118	3,007	35	328	1,079	254	264	1,151
1969								
Total	12,951	9,216	151	710	1,198	238	255	1,183
Urban	6,612	5,743	108	400	213	35	31	82
Rural	6,339	3,473	43	310	985	203	224	1,101
1970								
Total	13,392	9,866	122	622	1,074	222	227	1,259
Urban	6,569	5,852	91	324	176	19	28	79
Rural	6,823	4,014	31	298	898	203	199	1,180
1971								
Total	13,872	10,541	130	535	951	202	190	1,333
Urban	6,647	6,007	101	283	158	17	22	59
Rural	7,225	4,534	29	252	793	185	158	1,274
1972								
Total	14,114	11,142	88	475	804	174	167	1,264
Urban	6,629	6,077	68	254	126	14	19	71
Rural	7,485	5,065	20	221	678	160	148	1,193
1973								
Total	14,506	11,716	73	408	711	171	139	1,288
Urban	6,616	6,151	55	219	114	11	11	55
Rural	7,890	5,565	18	189	597	160	128	1,233
1974								
Total	14,945	12,051	69	362	652	159	450	1,202
Urban	6,669	6,258	44	183	102	11	20	51
Rural	8,276	5,793	25	179	550	148	430	1,151
1975								
Total	15,398	12,309	63	355	664	148	1,479	380
Urban	6,702	6,324	36	174	86	11	56	15
Rural	8,696	5,985	27	181	578	137	1,423	365

Source: MDE, Department of Planning.

TABLE SA-12
NUMBER OF PRIMARY SCHOOL TEACHING POSITIONS BY CATEGORY,
DEPARTMENT, AND URBAN/RURAL AREA, 1975

REPUBLIC OF PARAGUAY

DEPARTMENT AND ZONE	TEACHING POSITIONS							
	TOTAL	Category						
		1st	2nd	3rd	4th	5th	6th	7th
TOTAL:	15,398	12,309	63	355	664	148	1,479	380
Urban	6,702	6,324	36	174	86	11	56	15
Rural	8,696	5,985	27	181	578	137	1,423	365
Asunción	2,373	2,320	10	37	1	-	-	5
Urban	2,373	2,320	10	37	1	-	-	5
Rural	-	-	-	-	-	-	-	-
Concepción	659	412	6	9	39	10	169	14
Urban	229	218	-	4	4	2	-	1
Rural	430	194	6	5	35	8	169	13
San Pedro	904	418	2	17	59	14	243	151
Urban	220	190	-	4	12	-	12	2
Rural	684	228	2	13	47	14	231	149
Cordillera	1,353	1,214	2	31	44	15	29	18
Urban	485	455	2	17	7	2	-	2
Rural	868	759	-	14	37	13	29	16
Guairá	879	685	4	19	67	18	72	14
Urban	370	341	2	12	13	-	2	-
Rural	509	344	2	7	54	18	70	14
Caaguazú	1,259	876	-	20	73	23	247	20
Urban	308	298	-	5	2	2	1	-
Rural	951	578	-	15	71	21	246	20
Caazapa	704	508	3	15	66	18	85	9
Urban	183	160	3	8	9	-	3	-
Rural	521	348	-	7	57	18	82	9
Itapúa	1,439	1,051	18	48	94	4	209	15
Urban	397	371	6	15	2	-	2	1
Rural	1,042	680	12	33	92	4	207	14
Misiones	499	465	-	8	3	2	19	2
Urban	229	224	-	5	-	-	-	-
Rural	270	241	-	3	3	2	19	2

-Continued-

TABLE SA-12

NUMBER OF PRIMARY SCHOOL TEACHING POSITIONS BY CATEGORY,
DEPARTMENT, AND URBAN/RURAL AREA, 1975

(Continued)

DEPARTMENT AND ZONE	TEACHING POSITIONS							
	TOTAL	Category						
		1st	2nd	3rd	4th	5th	6th	7th
Paraguari	1,553	1,297	2	41	85	24	51	53
Urban	467	438	2	17	8	2	-	-
Rural	1,086	859	-	24	77	22	51	53
Alto Paraná	500	371	-	4	16	2	99	8
Urban	149	138	-	1	-	-	10	-
Rural	351	233	-	3	16	2	89	8
Central	1,864	1,744	11	43	47	8	7	4
Urban	764	719	7	23	11	2	2	-
Rural	1,100	1,025	4	20	36	6	5	4
Neembucú	547	386	2	31	31	2	65	29
Urban	233	207	1	17	6	1	1	-
Rural	314	179	1	14	25	1	65	29
Amambay	316	216	-	6	5	-	64	25
Urban	129	123	-	2	1	-	2	1
Rural	187	93	-	4	4	-	62	24
Canendiyú	102	63	-	8	8	-	23	-
Urban	14	5	-	-	2	-	7	-
Rural	88	58	-	8	6	-	16	-
Pte. Hayes	275	198	-	12	19	6	37	3
Urban	80	58	-	3	7	-	12	-
Rural	195	140	-	9	12	6	25	3
Alto Paraguay	151	72	3	6	7	2	54	7
Urban	57	48	3	4	1	-	1	-
Rural	94	24	-	2	6	2	53	7
Chaco	-	-	-	-	-	-	-	-
Urban	-	-	-	-	-	-	-	-
Rural	-	-	-	-	-	-	-	-
Nueva Asunción	-	-	-	-	-	-	-	-
Urban	-	-	-	-	-	-	-	-
Rural	-	-	-	-	-	-	-	-
Boquerón	21	13	-	-	-	-	5	3
Urban	15	11	-	-	-	-	1	3
Rural	6	2	-	-	-	-	4	-

TABLE SA-13

RETENTION RATES IN PRIMARY EDUCATION, BY RURAL/URBAN AREA AND SECTOR, 1970-1975REPUBLIC OF PARAGUAY

YEAR	RETENTION IN THE ZONE				
	Grade	Urban		Rural	
		Students	%	Students	%
1970	1st	43,813	-	81,239	-
1971	2nd	39,055	89	60,530	75
1972	3rd	36,772	84	43,104	53
1973	4th	32,148	73	29,999	37
1974	5th	27,952	64	19,922	25
1975	6th	23,653	54	13,786	17

YEAR	RETENTION IN THE SECTOR				
	Grade	Urban		Rural	
		Students	%	Students	%
1970	1st	110,559	-	14,493	-
1971	2nd	87,660	79	11,925	82
1972	3rd	69,919	63	9,957	69
1973	4th	53,714	49	8,433	58
1974	5th	40,427	37	7,447	51
1975	6th	30,838	28	6,601	46

Source: MOE, Anuario 1975, p. 34.

TABLE SA-14

NUMBERS OF PRIMARY STUDENTS TAKING FINAL EXAMINATIONS, BY GRADE
REPUBLIC OF PARAGUAY, 1968-1975

Year	Grade	1st	2nd	3rd	4th	5th	6th
1968	E	102,689	84,380	62,241	46,032	33,737	25,443
	P	72,066	61,886	47,720	36,109	27,460	22,615
1969	E	102,746	84,090	65,631	47,957	35,104	26,845
	P	71,348	61,090	49,913	37,616	28,174	23,733
1970	E	107,831	87,543	67,813	51,502	37,234	28,097
	P	75,252	64,130	51,487	40,180	29,991	24,890
1971	E	109,636	90,634	69,857	52,785	39,684	29,663
	P	76,400	67,221	52,965	41,338	31,906	26,328
1972	E	110,784	90,046	72,781	54,735	40,550	31,301
	P	77,169	66,487	55,295	42,870	32,722	27,674
1973	E	110,268	91,517	73,356	56,988	42,926	32,759
	P	77,844	68,295	56,419	45,045	35,228	29,414
1974	E	106,812	89,808	74,376	57,703	43,981	33,936
	P	78,111	68,992	58,266	46,411	36,589	30,923
1975	E	107,039	90,239	75,291	58,693	44,967	35,063
	P	77,981	69,215	58,824	47,583	37,328	32,056

Source: MOE, Department of Planning.

