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Sector Loans and Education Development in Brazil

A Desk Review of Impacts

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### Summary

A review of available documentation complemented by interviews with a few individuals knowledgeable of the AID education program in Brazil has recognized limitations. Within these, it was, nevertheless, possible to

- reconstruct the nature and interrelationships of the two education sector loans and other closely related projects covering a period from 1956-1964
- demonstrate that the period was one of accelerating development of fundamental (grades 1-3) level education, culminating in the AID sector loans and the Brazilian educational reform initiated in 1971 and touching all aspects of the educational system
- Identify impacts in specific areas, made primarily through the development of human resources and of demonstration projects

The impact areas examined are

- Planning/Administration: capacities were strengthened at the national level, in selected centers of teacher and administrator education, and in all 22 state secretariats of education; integrated four-year state education plans were elaborated as the basis of state programs, reviewed, evaluated and updated annually;
- Financial Resources: investments in fundamental level (grades 1-3) education increased sharply as the entire infrastructure was expanded and improved; state and municipal resources stepped up their role in maintaining and developing fundamental education within one of, if not the most, decentralized system of education in Latin America;
- Curricula: these were redesigned for all grades, most notably 5 through 9 (ginasio), where practical studies were combined with basic academic courses in an effort to overcome the traditional dichotomy between intellectual and manual disciplines and related socioeconomic statuses;
- Construction: school facilities were designed as a function of the modernized curricula and teaching methods and the construction process itself was transformed into a specialized activity which utilized private sector firms instead of state agencies;
- Teachers: from 1968 to 1974, the number of teachers multiplied more than three times, changing the pupil teacher ratio from 28:1 to 22:1; the proportion of certified teachers rose from 54 to 66 percent;
- Enrollments: The proportion of 7-14 year-old population enrolled in grades 1-8 grew from 54 to 86 percent between 1962 and 1974, although strong regional and urban-rural differences persisted.

Questions which require greater in depth and onsite examination were raised in all of the areas examined, especially with regard to the long-term appropriateness and institutionalization of changes introduced. A field study is proposed in order to more adequately assess the impacts of the largest (financially) education sector program in AID's history.

## Best Available Document

Acronyms

ATAC	American Technical Assistance Corporation
EATEP	Elementary Education Planning Team
EPEM	Secondary Education Planning Team
ESL	Education Sector Loan
GDP	Gross Domestic Product
MEC	Ministry of Education and Culture
PREMEM/ PREMEN	Program for the Expansion and Improvement of Education
PABAEE	Program of American Brazilian Assistance in Elementary Education
SUDENE	Superintendency of Development in the Northeast
SUNY	State University of New York

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IV

## Introduction

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This impact review focuses on the two education sector loans made to Brazil, in 1969 and 1971, and on the projects which set the stage for them. Totalling 82 million dollars, the loans represent AID's largest investment to date. The projects reviewed here were part of a very large general and sectoral assistance program, a fact which should be kept in mind when considering the impact of any part of that program. A summary of U.S. dollar assistance and education expenditures indicates the importance given to education within the USAID/Brazil program. Figures on participant training by sector from 1962-74 show that almost 30 percent was received by the education sector. Simultaneously, it should be noted that Brazil is the world leader in the number of participant trainees under AID programs. (See Appendix, Tables 14, 15, 16).

The information on which this paper is based was taken largely from documents currently available in AID Washington and through Mr. Al Ravelli who was able to provide final reports for the two sector loans. Care has been taken to use the information provided by documents without incorporating the opinions of authors unless these seemed to be representative. Obviously, what can be discovered or deduced about impacts from documents alone is quite limited. Interviews with knowledgeable individuals provided some supplementary insights which have been incorporated into the final discussion.

In spite of the limitations of documentary sources, this review has been developed with the idea that, as in other research instances, the literature can provide both a basic orientation and an assessment of issues useful in themselves and as an aid to further work.

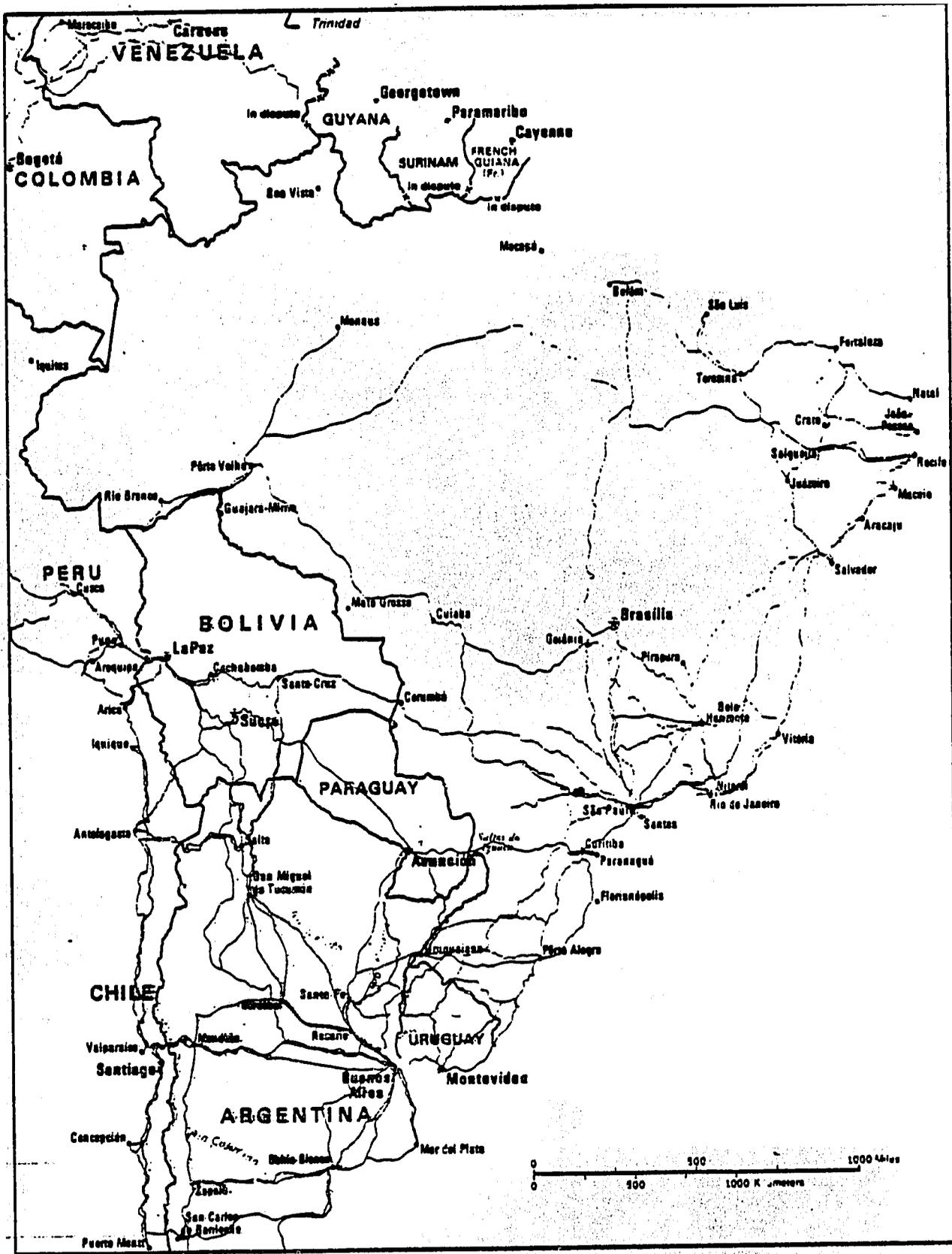
## Project Setting

Brazil is by far the largest of the Latin American countries. It is the fifth largest country in the world by territory and the seventh largest by population, estimated at 124 million in 1980. A predominantly agricultural society, the Brazilian economy began to diversify rapidly during and after World War II. From 1948 to 1977, the Gross Domestic Product (GDP) grew at an average of seven percent each year. At the height of the "Brazilian miracle," in the late 1960s and early 1970s, economic growth rates hovered around 9-14 percent (Appendix, Table 17). By 1973, AID began to regard Brazil as a transitional, semi-developed country and by 1978 withdrew its mission completely, closing out some 35 years of U.S. assistance.

But despite positive macrolevel indicators, disparities within Brazil have been and remain sharp. Regionally the rural northeast and the urban-industrial southeast, with roughly 30 and 60 percent of the national population respectively, represent the extremes of Brazilian development, among

Figure 1. Map of Brazil

# Brazil



502481 1-76 (541385)  
 Azimuthal Equal-Area Projection  
 Scale 1:28,000,000  
 Boundary representation is  
 not necessarily authoritative

— Railroad  
 — Road

the "best" and the "worst" in Latin America.<sup>1</sup> The third region, the Amazon frontier states, has been the site of an intensive development program in recent years, a process that has meant new riches for some, cultural disintegration and even death for others. In 1980, 10 percent of Brazilians are living in frontier areas in conditions which, by most indicators, are better than in the Northeast and not as good as in the Southeast (see Appendix, Tables 18 and 20).

Northeast-Southeast regional contrasts are illustrated, for example, in per capita income figures for 1970. In the Northeast, these ranged from 344 cruzeiros in the state of Piaui to 900 in Pernambuco; in the South, from 1074 in Espirito Santo to 4229 in Guanabara. Life expectancy during the 1960-70 period was calculated at about 48 years in the Northeast and 63 in the South, a difference due largely to an infant mortality rate of about 136 in the former as contrasted with 82 in the latter. World Bank figures for 1975 indicate that only 32 percent of the 0-18 year old population in the Northeast and 48 percent in the Southeast were adequately nourished. In both regions, the 7-14 year old (school age) populations show the greatest proportion of inadequately nourished children (Appendix, Tables 18, 20).

Education statistics show the same regional differences. In 1962, just as AID was about to enter into concentrated efforts to expand and improve primary education in the Northeast, only 42 percent of the 7-14 year old population was enrolled in grades 1 through 8; in the Southeast, the figure was 76 percent. Fourth grade completion rates were 3 per 1000 in the Northeast and 35 per 1000 in the Southeast; repetition rates were about 50 percent nationally (regional variations were not reported).

Until the educational reform of 1971, Brazil's education structure was a four-tiered one--primary (grades 1-4), ginasio (grades 5-8), colegio (grades 9-11) and higher education. The ginasio and colegio levels together formed what was called middle instruction (see Figure 2 for a representation of the structure before and after the 1971 reform).

The projects which set the stage for the sector loan program were the Program of American Assistance in Elementary Education (PABAEE; 1957-64), the program to improve primary education in the Northeast (SUDENE-AID; 1963-71) and, most important, the Elementary and the Secondary Education Planning and Administration projects (1965-72). Something of the purpose, history and outputs from each of these projects is presented in order to provide a proper perspective for the sector loan program.

#### PABAEE

The first attempt to systematically influence the development of Brazilian education centered on a pilot teacher training program at the National Pedagogical Institute in Belo Horizonte in the state of Minas Gerais, southern Brazil. The PABAEE team consisted of one technical advisor-project director and eight specialist advisors from the U.S. and 16 Brazilian counterparts.

The project's central objectives were three:

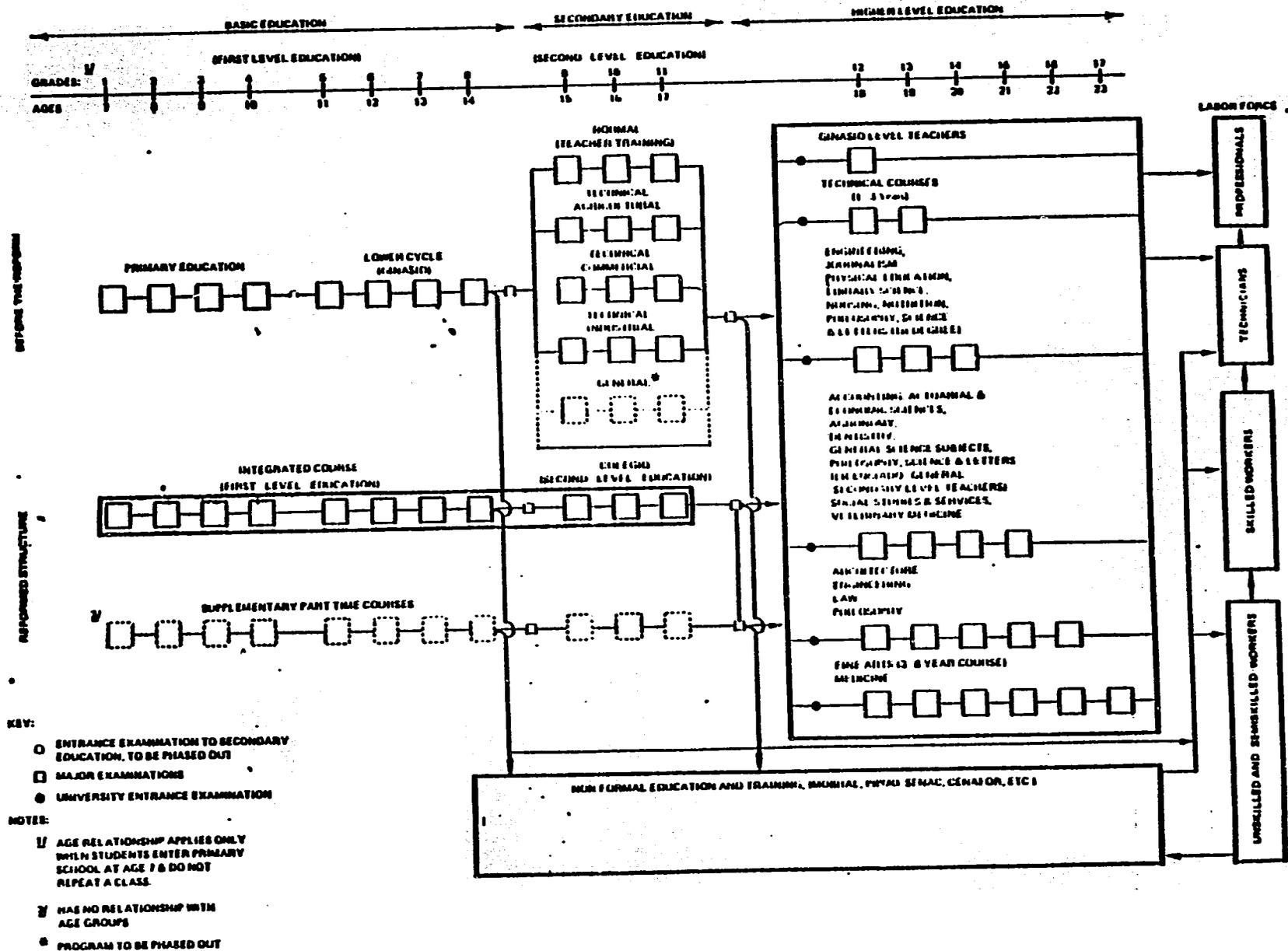
- .revision and strengthening of preservice and inservice training for elementary teachers throughout Brazil
- .production of materials for classroom use and teacher education
- .participant training for teacher trainers and supervisors

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Figure 2

Brazil  
Structure of the Education System  
Before and After 1971 Reform



Source: Appraisal of a Second Education Project Brazil. World Bank, October 1974.

Among the outputs from the PABAEF program were the following:

- .3500 supervisors, principals, teacher educators, curriculum specialists and teachers trained in courses ranging from a week to a year at the center in Belo Horizonte and through extension programs given in other states; 118 individuals, all charged in some way with the preservice and inservice training of teachers and administrators, received a year of advanced studies at Indiana University
- .entire elementary school curriculum revised and integrated, with new emphasis on instruction that was practical and relevant to the world of the student; a professional library of elementary science education materials and a materials development center installed and equipped
- .34 books published (113,500) copies and 32 other titles translated; radio, TV and other audiovisual programs produced; an education journal devoted to teachers and teacher educators founded
- .consultancy by PABAEF staff throughout Brazil and especially in the Northeast; relationships fostered with educational research institutes, teachers' groups and university faculties and secretariats of education in all 22 states.

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The most important impact made by PABAEF appears to have been as a demonstration of planned, multifaceted and integrated efforts at facing education problems. An example of the "multiplier effect" of activities spawned at the PABAEF center was the case of a two-week course in methods given by one consultant to 70 teacher educators who in turn offered 45-day courses to 2000 teachers in the state of Goias (which in 1960 had about 5000 primary teachers in all).

Authors of various end-of-tour reports mentioned that the center could not meet all the requests it received from secretariats of education and other institutes and normal schools throughout the country. An NEA evaluation team noted that "in every school or education facility visited in Brazil from Recife to Sao Paulo, there was some evidence of PABAEF's influence through publications or personnel." The report also cited requests and recommendations that the center be expanded and replicated in other areas of the country. The leadership role attributed to the PABAEF center was acknowledged by Anisio Teixeira, one of the most influential individuals in the development of Brazilian education. In his opinion the PABAEF center, which continues today under the name Centro Joao Pinheiro, was one of proven effectiveness, with a cadre of leaders available and with tried policies and practices which would take years to reproduce in other centers.

As U.S. participation in the center drew to a close in the early 1960s, two directions for further initiatives in education development were defined. Substantively, it was recommended that supervisory centers be established to upgrade elementary education through assistance to inservice teachers

on a continual basis, particularly the large numbers of uncertified teachers (46% in 1960). The second direction was a regional one: special attention should be paid to the educational problems of the Northeast where they were the most acute.

In a 1967 report on the educational situation in the Northeast, one AID official wrote that some states did not even have educational jurisdictions independent from other sectors; there were not state education plans even though primary and some post-primary education was a state responsibility; school censuses were partial at best and records of student successes and failures were nonexistent. Rural areas, 76 percent of the Northeast population in 1960, were especially deprived. The report indicated a concentration of facilities in the capital cities with no effective networks reaching rural areas. Where school facilities existed at all, they were commonly run down; curriculum was outdated, maladapted to rural life and instructional materials were unavailable. Most teachers were uncertified and there were no inservice programs, guidance and support systems or even mechanisms for regular delivery of paychecks.

#### Northeast Elementary Education Project (SUDENE-AID)

In the late 1950s, a prolonged drought in the Northeast culminated in widespread political movements. In the wake of the Cuban revolution, the severely depressed area rapidly gained notoriety as one of the most potentially explosive troublespots in all of Latin America. The Brazilian government of the period advocated radical socioeconomic reforms and established SUDENE (Superintendency of Development in the Northeast) to oversee and accelerate progress. The newly formed Alliance for Progress selected the Brazilian Northeast as its special target, convinced that concentrated efforts would produce rapid, highly visible results, a boon for both the Northeast and the Alliance. In 1962, a special Northeast Agreement was signed and over 131 million dollars was obligated for the first two years of an intensive program in agriculture, infrastructural development and education; an AID branch office was opened in the city of Recife.

*etc.* x ( The program to improve basic and elementary education in the Northeast continued from 1963-71 with a cost of about 25 million dollars, 21.7 million of which were supplied by the U.S. in loan form. Separate agreements for school construction were signed with nine northeast states and with Minas Gerais, where efforts at education development had begun with PABAEE. In addition, plans were also made to establish a teacher education center in Pernambuco modeled after the PABAEE center. More specifically, resources were designated for the construction or repair and equipment of classrooms, the construction of school kitchens and other service facilities, for teacher training, inservice and supervisory programs, for curriculum design, materials preparation and technical assistance to the state secretariats of education. With the exception of construction, the PABAEE program had provided experience in all other areas included in the Northeast program.