E: Examinados (number who took final exam)

P: Promovidos (number who passed final exam)

TABLE SA-15
NUMBERS OF URBAN PRIMARY STUDENTS TAKING FINAL EXAMINATIONS, BY GRADE
REPUBLIC OF PARAGUAY, 1968-1975

Year \ Grade	1st	2nd	3rd	4th	5th	6th	
1968	E	38,120	36,945	32,270	28,300	24,046	19,883
	P	28,488	28,118	25,153	22,443	19,499	17,667
1969	E	37,483	35,230	33,927	28,630	24,324	20,161
	P	27,964	26,973	26,142	22,700	19,599	17,762
1970	E	38,593	35,449	33,606	30,036	25,059	20,600
	P	28,784	27,287	26,076	23,711	20,132	18,139
1971	E	37,778	35,860	33,355	29,924	25,925	21,282
	P	27,885	27,474	25,741	23,392	20,702	18,818
1972	E	37,120	34,370	33,307	29,250	25,480	21,526
	P	27,403	26,280	25,651	23,318	20,594	19,000
1973	E	36,770	34,139	32,752	29,767	26,152	22,005
	P	27,641	26,581	25,711	23,750	21,265	19,656
1974	E	35,474	33,234	32,645	29,417	25,865	22,255
	P	27,916	26,559	26,103	23,790	21,599	20,214
1975	E	34,564	32,910	32,032	29,259	25,680	22,348
	P	27,002	26,703	25,766	24,177	21,415	20,345

Source: MOE, Department of Planning

E: Examinados (number who took final exam)

P: Promovidos (number who passed final exam)

TABLE SA-16

RETENTION RATES IN PRIMARY EDUCATION, PARAGUAY, 1960-1974

YEARS	ENROLLMENT		RETENTION %
	1st Grade	6th Grade	
1960 - 1965	115,923	21,313	18.4
1961 - 1966	112,972	22,517	19.9
1962 - 1967	116,101	24,227	20.9
1963 - 1968	116,851	27,369	23.4
1964 - 1969	117,344	29,582	25.2
1965 - 1970	118,822	30,340	25.5
1966 - 1971	119,531	32,365	27.1
1967 - 1972	120,810	33,611	27.8
1968 - 1973	120,544	35,046	29.1
1969 - 1974	119,784	36,487	30.5

SCHOOL YEARS: 1960-1965 TO 1969-1974

YEARS	ENROLLMENT	FINISHED	YIELD %
	1st Grade	6th Grade	
1960 - 1965	115,923	17,272	14.9
1961 - 1966	112,972	17,550	15.5
1962 - 1967	116,101	21,056	18.1
1963 - 1968	116,851	23,524	20.1
1964 - 1969	117,344	24,844	21.2
1965 - 1970	118,822	25,825	21.7
1966 - 1971	119,531	27,338	22.9
1967 - 1972	120,810	28,710	23.8
1968 - 1973	120,544	30,368	25.2
1969 - 1974	119,784	31,738*	26.5

*Includes those finishing final exams and complementary exams.

Source: MOE, Desarrollo Educativo En Cifras, p. 48.

TABLE SA-17
NUMBER OF PRIMARY SCHOOLS BY HIGHEST GRADE OFFERED, RURAL/URBAN AREAS, PARAGUAY, 1971-1975

GRADE	1971		1972		1973		1974		1975	
	URBAN	RURAL								
TOTAL	<u>523</u>	<u>2,068</u>	<u>516</u>	<u>2,125</u>	<u>524</u>	<u>2,135</u>	<u>534</u>	<u>2,205</u>	<u>529</u>	<u>2,270</u>
1st	2	93	3	92	4	81	6	67	4	73
2nd	8	449	7	413	8	377	9	367	9	332
3rd	5	445	7	444	13	459	15	449	9	446
4th	7	335	12	354	3	326	13	378	6	395
5th	8	221	14	229	8	228	11	230	6	218
6th	493	525	473	593	488	664	480	714	495	806

Source: MOE, Department of Planning.

TABLE SA-18

NUMBER OF PRIMARY SCHOOLS BY DEPARTMENT, SECTOR, AND RURAL/URBAN AREA, 1975
REPUBLIC OF PARAGUAY

DEPARTMENT	NUMBER OF PRIMARY SCHOOLS*								
	TOTAL			Sector and Zone					
				Public			Private		
	Total	Urban	Rural	Total	Urban	Rural	Total	Urban	Rural
TOTAL	2,799	529	2,270	2,334	350	1,984	465	179	286
Asunción	160	160	-	73	73	-	87	87	-
Concepción	150	22	128	132	17	115	18	5	13
San Pedro	239	20	219	186	17	169	53	3	50
Cordillera	224	41	183	210	30	180	14	11	3
Guairá	186	31	155	167	24	143	19	7	12
Caaguazú	275	20	255	205	17	188	70	3	67
Caazapá	164	17	147	153	13	140	11	4	7
Itapúa	360	42	318	294	32	262	66	10	56
Misiones	107	17	90	103	14	89	4	3	1
Paraguarí	297	38	259	287	31	256	10	7	3
Alto Paraná	123	13	110	82	8	74	41	5	36
Central	218	56	162	193	37	156	25	19	6
Ñeembucú	136	22	114	124	18	106	12	4	8
Amambay	64	8	56	52	6	46	12	2	10
Canendiyú	30	4	26	25	4	21	5	-	5
Pte. Hayes	44	9	35	30	2	28	14	7	7
Alto Paraguay	17	7	10	15	6	9	2	1	1
Chaco	-	-	-	-	-	-	-	-	-
Nueva Asunción	-	-	-	-	-	-	-	-	-
Boquerón	5	2	3	3	1	2	2	1	1

* Includes Regional Education Centers.

Source: MDE, Anuario 1975, p. 47.

TABLE SA-19

NUMBER OF PRIMARY SCHOOL PUPILS PER CLASS BY DEPARTMENT AND GRADE LEVEL, 1975
REPUBLIC OF PARAGUAY

DEPARTMENT	AVERAGE STUDENTS PER CLASS							
	GRADE LEVEL							
	TOTAL	PRE-SCHOOL	1st	2nd	3rd	4th	5th	6th
TOTAL:	26	24	32	27	26	24	23	21
Asunción	27	24	31	29	28	27	27	26
Concepción	28	33	32	27	26	22	23	23
San Pedro	25	-	31	27	24	23	20	19
Cordillera	28	29	32	29	29	27	25	23
Guairá	27	30	32	28	26	24	22	19
Caaguazú	31	1	38	32	30	27	29	24
Caazapá	30	23	36	32	31	27	25	20
Itapúa	23	23	29	24	20	20	19	17
Misiones	24	29	29	24	23	22	20	20
Paraguarí	25	27	30	26	26	23	20	18
Alto Paraná	28	21	37	27	21	25	26	22
Central	30	29	35	31	31	29	27	24
Neembucú	19	26	22	20	17	17	16	15
Anambay	25	33	34	26	22	20	20	18
Canendiyú	26	-	42	31	21	17	12	16
Pte. Hayes	20	28	27	22	20	17	15	13
Alto Paraguay	17	18	19	18	16	17	13	13
Chaco	-	-	-	-	-	-	-	-
Nueva Asunción	-	-	-	-	-	-	-	-
Boquerón	15	12	23	17	10	9	17	11

Source: MOE, Anuario 1975, p. 49.

TABLE SA-20
DISTRIBUTION OF PRIMARY SCHOOL ENROLLMENT BY DEPARTMENT, 1970 AND 1975
REPUBLIC OF PARAGUAY

PRIMARY SCHOOL	1970			1975		
	TOTAL	% OF TOTAL ENROLLMENT	OFFICIAL	TOTAL	% OF TOTAL ENROLLMENT	OFFICIAL
TOTAL:	431,743		373,245	452,249		385,914
Asunción	69,103	16.0	43,170	61,476	13.6	36,485
Concepción	18,311	4.2	16,946	19,927	4.4	17,651
San Pedro	22,096	5.1	21,395	29,496	6.5	26,178
Cordillera	41,004	9.5	38,165	40,126	8.9	37,881
Guairá	25,126	5.8	23,637	25,440	5.6	23,841
Caaguazú	36,518	8.5	32,140	44,285	9.9	38,612
Caazapá	21,315	4.9	20,249	22,338	4.9	21,405
Itapúa	38,112	8.8	34,032	40,369	8.9	34,871
Misiones	14,279	3.3	13,610	14,731	3.3	13,992
Paraguarí	42,572	9.9	40,578	43,065 (r=8.6)	9.5	40,883 (r=9.3)
Alto Paraná	11,420	2.7	8,244	17,229	3.8	12,865
Central	61,689	14.3	55,905	56,699	12.5	51,837
Neembucú	13,018	3.0	11,922	12,950	2.9	11,434
Amambay	8,090	.2	6,596	9,806	2.2	7,981
Pte. Hayes	5,176	1.2	3,374	6,935	1.5	4,758
Boquerón	3,113	.7	2,481	462	.1	300
Olimpo	801	.2	801			

Note: In 1975, parts of Alto Paraná and Amambay became the new state of Canendiyú; parts of Nueva Asunción, Chaco and Boquerón were absorbed into the new state of Boquerón; Alto Paraguay became part of Olimpo.

Source: Desarrollo Educativo en Cifras, 1954-1974, and data from the MOE.

TABLE SA-21
PRIMARY EDUCATION REPEATERS, 1968-1975
REPUBLIC OF PARAGUAY

Year \ Grade	1st	2nd	3rd	4th	5th	6th
1968	31,765	18,339	9,524	4,312	1,994	1,189
1969	32,082	20,506	11,044	5,794	2,525	1,300
1970	31,501	21,096	12,183	6,067	2,803	1,293
1971	32,265	21,024	12,389	6,320	2,960	1,491
1972	32,021	20,890	12,583	6,909	3,288	1,478
1973	32,326	20,742	13,161	6,659	3,330	1,424
1974	31,722	20,366	12,856	6,963	3,183	1,276
1975	28,752	18,703	11,946	6,103	2,688	1,186

A-99

Source: MOE, Department of Planning.