Something of the fervor, expectation and inexperience underlying the Northeast program is conveyed in the intention to have a school in every Northeast community with Alliance for Progress markings and in the proposal to increase enrollment of primary school age children in the area from 30

to 100 percent in five years. From the outset, the program met with difficulties, especially in the construction projects and in SUDENE-AID relations. The construction program was undermined by both inflation and inexperience to the point that only about 20 percent of the originally planned classrooms and normal schools and about half of the supervisory and teacher training centers were actually constructed or renovated. The SUDENE-AID problem stemmed largely from nationalism on both sides. The U.S. response was to develop an "islands of sanity" strategy whereby energies and resources were directed towards what were judged receptive pockets in a generally unreceptive organization and region. That situation persisted until 1964 when the military took over national government and SUDENE was staffed with personnel more favorably disposed to AID.

Although quantitative shortfall was severe, the Northeast project was credited with having established independent secretariats of education in 10 states and initiated entirely new mechanisms for communication with outlying areas through networks of supervisory centers. Most authors concurred in the opinion that the project had had the important impact of drawing attention to the conditions of the Northeast and breaking through the inertia of the education system in the face of these. An ATAC evaluation completed in 1971 reads:

At its initiation, the SUDENE-AID program was the largest and most sweeping project in education that Northeast Brazil had ever experienced. Today, it is looked back upon as the ushering in of a new era of hope that public education in the Northeast could be vitalized. . . . In a very broad sense, therefore, the SUDENE-AID program has provided a stimulus to the sum of progress that has been made in elementary education during the 1962-70 period.

In term of subsequent history, one very substantial impact from the Northeast program was the experience it provided in large scale expansion, an experience which fed directly into the planning and precautions taken in the education sector loans of 1969 and 1971.

#### Educational Administration and Planning at the Primary Level (EATEP)

One concrete realization which had emerged from the PABAEE experience was the need to bolster educational planning and administration capabilities. In the latter years, the Northeast project also shifted from an emphasis on school construction to an emphasis of strengthening planning and administration in the state secretariats of education. In 1965, a year after the conclusion of AID involvement in PABAEE, systematic efforts to improve planning and administration capabilities were made through contracts with San Diego State College (secondary education) and the State University of New York (primary education).

Under contract with SUNY, six consultants began to work out of the PABAEE center and formed the elementary education planning team (EATEP) with their Brazilian counterparts; two other SUNY consultants were assigned to work in the Northeast states in conjunction with the ongoing SUDENE-AID program. The latter remained active until 1971, even though EATEP itself

was dismantled in 1969 and its functions absorbed into a planning unit which combined both elementary and secondary levels.

The objectives set for EATEP were the following:

- . assess on a national basis the quality and effectiveness of elementary education and development and implement a specific plan for increasing and improving the flow of students through the elementary grades
- . develop specific plans and actions to relate elementary education more effectively to secondary and higher education
- . improve national and regional services to state councils and state secretariats of education in the elaboration and implementation of effective elementary education programs
- . train a corps of six Brazilian planners for elementary education at the national level who will be able to provide assistance to regions and states on a continuous basis and who will train key personnel at state level in techniques of planning, implementation, evaluation and administration of elementary education.

EATEP's first major activity, an assessment of causes of dropout and repetition at the elementary level, helped Brazilian education officials address an area to which little attention had been given. EATEP's second task was to elaborate specific plans for six cities which could also be studied and imitated in all the states. Direct contributions to the improvement of planning and administration capabilities at the state level were made primarily through participant training. Some 48 persons--most of them responsible for planning, administration and teacher education--were provided with courses from 3 weeks to 2 years. Assistance to states also included the analysis of statewide elementary education situations and the definition of state plans which were later incorporated into comprehensive initiatives in expansion and improvement of statewide systems under the first education sector loan.

Even in the difficult Northeast, gains were apparently being made. It was anticipated that the majority of those states would have developed adequate plans in time to qualify for monies under the second sector loan.<sup>2</sup>

#### Secondary Education Planning and Administration (EPEM)

The Secondary Education Planning Team (EPEM) was formed in 1965 by consultants from San Diego State College and their Brazilian counterparts. AID participation in EPEM lasted from 1965 to 1972. Work was slow in beginning for reasons which are not discernible in available documentation. As a unit within the Ministry of Education and Culture (MEC), EPEM assisted state secretariats of education in developing plans for secondary education

and fostered complementary units within those secretariats. By 1968, EPDM operations were given to elaborating state education plans to be submitted as the basis for the first education sector loan, signed in November 1969.

By mid-1970, EPDM had assisted in the establishment of secondary level planning units in six states, although only four were actually chosen to participate in the first sector loan. Under that loan, EPDM was charged with planning for human resources development. When the loan was initiated, the team set about revising curriculum guidelines and making plans for the emergency retraining of teachers, administrators and supervisors for the new type schools to be inaugurated through the loan. EPDM also continued to assist the formulation of state education plans submitted by other states to the ministry and to concern itself with finding ways to accomplish the articulation between primary and ginasio education, combined together under the 1971 education law to form fundamental level education (grades 1-8).

It is clear that without the work of EPDM, the later sector loans could not have been clearly designed nor successfully implemented. In fact, one report refers to "the EPDM technical assistance project and the loan program to which it gave birth." With the restructuring of the educational system and the dismantling of EATEP, EPDM was expanded into a national level planning unit for all lower level education. Its work was continued in conjunction with both the first and the second education sector loans.

Education Sector Loan I (ESL I)

As already noted, analysis of the education sector began with the formation of EATEP and EPDM and produced a more precise understanding of Brazil's educational situation and needs. It showed that even in the late 1960s, 31 percent (3920) of the municipalities had no secondary education facilities. While primary enrollment ratios were reaching 60 percent of the school age population, postprimary enrollments were only 20 percent. Access at that level was severely limited because half the schools were privately controlled. Even with two or three shifts daily, public schools were able to absorb only about 40 percent of their applicants. Within the middle level, the ginasios (grades 5-8) accounted for three-fourths of those enrolled and only about 50 percent of those who began ginasio studies finished them. In short, the ginasio level was identified as the priority area if postprimary flow through the system was to be improved. At the same time, a qualitatively different, more work-oriented type of curriculum was projected as necessary for living and working in a technologically developing society. The solution proposed by EPDM was the introduction of the ginasio polivalente through ESL I.