TABLE SA-22
PRIMARY EDUCATION REPEATERS, URBAN AREAS, 1968-1975
REPUBLIC OF PARAGUAY

Year \ Grade	1st	2nd	3rd	4th	5th	6th
1968	10,884	6,651	4,340	2,694	1,433	842
1969	10,163	7,313	5,505	3,229	1,806	849
1970	10,161	7,313	5,505	3,229	1,806	849
1971	10,068	7,058	5,275	3,272	1,949	959
1972	9,664	6,694	5,081	3,595	1,943	898
1973	9,805	6,458	5,156	3,184	1,961	792
1974	9,295	6,056	4,708	3,106	1,701	690
1975	7,695	5,463	4,171	2,622	1,357	581

Source: MDE, Department of Planning.

TABLE SA-23
PRIMARY EDUCATION REPEATERS, RURAL AREAS, 1968-1975
REPUBLIC OF PARAGUAY

Year \ Grade	1st	2nd	3rd	4th	5th	6th
1968	20,881	11,688	5,184	2,118	561	347
1969	21,676	13,241	6,105	2,691	802	406
1970	21,340	13,783	6,678	2,838	997	444
1971	22,197	13,966	7,114	3,048	1,011	532
1972	22,357	14,196	7,502	3,314	1,345	580
1973	22,521	14,284	8,005	3,475	1,369	632
1974	22,427	14,310	8,148	3,857	1,482	586
1975	21,057	13,240	7,775	3,481	1,331	605

Source: MDE, Department of Planning.

TABLE SA-24

DISTRIBUTION OF SECONDARY SCHOOL ENROLLMENT BY DEPARTMENT, 1970 AND 1975
REPUBLIC OF PARAGUAY

SECONDARY SCHOOL	1970			1975		
	TOTAL	% OF TOTAL ENROLLMENT	OFFICIAL	TOTAL	% OF TOTAL ENROLLMENT	OFFICIAL
TOTAL:	55,777		26,909	75,424		47,195
Asunción	26,929	48.3	10,213	35,029	46.4	17,823
Concepción	1,489	2.7	887	2,484	3.3	1,468
San Pedro	1,148	2.1	706	1,643	2.2	1,447
Cordillera	2,812	5.0	1,832	3,770	5.0	3,388
Guairá	2,187	3.9	1,131	3,298	4.4	2,566
Caaguazú	1,994	3.6	710	3,050	4.0	1,470
Caazapá	1,049	1.9	568	1,212	1.6	882
Itapúa	3,238	5.8	2,294	3,873	5.1	3,056
Misiones	1,639	2.9	1,222	1,986	2.6	1,685
Paraguarí	2,992	5.4	1,786	4,125 (r=19.3)	5.5	3,345 (r=34.8)
Alto Paraná	752	1.4	298	1,814	2.4	1,327
Central	6,986	12.5	3,346	9,220	12.2	5,423
Neembucú	1,008	1.8	899	1,415	1.9	1,356
Amambay	783	1.4	546	1,159	1.5	929
Pte. Hayes	369	1.0	261	550	.7	487
Boquerón	320	1.0	143	410	.5	154
Olimpo	82	.2	67	316	.4	316
Canendiyú				70	.1	70

Source: MOE and Desarrollo Educativo en Cifras, 1954-1974.

TABLE SA-25

NUMBER AND PERCENT OF SIXTH-GRADE GRADUATES ENROLLING IN FIRST YEAR OF BASIC CYCLE, BY SECTOR, 1963-1973
REPUBLIC OF PARAGUAY

Year	Sixth Grade Finishers	ENROLLMENT IN FIRST YEAR OF BASIC CYCLE						
		Year	By Sector and Absorption Percentage					
			Total		Public		Private	
			Number	%	Number	%	Number	%
1963	12,872	1964	10,094	78.4	4,904	38.1	5,190	40.3
1964	15,332*	1965	11,023	71.9	5,342	34.8	5,681	37.1
1965	17,272	1966	11,999	69.5	5,681	32.9	6,318	36.6
1966	17,550	1967	12,709	72.4	6,295	35.9	6,414	36.5
1967	21,056	1968	14,371	68.2	6,929	32.9	7,442	35.3
1968	23,524	1969	15,347	65.2	7,397	31.4	7,950	33.8
1969	24,844	1970	16,740	67.4	8,052	32.4	8,688	35.0
1970	25,825*	1971	16,622	64.4	8,933	34.6	7,689	29.8
1971	27,338	1972	17,728	64.8	10,219	37.4	7,509	27.5
1972	28,710	1973	19,058	66.4	11,787	41.1	7,271	25.3
1973	30,368	1974	19,878	65.5	12,965	42.7	6,913	22.8

* Corrected Data

Source: MOE, Desarrollo Educativo en Cifras, p. 96.

TABLE SA-26

**NUMBER AND PERCENT OF BASIC CYCLE GRADUATES* ENROLLING
IN FOURTH YEAR OF SECONDARY EDUCATION, BY SECTOR AND BRANCH OF STUDY, 1964-1973
REPUBLIC OF PARAGUAY**

YEAR AND SECTOR	BASIC CYCLE FINISHERS	YEAR AND SECTOR	FOURTH-YEAR ENROLLMENT					
			S E C T O R					
			Bachillerato		Commercial		Normal	
			Number	%	Number	%	Number	%
1964	4,700	1965	2,650	56.4	813	17.3	1,102	23.4
Public	2,515		1,029	21.9	552	11.7	806	17.1
Private	2,185		1,621	34.5	261	5.6	296	6.3
1965	4,930	1966	2,884	58.5	952	19.3	1,525	30.9
Public	2,635		1,141	23.1	677	13.7	1,162	23.6
Private	2,295		1,743	35.4	275	5.6	363	7.4
1966	5,680	1967	3,128	55.1	1,095	19.3	1,586	27.9
Public	2,945		1,159	20.4	724	12.7	1,175	20.7
Private	2,735		1,969	34.7	371	6.5	411	7.2
1967	6,100	1968	3,549	58.2	1,252	20.5	1,380	22.6
Public	3,110		1,276	20.9	741	12.1	1,039	17.0
Private	2,990		2,273	37.3	511	8.4	341	5.6
1968	7,033	1969	3,997	56.8	1,468	20.9	1,553	22.1
Public	3,485		1,452	20.6	843	12.0	1,099	15.6
Private	3,548		2,545	36.2	625	8.9	454	6.5
1969	7,730	1970	4,940	63.9	1,785	23.1	939	12.1
Public	3,995		1,929	24.9	854	11.0	715	9.2
Private	3,735		3,011	38.9	931	12.0	224	2.9
1970	8,227	1971	6,642	80.7	1,785	21.7	-	-
Public	3,985		3,498	42.5	854	10.4	-	-
Private	4,242		3,144	38.2	931	11.3	-	-
1971	8,498	1972	7,339	86.4	1,519	17.9	-	-
Public	4,443		3,856	45.4	800	9.4	-	-
Private	4,055		3,483	40.9	719	8.5	-	-
1972	9,304	1973	7,713	82.9	1,572	16.9	-	-
Public	5,009		4,463	48.0	850	9.1	-	-
Private	4,295		3,249	34.9	722	7.8	-	-
1973	9,818	1974	8,457	86.1	1,649	16.9	-	-
Public	5,820		4,957	50.5	969	10.0	-	-
Private	3,998		3,500	35.6	680	6.9	-	-

* Estimated data.

Source: MOE, Desarrollo Educativo en Cifras, p. 97.

TABLE SA-27

NUMBER OF SECONDARY SCHOOLS BY DEPARTMENT, SECTOR, AND LEVEL, 1975
REPUBLIC OF PARAGUAY

DEPARTMENT	SCHOOLS								
	Total			Level and Sector					
	Total	Public	Private	Basic Cycle		Humanities		Commercial	
				Public	Private	Public	Private	Public	Private
TOTAL	731	407	324	229	183	155	110	23	31
Asunción	256	92	164	51	82	35	64	6	18
Concepción	21	11	10	6	6	4	4	1	-
San Pedro	24	18	6	10	4	8	1	-	1
Cordillera	48	39	9	22	6	16	3	1	-
Guairá	39	27	12	15	7	10	4	2	1
Caaguazú	35	14	21	8	13	5	7	1	1
Caazapá	21	15	6	9	4	5	2	1	-
Itapúa	39	27	12	17	8	6	3	4	1
Misiones	23	17	6	11	3	6	1	-	2
Paraguarí	61	44	17	22	11	18	4	4	2
Alto Paraná	15	11	4	6	2	5	1	-	1
Central	94	48	46	25	29	22	13	1	4
Ñeembucú	22	19	3	13	3	5	-	1	-
Amambay	12	10	2	5	1	4	1	1	-
Cenendiyú	2	2	-	1	-	1	-	-	-
Pte. Hayes	8	6	2	4	2	2	-	-	-
Alto Paraguay	5	5	-	3	-	2	-	-	-
Chaco	-	-	-	-	-	-	-	-	-
Nueva Asunción	-	-	-	-	-	-	-	-	-
Boquerón	6	2	4	1	2	1	2	-	-

Source: MOE, Anuario 1975, p. 94.

TABLE SA-28

NUMBER OF PUPILS IN SECONDARY SCHOOLS BY GRADE, AGE, AND SEX, 1975
REPUBLIC OF PARAGUAY

SEX AND AGE	STUDENTS ENROLLED						
	Total	By Grade					
		First	Second	Third	Fourth	Fifth	Sixth
TOTAL.	75,424	20,709	16,013	12,681	10,540	8,434	7,047
Less than 13	6,393	5,840	548	5	-	-	-
13	10,803	5,901	4,388	504	10	-	-
14	13,110	4,050	4,948	3,730	377	5	-
15	12,363	2,477	3,019	3,852	2,743	264	8
16	10,797	1,143	1,621	2,242	3,331	2,241	219
17	9,138	541	678	1,131	1,855	2,694	2,239
18	5,766	321	313	578	1,011	1,489	2,054
19	3,092	133	171	273	483	833	1,199
20 to 24	3,107	223	247	289	572	705	1,071
25+	855	80	80	77	158	203	257
BOYS	38,061	11,205	8,197	6,291	5,059	4,038	3,271
Less than 13	3,225	3,001	221	3	-	-	-
13	5,488	3,020	2,253	209	6	-	-
14	6,823	2,305	2,498	1,875	144	1	-
15	6,467	1,468	1,625	1,875	1,405	109	3
16	5,417	717	843	1,116	1,464	1,187	90
17	4,595	307	368	586	910	1,283	1,141
18	2,708	168	132	317	531	682	878
19	1,452	77	87	143	267	346	532
20 to 24	1,496	109	131	143	266	328	519
25+	390	33	39	42	66	102	108
GIRLS	37,363	9,504	7,816	6,390	5,481	4,396	3,776
Less than 13	3,168	2,839	327	2	-	-	-
13	5,315	2,881	2,135	295	4	-	-
14	6,287	1,745	2,450	1,855	233	4	-
15	5,896	1,009	1,394	1,995	1,338	155	5
16	5,380	426	778	1,126	1,867	1,054	129
17	4,543	234	310	545	945	1,411	1,098
18	3,058	153	181	261	480	807	1,176
19	1,640	56	84	130	216	487	667
20 to 24	1,611	114	116	146	306	377	552
25+	465	47	41	35	92	101	149

Source: MDE, Anuario 1975, p. 93.

TABLE SA-29

NUMBER OF SECONDARY SCHOOLS, TEACHERS, AND STUDENTS, 1954-1974
REPUBLIC OF PARAGUAY

YEAR	SCHOOLS			TEACHERS			STUDENTS		
	Number	Growth		Number	Growth		Number	Growth	
		Absol.	Relat.		Absol.	Relat.		Absol.	Relat.
1954	94	-	-	2,005	-	-	14,468	-	-
1955	97	3	3	2,058	53	3	15,472	1,004	7
1956	114	20	21	2,274	269	13	16,960	2,492	17
1957	129	35	37	2,531	526	26	18,623	4,125	29
1958	136	45	48	2,658	653	33	21,172	6,704	46
1959	147	53	56	2,898	893	45	22,951	8,483	59
1960	156	62	66	3,177	1,172	58	24,582	10,114	70
1961	178	84	89	3,385	1,380	69	26,559	12,091	84
1962	198	104	111	3,580	1,575	79	28,562	14,094	97
1963	207	113	120	3,437	1,432	71	28,870	14,402	100
1964	356	262	279	4,069	2,064	103	32,429	17,961	124
1965	405	311	331	4,500	2,495	124	35,402	20,934	145
1966	419	325	346	4,680	2,675	133	39,422	24,954	172
1967	437	343	365	4,990	2,985	149	42,435	27,967	193
1968	456	362	385	5,232	3,227	161	47,326	32,859	227
1969	498	404	430	5,554	3,549	177	51,408	36,940	255
1970	564	470	500	5,919	3,914	195	55,777	41,309	286
1971	603	509	541	6,722	4,717	235	58,130	43,662	302
1972	642	548	583	6,883	4,878	243	62,552	48,084	332
1973	652	558	594	6,729	4,724	236	66,746	52,278	361
1974	713	619	658	7,013	5,008	249	71,619	57,151	395

1954-1974

GROWTH	DETAIL	SCHOOLS	TEACHERS	STUDENTS
	Total Growth		619	5,008
Average Annual Growth		29	238	2,721

Source: MOE, Desarrollo Educativo en Cifras, p. 87.

TABLE SA-30

RETENTION RATES IN SECONDARY EDUCATION, 1958-1974REPUBLIC OF PARAGUAY

YEAR	ENROLLMENT		RETENTION %
	1st year	6th year	
1958 - 1963	7,160	2,920 ^{1/}	40.8
1959 - 1964	6,957	2,535	36.4
1960 - 1965	7,128	2,846	39.9
1961 - 1966	7,670	2,979	38.8
1962 - 1967	7,897	3,354	42.5
1963 - 1968	8,304	3,681	44.3
1964 - 1969	10,094	3,989	39.5
1965 - 1970	11,023	4,409	40.0
1966 - 1971	11,999	4,950	41.3
1967 - 1972	12,709	5,512	43.4
1968 - 1973	14,371	6,034	42.0
1969 - 1974	15,343	6,589	42.9

^{1/} Includes students enrolled in the 7th year of normal school.

Source: MDE, Desarrollo Educativo en Cifras, p.98.

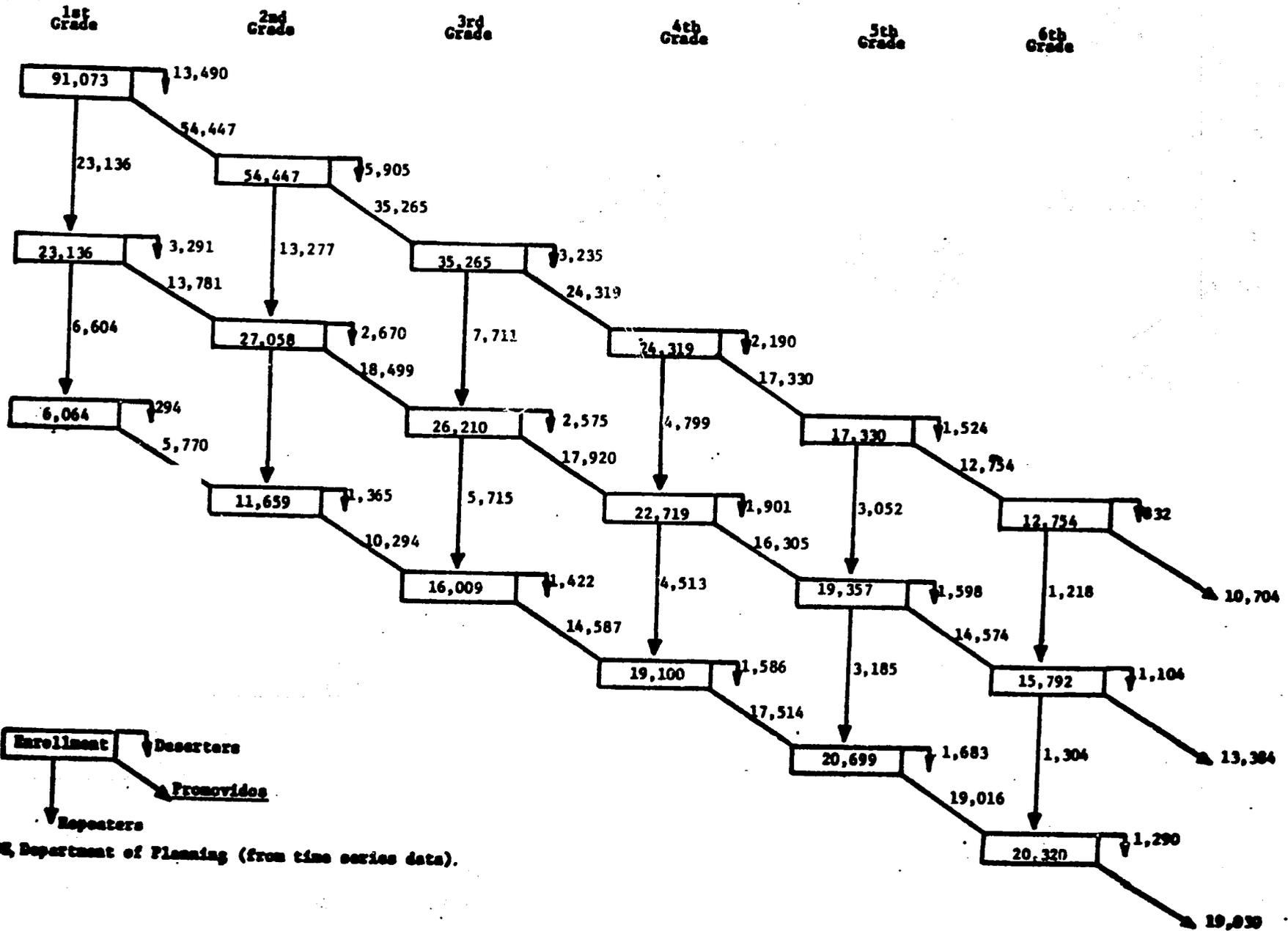
YEAR	ENROLLMENT	FINISHERS ^{2/}	YIELD %
	1st year	6th year	
1958 - 1963	7,160	1,978	27.6
1959 - 1964	6,957	2,251	32.4
1960 - 1965	7,128	2,535	35.6
1961 - 1966	7,670	2,555	33.3
1962 - 1968	7,897	2,969	37.6
1963 - 1968	8,304	3,292	39.6
1964 - 1970	10,094	3,600	35.7
1965 - 1971	11,023	4,189 ^{3/}	38.0
1966 - 1972	11,999	4,702 ^{3/}	39.2
1967 - 1973	12,709	5,236	41.2
1968 - 1974	14,371	5,732	40.0
1969 - 1975	15,343	6,200	40.4

^{2/} Estimated data.