Signed in November 1969 and implemented between 1970 and 1974, ESL I provided 32 million dollars to be matched by Brazilian resources (federal government, 20 million dollars; participating states, 12 million dollars) for the establishment of multipurpose ginasios and comprehensive colegios as the basis of an expanded and improved secondary education system. Under the loan agreement, priority was given to the polivalentes, which combined education prescribed for grades 5-8 with training in the practical arts, i.e., industrial, commercial, agricultural and domestic. The ginasio curriculum called for a minimum of four hours per week in practical areas.

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As a result of collaboration with EPEM, four states (Bahia, Minas Gerais, Espirito Santo and Rio Grande do Sul) were able to submit four-year plans for the development and maintenance of secondary education system as required for participation in ESL I. Besides a careful description of the quantitative and qualitative improvements sought, the plans addressed administrative reorganization, expected curriculum changes and projected enrollments; provided an assessment of physical facilities and staff needs and an analysis of costs and financing. Other loan conditions required each state to increase its general educational expenditures by at least two percent each year (from a 1970 level of 20 percent) to 30 percent of overall expenditures and to designate 40 percent of that increase for the secondary level. At the same time, the states agreed to provide organization and curriculum according to EPEM-established guidelines, to secure adequate sites for construction, to define procedures for construction plans and awarding of contracts, to maintain the new facilities in satisfactory operating conditions, pay salaries of personnel promptly, and to submit reports and yearly detailed implementation plans and evaluations. A special implementation unit, PREMEM (Program for the Expansion and Improvement of Secondary Education), was established at the national level to manage all the activities associated with ESL I in conjunction with the participating states. For its part, the central government agreed to increase its real allocation to education annually during the loan years.

The large scale, comprehensive objectives of ESL I were seen "not just as another school construction program, . ." but as a means of "breaking the hard traditional mold of ginasio education in Brazil and replacing it with a new educational pattern, designed by Brazilians and for Brazilians, that will help to unlock Brazil's tremendous development potential."

Table 1 provides a summary of the quantitative accomplishments under ESL I. Briefly, some 204 polivalentes were completed, 8554 teachers and administrators were trained in Brazil and 79 in the U.S. By mid-1975, about 104,000 students were enrolled in the new polivalentes; 22 additional schools were still under construction. The four states and the government of Brazil were cited as having fully complied with their agreements under the loan. In fact, the government of Brazil exceeded its financial commitment by over 6 million dollars and the states by almost three million.

Other outputs as indicated in the final report prepared for the loan are summarized in Table 2. For some items, they were more or less uniform from state to state; for others, there was strong variation. For example, all states and schools were reported as using newly prepared curricula and with annual reviews by the state secretariats of education. But only in Rio Grande do Sul were all schools fully staffed with qualified teachers and administrators; in Bahia, the figure was 70 percent; in Espirito Santo, 98 percent and in Minas Gerais, only 24 percent.

Again, from 80 to 100 percent of schools in all four states had at least 80 percent of their teachers employed full-time. All states had established criteria which favored students from low income families; in three states, 68 to 80 percent of the students actually came from those families. In all states but Minas Gerais, the majority of schools were staffed with specially trained guidance counselors and more than 90 percent

Table 1

Summary Of Quantitative Accomplishments  
First Education Sector Loan

PROGRAM	Construction and Equipment		New Student Places Double Session		Schools in Operation		Training in Brazil		Training in the U.S.	
	Planned in IA	Actual	Planned in IA	Actual	Number	Enrollment 1975	Planned in IA	Actual	Planned in IA	Actual
<b>STATE:</b>										
Bahia	NCP- 48 CGP- 12 NCP- 2	39 0 0	38,400 2,400 4,000	31,200 0 0	34 0 0	17,218* 0 0	TT- 1,666 UT- 710 ATP- 225	1,151 133 459	N/P	20
Espirito Santo	NCP- 34 CGP- 9 NCP- 2	29 0 0	27,200 1,800 4,000	23,200 0 0	25 0 0	13,730 0 0	TT- 762 UT- 900 ATP- 238	531 410 212	N/P	14
Minas Gerais	NCP- 90 CGP- 9 NCP- 2	61 0 0	72,000 1,800 4,000	48,800 0 0	58 0 0	28,900 0 0	TT- 3,083 UT- 1,070 ATP- 355	1,754 254 644	N/P	19
Rio Grande do Sul	NCP- 85 CGP- 0 NCP- 2	56 0 0	68,000 0 4,000	44,800 0 0	50 0 0	34,078 0 0	TT- 2,473 UT- 1,478 ATP- 342	972 645 393	N/P	20
<b>NATIONAL</b>	NCP- 19 CGP- 0 NCP- 0	19 0 0	15,200 0 0	15,200 0 0	15 0 0	9,957 0 0	TT- 1,610 UT- 8,323 ATP- 0	362 255 179	N/P	6
<b>TOTAL</b>	NCP- 276 CGP- 30 NCP- 8	204 0 0	220,800 6,000 16,000	163,200 0 0	182 0 0	103,963 0 0	TT- 9,594 UT- 12,561 ATP- 1,160	4,770 1,897 1,197	60	79

NOTES: NCP - New Ginásio Polivalente (Grades 5-8)  
CGP - Conversion of Existing School into GP (Grades 5-8)  
NCP - New Colégio Polivalente (Grades 9-11)

N/P - Not Projected  
TT - Training of Teachers (1,600 - 1,920 hours)  
UT - Upgrading of Teachers (240 - 320 hours)

ATP - Upgrading of Administrative and Tech. Per. (240-320 hrs.)

\*Enrollment figure refers to 1974.

Source: History and Final Report, Loan Agreement 512-L-078

Table 2

## Measures of Project Outputs By State (ESL I)

	Percentage of Schools			
	BA	ES	MG	RS
Using special multi-purpose curriculum . . . . .	100	100	100	100
All positions filled by qualified teachers . . . . .	70	98	24	100
% Teachers working full-time . . . . .	100	76	82	100
With specially trained guidance counselors . . . . .	60	100	41	94
With effective guidance program . . . . .	97	90	25	94
With specially trained curriculum coordinator . . . . .	80	98	82	68
With school-community councils . . . . .	60	29	18	14
With parents circles . . . . .	100	88	10	80
With community support for school's operational budget . . . . .	100	70	10	36
Offering adult education courses . . . . .	80	23	10	34
With program of social and cultural events . . . . .	100	100	100	100
Fostering community self-help projects . . . . .	25	35		20
School library used by community . . . . .		100	100	100
Ginasios in good physical condition . . . . .	85	94	100	99
Ginasios with continuous provision of supplied and materials . . . . .	60	35	26	80
% of Operational Budget financed by state . . . . .	96	100	97	95
% dropouts - ginasio polivalentes . . . . .	5	4	4	7
other ginacias . . . . .	12	5	11	12
% repetitions - polivalentes . . . . .	3	10	12	17
other ginacias . . . . .		8	17	10
Projected enrollment (000s)	17.2	13.7	28.9	34.1

BA - Bahia    ES - Espirito Santo    MG - Minas Gerais  
 RS - Rio Grande do Sul

Source: History and Final Report 512- L-078; compiled by author

of their schools had effective guidance programs. Preliminary data suggested that drop out rates in the polivalentes schools were significantly lower than in other ginasios. Repeater rates, however, were about the same or higher where data was available. In keeping with the educational reform launched in 1971, initiatives were being made to articulate the polivalente schools with nearby grade 1-4 feeder schools to comply with the new definition of fundamental education as including grades 1-8.