^{3/} Substitutes other previously published data.

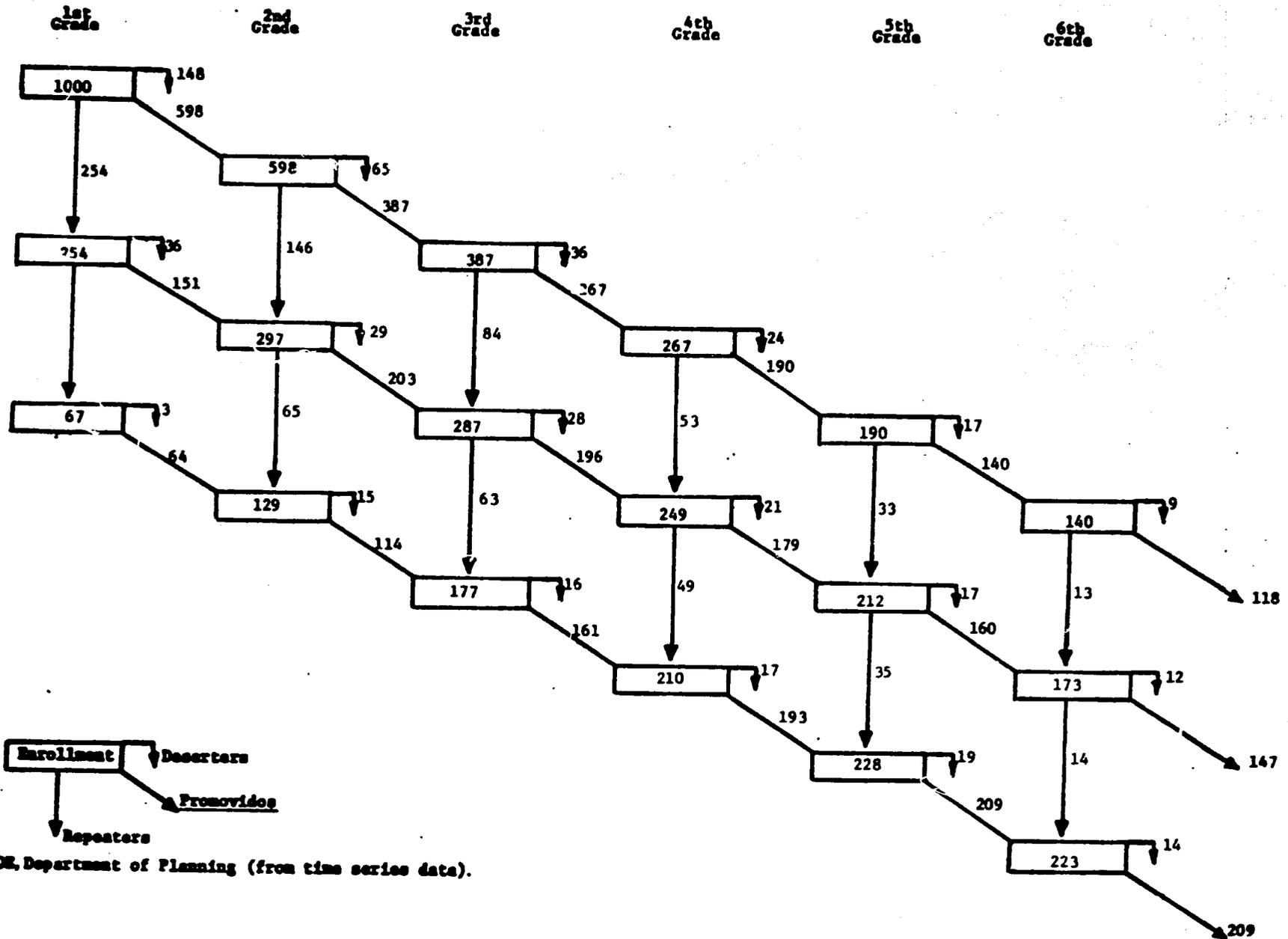
TABLE SA-31

PRIMARY EDUCATION COHORT FLOW, PARAGUAY, 1968-1975



Source: MOE, Department of Planning (from time series data).

TABLE SA-32
PRIMARY EDUCATION COHORT FLOW, PARAGUAY, 1968-1975
 (based on one thousand initial entries)



SOURCE: MOE, Department of Planning (from time series data).

PRIMARY EDUCATION COHORT FLOW, URBAN AREAS, PARAGUAY, 1968-1975

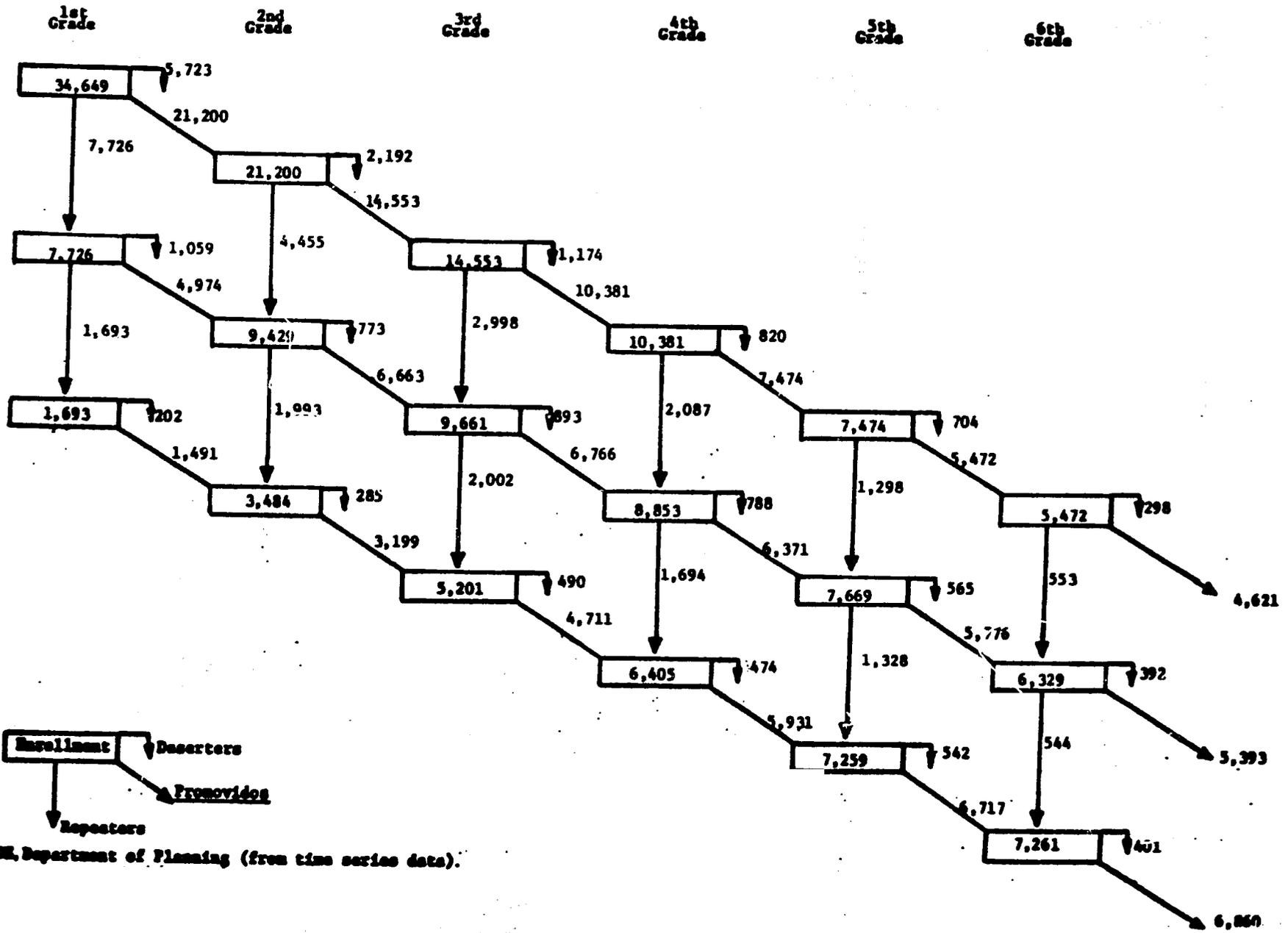


TABLE SA-34

PRIMARY EDUCATION COHORT FLOW, URBAN AREAS, PARAGUAY, 1968-1975

(based on one thousand initial entries)

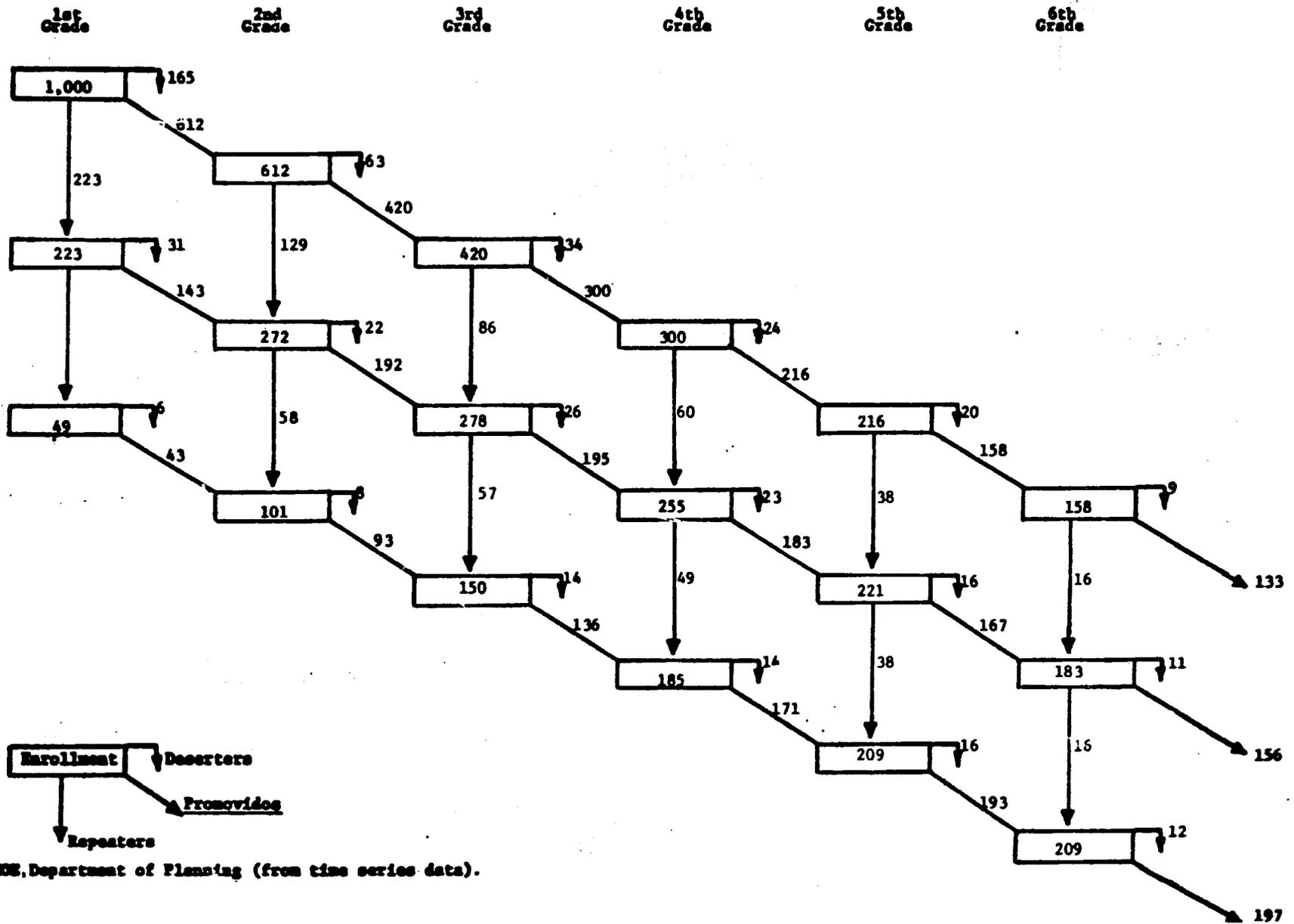
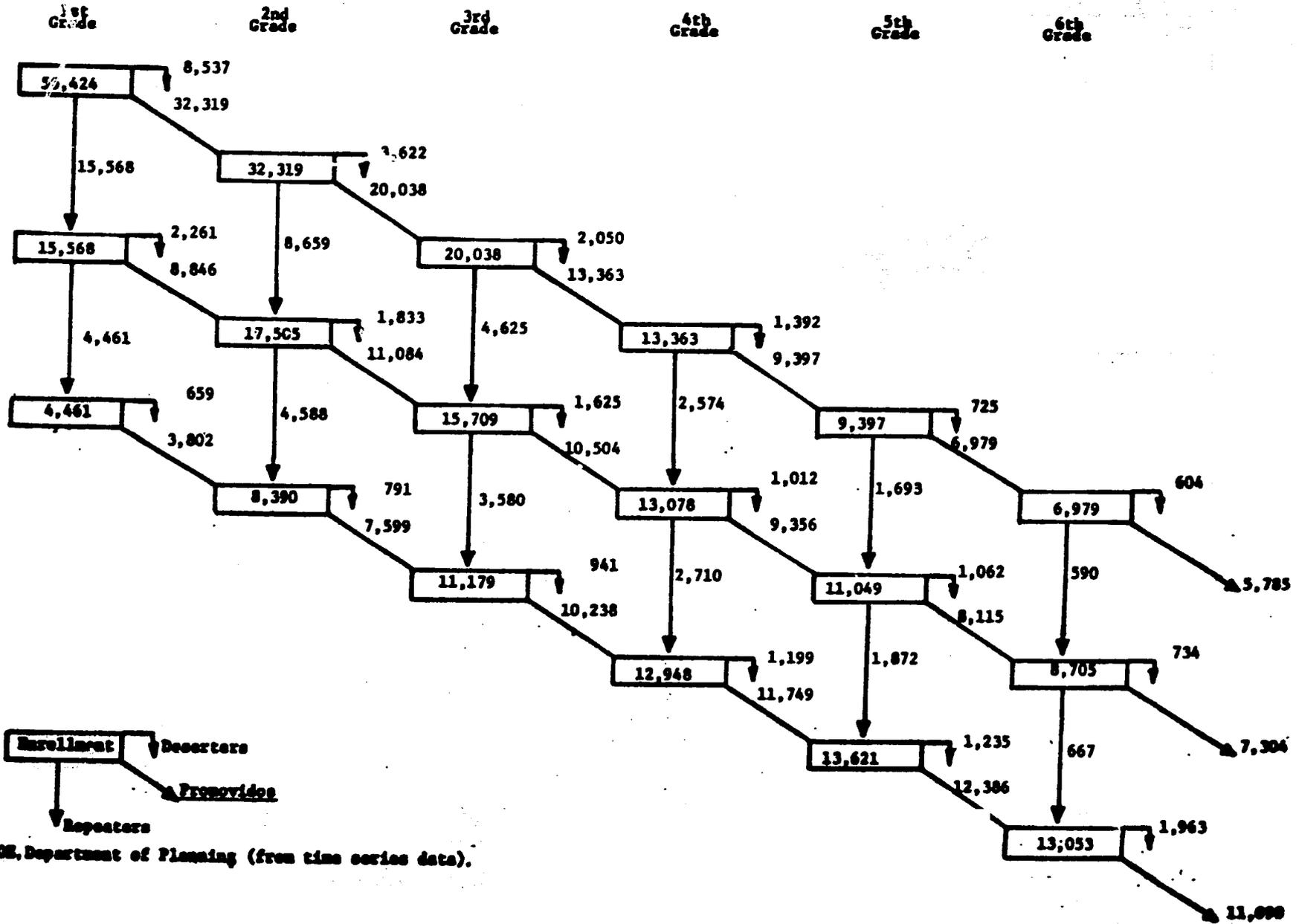
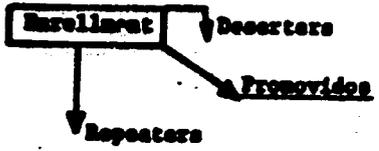


TABLE SA-35

PRIMARY EDUCATION COHORT FLOW, RURAL AREAS, PARAGUAY, 1968-1975



KEY:



SOURCE: MDE, Department of Planning (from time series data).