In the area of teacher training, five science centers and four practical arts centers were equipped. As a result of the participation of 32 institutions of higher education in the training component of ESL I, new standards were reportedly set in those institutions and substantive innovations made in their teacher education programs. The impact on these and other institutions was illustrated by the fact that documents prepared by PREMEM and the universities involved in teacher training were requested and used by institutions in other states and the condensed course providing full teacher certification (which PREMEM pioneered), began to be offered in other universities.

As the reader may note in Table 1, there was some shortfall in projected material and human resource accomplishments. None of the eight planned colegio polivalentes were actually constructed, no existing facilities were converted though 30 conversions had been planned, and only 204 out of 276 new ginasio polivalentes were actually completed. This shortfall (35 %) was due primarily to a decision to enlarge new schools from 1600m<sup>2</sup> to 2400m<sup>2</sup>, so that in terms of overall volume of construction, the original goal was actually surpassed. Inflation also took a heavy toll in both the construction and the training components of the project. It had been projected at about 20 percent in 1969, but by the third construction phase (1973-75), the cost of each unit was more than double the cost in the first phase. Only about 37 percent of the 23,315 trainings planned to occur in Brazil actually took place. To some extent, fewer schools constructed meant that fewer personnel were needed to staff them, but the major cut came when PREMEM decided that training 9100 teachers for schools outside the participating states was a lower priority than meeting construction plans as fully as possible.

In spite of shortfalls, and in areas more global than those already mentioned, the final report for ESL I identified impacts at the levels of local communities, the state and national education systems.

Local communities reportedly benefitted from the financial resources channeled through school construction activities and from infrastructural improvements which occurred in transportation, water, and electricity, not to mention the construction standards embodied in the schools themselves. The influx of greater numbers of professionals and the availability of school resources (in particular, libraries and community education programs) was said to have raised the cultural standards of the communities. Families were given new opportunities to participate in school-community life through school-community and parent-teacher councils. Not least, the polivalente emphasis on practical education brought new substance and opportunities for the integration of school and environment. In the private sector in general, the PREMEM initiative to contract local firms encouraged them to prepare

make J  
\*

themselves to provide competent services to the education sector which was expected to invest massive resources in the next decade.

State education systems were directly influenced by the research, planning and time-phased implementation methods associated with the program for both human and material resource development. By the end of the project, state teams had gained confidence and became accustomed to planning school systems and individual school units. At the same time, inter-institutional relationships were strengthened at the local and state, state and national levels which joined forces in large scale program implementation for the first time. On the job training at all levels resulted in improved capacities as well as in providing an illustration of that approach as an ongoing developmental and system orienting technique.

At the national level, the MEC itself gained concrete experience in planning and implementing a major new program which was an integral part of its first education sector plan (produced in 1970) and a prelude to total reform of the educational system initiated in 1971.

Like the sector loan approach itself, the ginasio polivalente philosophy and guidelines were subsequently incorporated into programs financed under the Interamerican Development Bank and the World Bank. PREMEX, originally established for the purpose of carrying out the ESL I program, was regarded as so successful that it became a permanent agency of the MEC for the implementation of special education projects for grades 1-8.

#### Second Education Sector Loan (ESL II)

The agreement for a loan of 50 million dollars (matched by Brazil) was signed in June 1971, when ESL I was still in its first phase. Both loans were the culmination of the same processes and were similar in many ways. But ESL II had a larger clientele, a broader scope and a more varied program. In 1971, Brazil launched a national education reform and ESL II aimed at accelerating and consolidating that reform in seven states as well as assisting that process at the national level. Like ESL I, ESL II included integrated construction-equipment, training, curriculum improvement and materials production efforts. To insure effective implementation and institutionalization, four-year education plans, a commitment to increase educational resources, better employment conditions and mechanisms for supervision, evaluation and regular reporting were required from the participating states. But of all its dimensions, ESL II placed greatest emphasis on human resources development as the means to strengthen the capacities of the educational system itself. This major task was carried out through some 47 special projects in educational research and planning, administrative and pedagogical methods, information management, teaching-learning materials production and curriculum and program design.

Human resources training programs were especially designed after first surveying the needs of personnel at three levels: the newly constructed schools, other schools in the participating states, and the state secretariats of education. Through state programs in Ceara, Pernambuco, Santa Catarina, Goias, Parana, Rio de Janeiro and Rio Grande do Sul, some 33,738 persons were trained and 815 documents produced (Tables 3, A and B report the breakdown by state and project content). At the national level, PREMEX

Table 3

BRAZIL  
Second Education Sector Loan  
A. Number of Participant Trainees  
and Documents Produced By State

<u>States</u>	<u>Trainees</u>	<u>Documents</u>
Ceara	8043	202
Goiias	3522	107
Parana	5535	56
Pernambuco	2347	95
Rio de Janeiro	803	68
Rio Grande do Sul		
Santa Catarina	13,488	287

B. Number of Participant Trainees  
and Documents Produced By Special Project

<u>Special Project</u>	<u>Trainees</u>	<u>Documents</u>
Educational Research and Planning	809	44
Methodological Innovations & Quali- tative Improvement of Educational System	12,879	378
Educational Infor- mation System	4217	159
Teaching-Learning Materials	7278	105
Curriculum & Program Design	8555	129
TOTAL	33,738	815

as the implementing agency signed agreements with 10 other agencies and an additional 978 persons from 22 of the national states and territories were trained.

Construction was less ambitious under ESL II (at the time the ESL I program was still being realized). Only 99 units were planned. They were, however, not limited to a preconceived program as in ESL I which was entirely devoted to the construction, equipment and staffing of ginasio polivalentes. Seventy-six of the units planned were actually completed, 48 fundamental and 16 secondary level multi-purpose schools and 12 regional offices (see Table 4 ).