TABLE SA-36

PRIMARY EDUCATION COHORT FLOW, RURAL AREAS, PARAGUAY, 1968-1975

(based on one thousand initial entries)

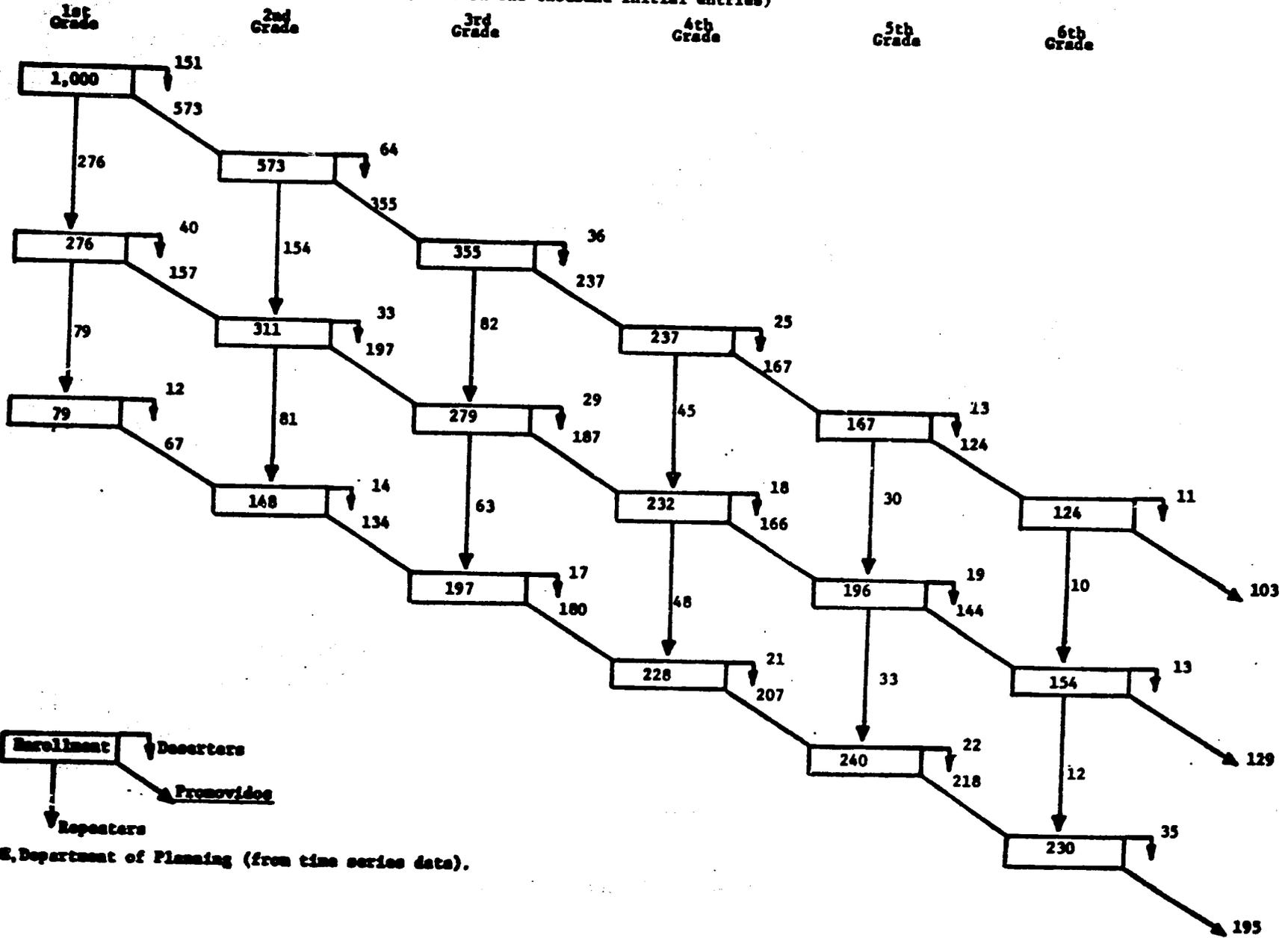


TABLE SA-37

COHORT ANALYSIS BASED ON 1,000 INITIAL ENTRIES AT THE PRIMARY LEVEL, PARAGUAY, 1968-1975

Number of Years of Schooling	1st Grade	2nd Grade	3rd Grade	4th Grade				5th Grade				6th Grade			
				Des-erters	Fin-ishers	Total Stud.	Stud. Years	Des-erters	Fin-ishers	Total Stud.	Stud. Years	Des-erters	Fin-ishers	Total Stud.	Stud. Years
1	148					148	148			148	148			148	148
2	36	65				101	202			101	202			101	202
3	3	29	36			68	204			68	204			68	204
4		15	28	24	190	257	1,028			67	268			67	268
5			16	21	179	216	1,080	17	140	194	970			54	270
6				17	193	210	1,260	17	100	194	1,164	9	118	161	966
7								19	209	228	1,596	12	147	178	1,246
8												14	209	223	1,784
Total number of students	187	109	80	62	562	1,000		53	509	1,000		35	474	1,000	
Student/student years							3,922				4,552				5,088
Student/student year count with apparent return					2,813				3,123				3,409		
Student/student year count without apparent return	229	277	300	303			1,109	320			1,429	250			1,679
Number of years required to produce one finisher					7.0 (6.98)				9 (8.94)				11 (10.73)		

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SOURCE: MOE, Department of Planning.

TABLE SA-38

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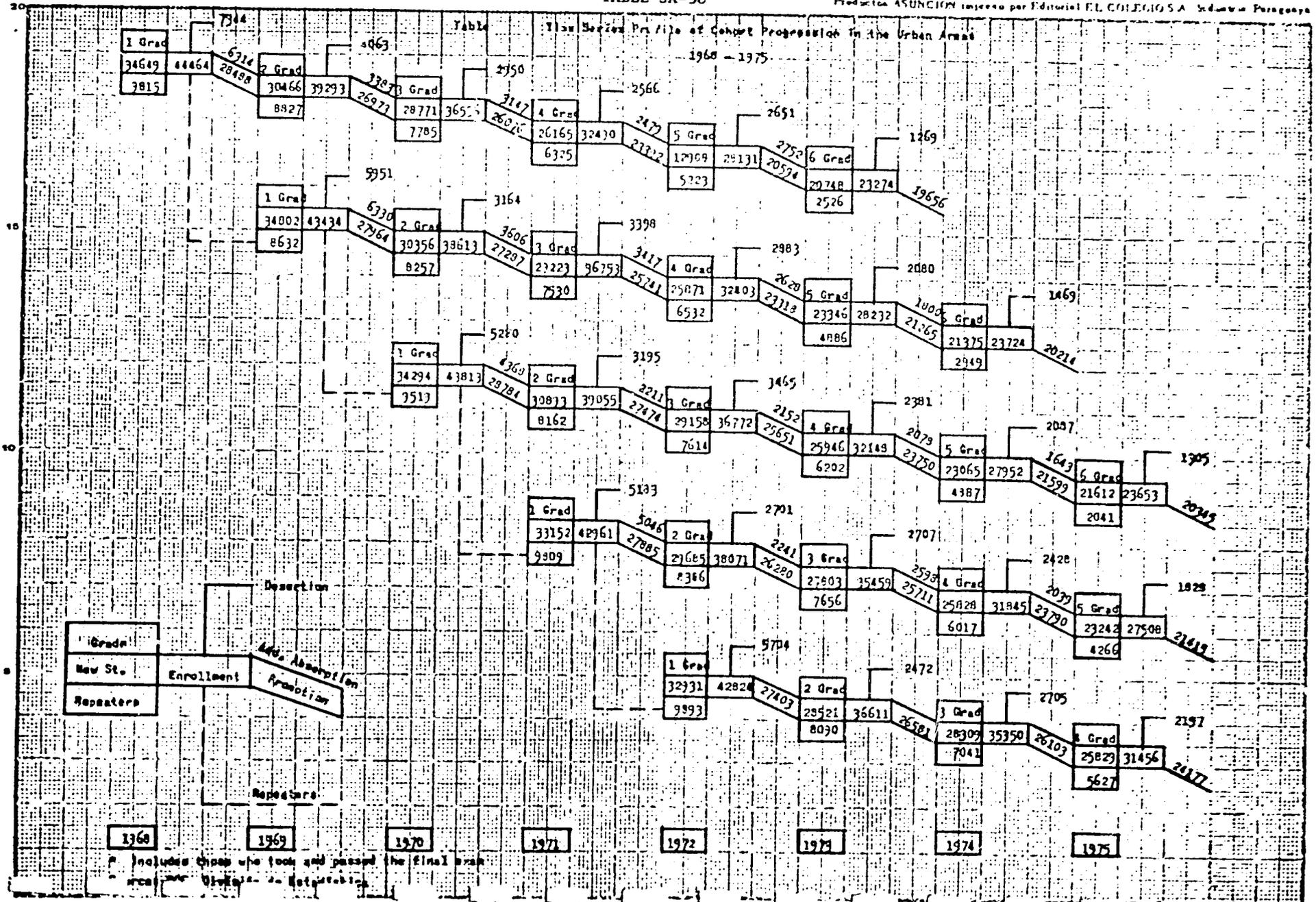


TABLE SA-39

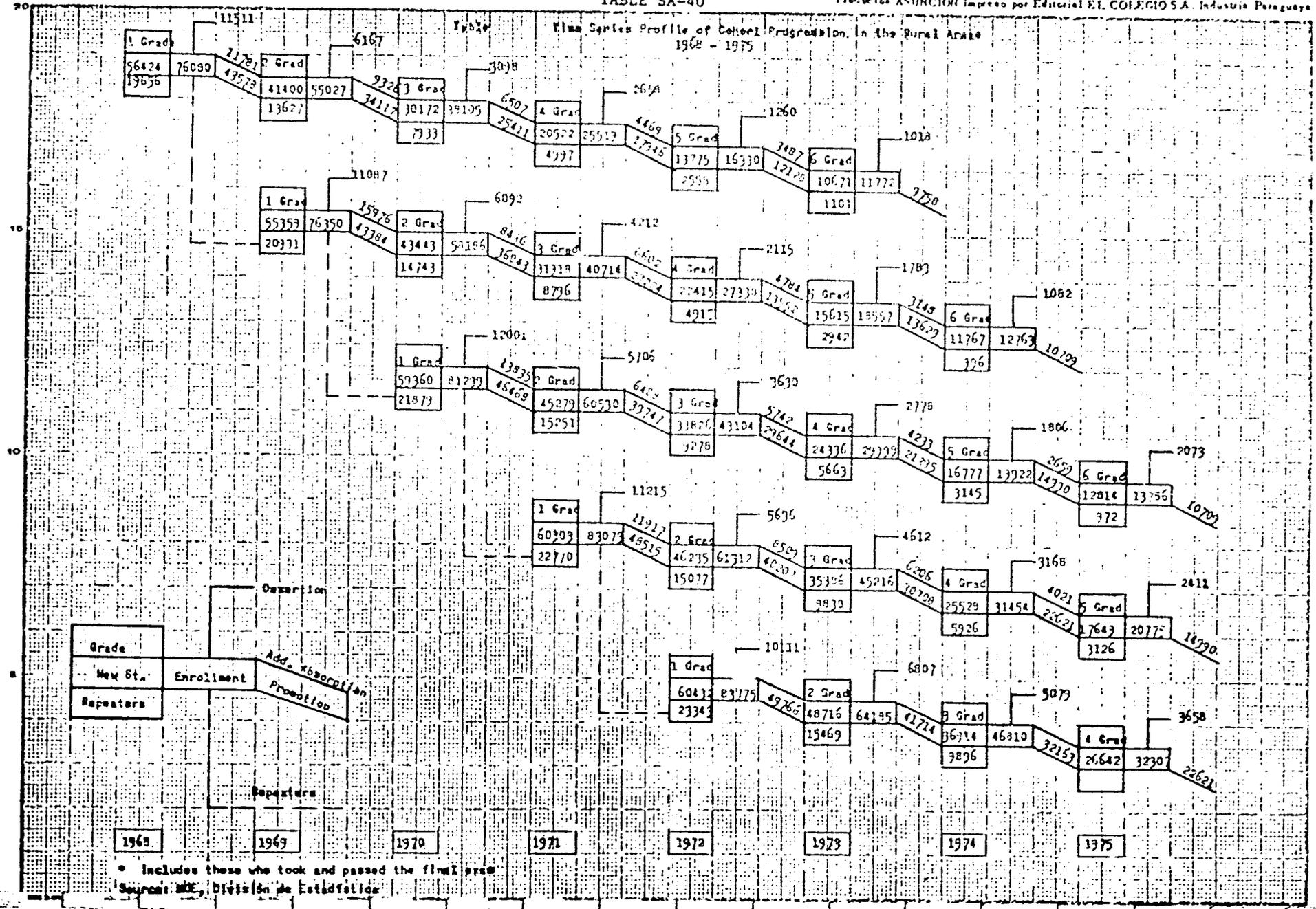
COHORT ANALYSIS BASED ON 1,000 INITIAL ENTRIES AT THE PRIMARY LEVEL, RURAL AREAS, PARAGUAY, 1968-1975

Number of Years of Schooling	1st Grade	2nd Grade	3rd Grade	4th Grade				5th Grade				6th Grade					
				Des-erters	Fin-ishers	Total Stud.	Stud. Years	Des-erters	Fin-ishers	Total Stud.	Stud. Years	Des-erters	Fin-ishers	Total Stud.	Stud. Years		
				1	165					165	165						
2	31	63				94	188			165	165					165	165
3	6	22	34			62	186			94	188					94	188
4		8	26	24	216	274	1,096			62	186					62	186
5			14	23	183	220	1,100	20	158	58	232					58	232
6				14	171	185	1,110	16	167	20	1,075					57	285
7								16	167	16	1,182	9	133			172	1,032
8								16	193	16	1,463	11	156			183	1,281
Total number of students	202	93	74	61	570	1,000						12	197	209	1,672		
Student/student years						3,845		52	518	1,000		32	486	1,000			
Student/student year count with apparent return										4,491						5,041	
Student/student year count without apparent return					2,805				3,143				3,466				
Number of years required to produce one finisher	245	224	276	295			1,040	308			1,348	227			1,575		
					7.0 (6.75)				9.0 (8.67)							10.0 (10.4)	

Source: MOE, Department of Planning.

TABLE SA-40

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* Includes those who took and passed the final exam.
 Source: MCE, División de Estadística

TABLE SA-41

COHORT ANALYSIS BASED ON 1,000 INITIAL ENTRIES AT THE PRIMARY LEVEL, RURAL AREAS, PARAGUAY, 1968-1975

Number of Years of Schooling	1st Grade	2nd Grade	3rd Grade	4th Grade				5th Grade				6th Grade					
				Des-erters	Fin-ishers	Total Stud.	Stud. Years	Des-erters	Fin-ishers	Total Stud.	Stud. Years	Des-erters	Fin-ishers	Total Stud.	Stud. Years		
1	151					151	151			151	151						
2	40	64				104	208			104	208			151	151		
3	12	33	36			81	243			81	243			104	208		
4		14	29	25	167	235	940			68	272			81	243		
5			17	18	166	201	1,005	13	124	172	860			68	272		
6				21	207	228	1,368	19	144	184	1,104	11	103	48	240		
7								22	218	240	1,600	13	129	154	924		
8												35	195	164	1,148		
Total number of students	203	111	82	64	540	1,000		54	486	1,000		59	427	230	1,840		
Student/student years							3,915				4,518						
Student/student year count with apparent return																	5,026
Student/student year count without apparent return					2,740				3,010				3,081				
Number of years required to produce one finisher	267	283	309	316			1,175	333			1,508	437					1,945
					7.3				9.3								12. (11.77)

Source: MOE, Department of Planning.

TABLE SA-42

SIMULATED FINANCIAL FLOW BASED ON COHORT PERFORMANCE AT THE PRIMARY LEVEL, PARAGUAY

Number of Years of Schooling	Cost Attributed to Desertion by Grade in Primary Schools						Cost Attributed to Finishers		
	1st Grade	2nd Grade	3rd Grade	4th Grade	5th Grade	6th Grade	4th Grade	5th Grade	6th Grade
1	6,568								
2	3,196	5,770							
3	399	3,861	4,794						
4		2,664	4,972	4,260			33,728		
5			3,550	4,660	3,770		39,720	31,065	
6				4,524	4,524	2,394	51,390	42,606	31,422
7					5,901	3,731		64,925	45,668
8						4,968			74,200-
Total Costs Attributed to:									
Deserters	10,163	12,295	13,316	13,444	14,195	11,093			
Cycle Finishers							124,838	138,596	151,290
Accumulated Cost		22,458	35,774	49,218	63,413	74,506			
Repeater Costs as a Proportion of Finisher Costs							91,110 (72.9%)	107,531 (77.6%)	119,868 (79.2%)
Deserter Costs as a Proportion of Finisher Costs:									
Grade Specific Cost				11%	10%	7%			
Accumulated Cost				39%	46%	49%			
Total Cost							174,056	202,009	225,796

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Source: Calculated from cohort flow and cost data, MOC Department of Planning.

TABLE SA-43

TOTAL COSTS OF EDUCATION IN PARAGUAY, BY LEVEL, ZONE, AND SECTOR, 1975
(in thousands of dollars)

CATEGORY	UNIT COST	FAMILY COST	ENROLLMENT	TOTAL SCHOOL COST	TOTAL FAMILY COST	TOTAL COST
<u>PRIMARY</u>						
Rural Public	38.86	20.32	240,595	9,349.5	4,888.9	14,238.4
Rural Private	42.60	24.30	20,439	870.7	496.7	1,367.4
Urban Public	48.45	35.79	145,319	7,040.7	5,200.9	12,241.6
Urban Private	77.98	38.29	45,896	3,578.9	1,757.4	5,336.3
TOTAL:				20,839.8	12,343.9	33,183.7
<u>SECONDARY</u>						
Public	98.26	89.90	47,195	4,637.4	4,242.8	8,880.2
Private	156.76	104.90	28,229	4,425.2	2,961.2	7,386.4
TOTAL:				9,062.6	7,204.0	16,266.6
GRAND TOTAL:				29,902.4	19,547.9	49,450.3

Source: Educational Cost Study, 1976.