While information on targets initially set for the special projects could not be found, the final report for ESL II indicates that virtually all targets were met and in some cases surpassed. In fact, the number of persons actually trained may have doubled the number planned.<sup>3</sup> Though the ESL II program built on earlier projects, it succeeded more than any of them in involving state secretariats of education in initiatives to improve virtually all aspects of education and in bringing them into new collaborative relationships with other agencies, both local and national. Of particular note were the relationships established with faculties of education and Science in local universities in order to meet the human resources training goals of ESL II. As a result, higher education institutions not only contributed to the large increase in the number of certified teachers available throughout the education system, but simultaneously upgraded their own programs and personnel in preservice training and developed new, flexible programs for ongoing inservice training.

Probably because of the extensive nature of ESL II, outputs are not reported as specifically as for ESL I. Table 5 provides an overview of the kinds of outputs/programs which were reported by state in which they occurred, but there is no basis for judging what the associated impact may have been.

In a Ph.D. dissertation on the subject, Szklo (1978) notes that AID programs had a "great impact" on educational reform in Brazil during 1970-74. A review of the Brazil Education Sector Plan 1972-74 leaves no doubt as to the close relationship between it and the sector loans. Formulation of the plan was not far enough advanced to be noted in ESL I documents, but ESL II papers acknowledge a direct role in the realization of 10 of the 21 special projects then identified with the sector plan (the 1972-74 document actually describes 31 priority projects). Though neither the AID sector loan papers nor the Brazilian sector plan detail the relationships between the two, examination of the plan suggests that its major components were covered in sector loan programs. For instance, ESL I was clearly the basis of priority projects in Construction, Renovation, Equipping and Training of Personnel for the Multipurpose Schools; Training and Upgrading of Teachers for Secondary Schools; Career and Compensation Improvement Plan for Secondary School Teachers. Likewise, ESL II was essential to several projects designed to provide an expanded and efficiently articulated fundamental education system through such projects as Operation School; Upgrading and Training of Teachers for Fundamental and Normal Schools; Career and Compensation Improvement Plan for Fundamental School Teachers; Establishment of Advanced Systems of Educational Technology; Improvement of the Information

Table 4

BRAZIL  
Second Education Sector Loan  
Construction Outputs

STATES (AND PROGRAMS)	1st LEVEL OF EDUCATION		2nd LEVEL OF EDUCATION		REGIONAL OFFICES	
	PROGRAMMED	COMPLETED	PROGRAMMED	COMPLETED	PROGRAMMED	COMPLETED
CEARÁ	6	4	4	-	12	8
GOIÁS	3	6	4	4		
PARANÁ	5	7	4	7		
PERNAMBUCO	5	6	3	-	4	4
RIO DE JANEIRO	8	7	-	-		
RIO GRANDE DO SUL	29	18	1	-		
SANTA CATARINA	-	-	10	4		
COLÉGIO PEDRO II (NAT. PROGRAM)	-	-	1	1		
TOTAL	56	48	27	16	15	12

Source: History and Final Report, Loan Agreement 512-L-081

Table 5

BRAZIL  
Second Education Sector Loan

General Overview of Outputs From Special Projects

	1	2	3	4	5	6	7	8
<u>Research</u>								
Labor Market	x	x						
Special Education			x					x
Other					x			
<u>Administrative Reform</u>								
	x	x			x			
<u>Development of Educational Information Systems</u>								
	x	x		x	x			x
<u>Teaching-Learning Materials</u>								
Basic Libraries	17		132	35	23			
Specialized Labs			143					
Specialized Center	8	22						
General Center		x	x		x			
<u>Educational Technology</u>								
			x					x
<u>Curriculum and Program Design</u>								
	x	x	x	x	x			x
<u>Pedagogical Innovations</u>								
			x					
<u>Supervisory System</u>								
				x	x			x
<u>Textbooks, General</u>								
		62,843						
<u>Materials Distributed through FENAME</u>								
Books	199,000	86,000	113,400	42,000	33,000	36,000	174,000	27,000
Manuals	7,600	3,412	4,516	1,339	1,190	1,810	6,907	855
	1=Ceara	2=Pernambuco	3=Santa Catarina			4=Parana		
	5=Goiias	6=Rio de Janeiro	7=Rio Grande do Sul			8=Other		

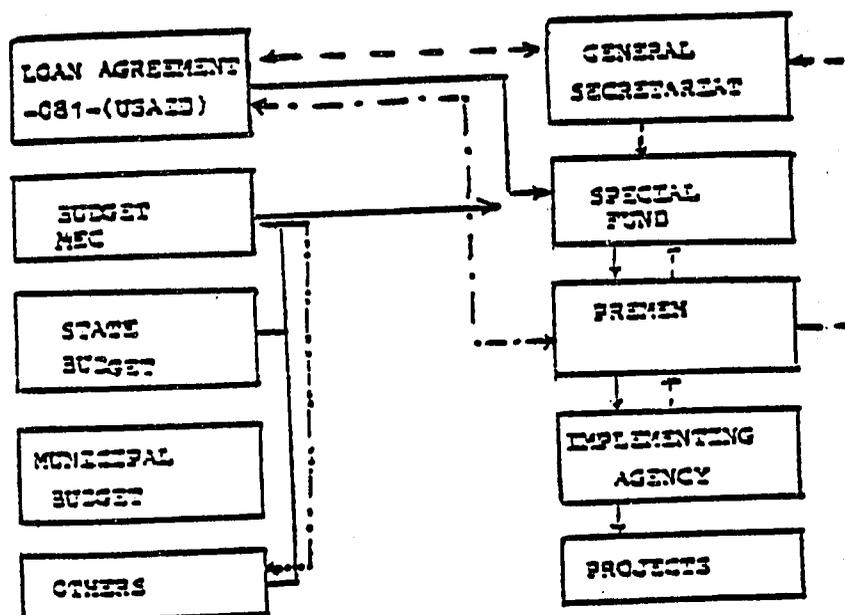
Source: Compiled on the basis of Summary of Special Projects in History and Final Report, Loan Agreement 512-L-081

System for Education and Culture; Modernization of Fundamental School Curricula; Training, Improvement and Qualification of Ministry of Education and Culture personnel; Educational Planning and Research, and the National Book Program. Both ESL I and II activities supported projects in Administration Reform and (the establishment of) a Mechanism for Financing Education and Culture.

The relationship between AID and the agents of reform is portrayed by Szklo in Figures 3, 4, and 5, taken from that work. Szklo's general conclusion with regard to some of the projects of the overall reform was that by 1974, many of the objectives of the "extremely ambitious program" had not been reached and that the support of AID and other donors was "insufficient" to the tasks that were to be accomplished. Much more difficult would be an analysis of what was accomplished in relation to the situation at an earlier point in time, something which the author did not undertake.

Figure 3

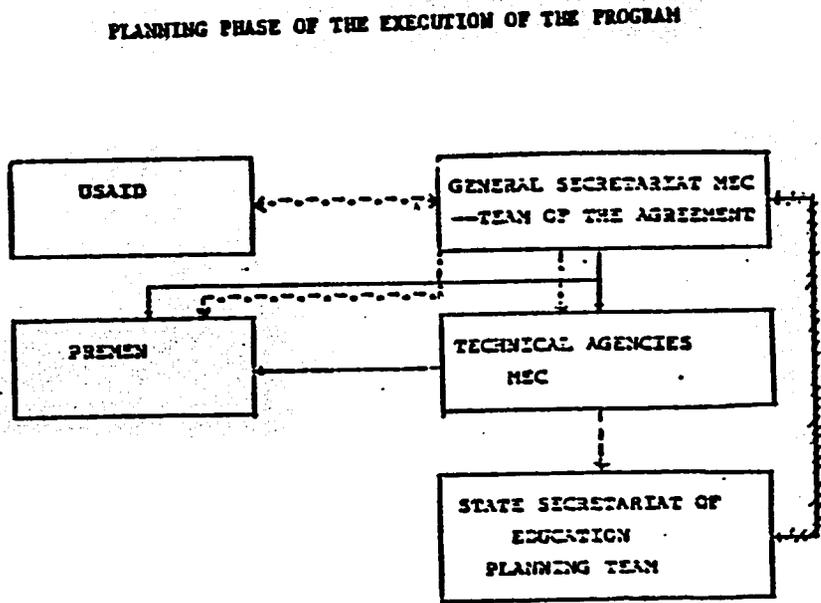
FLOW CHART OF THE OPERATION SYSTEM PRESENTED IN  
THE TECHNICAL MANUAL



- > Flow of resources
- - - - - Submission and Approval of the Plans of Application of Resources
- . . . . . Requesting resources
- . . . . . Schedules for disbursement of resources

Source: Szklo 1978

Table 4

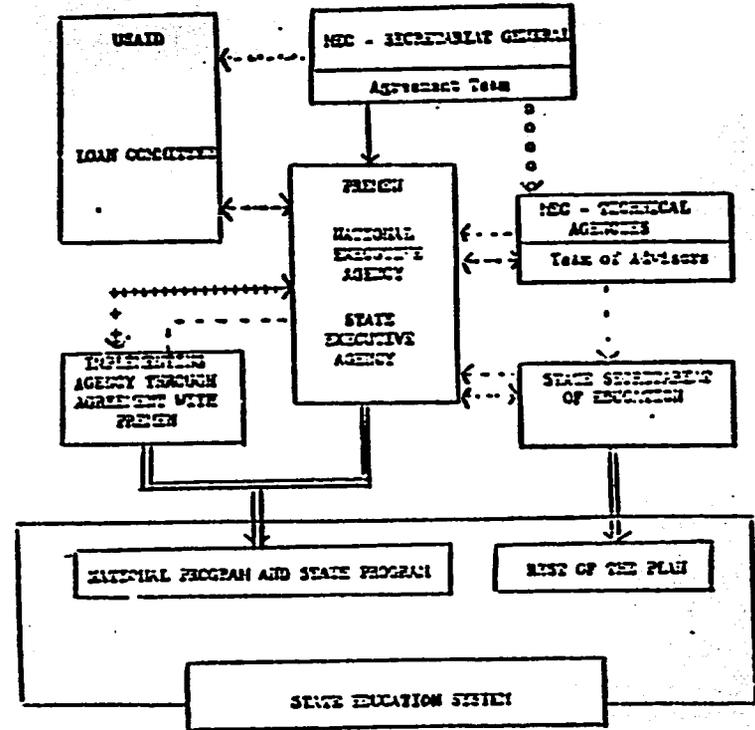


- > Coordination
- > Technical Assistance
- .-.-.-.-> Cooperation and Follow-up
- ///////> Resources of the State Plan

Source: Szklo 1978.

Table 5

IMPLEMENTATION PHASE OF THE EXECUTION OF THE PROGRAM



- =====> Implementation
- =====> Subordination
- =====> Technical Assistance
- .-.-.-.-> Cooperation, Follow-up, Exchange of Information
- oooooo> Coordination
- .....> Agreement or Contract

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### Discussion and Analysis of Impacts

The review of projects and accomplishments presented in previous pages has already given the reader a sense of project content, evolution, outputs and intended areas of impact. What follows is an attempt, given the limitations of the "desk" nature of this study, to summarize and examine a bit more analytically the nature of impacts in the areas of administration and planning, financial resources, construction, and increases in numbers of teachers and students enrolled in grades 1-8.

#### Planning and Administration Capacity

5  
1/2  
CX

The history and evolution of the projects themselves clearly convey the increased scale and accomplishment capability achieved by Brazilian educational institutions from the time of PABAEE to the time of the sector loan program. The PABAEE program was based in one teacher training center and, like the Northeast program, was an attempt to break through the inertia of the educational system in initial confrontations with its deficiencies and problems. In contrast, the sector loan program involved entire state and national systems and was characterized by a momentum and ability which had simply not been present a decade earlier. Reduction in shortfall, conversely the ability to meet defined targets, is but one indicator of that change. Shortfall in various components of the Northeast program had been 50 to 80 percent; by ESL I, it was sharply minimized and ESL II surpassed more targets than it failed to meet. The education establishment portrayed in ESL II documents is no longer one struggling to make limited achievements, but one engaged in a broad array of projects and able to generate new initiatives along the way.

\* Planning and administration capacities were strengthened at both national and state levels. Serious AID involvement began in 1966 with the activation of EATEP and EPEM. In February 1967, a special decree encouraged federal ministries and state governments to build planning units into their structures and in 1970, Brazil produced its first education sector plan. Through continued assistance and in conjunction with the sector loans, by 1974 planning units existed in all 22 state secretariats and were regarded as institutionalized in 19 of them. Integrated state education plans had been produced and approved in 15 states, though qualifications were expressed about some of them and recommendations for ongoing technical assistance were made. That assistance was available from a 30 member planning team in the Department of Fundamental Education, a 40 member team at the Centro Joao Pinheiro, and another 18 member team in the Department of Middle Level Education. Some 25 additional individuals were still in M.A. programs in planning and administration at San Diego State College. By 1976 State education plans were characterized as "setting forth clearly articulated and reasonably specific goals for rather radical changes in their systems of fundamental and secondary education" and "evidence of important development of planning capacity" (Hutchinson et al.; p. 67-68).

One person interviewed commented that the planning/administration accomplishments were far more important than the building of model schools and had had strong and lasting impact on the educational system. Another agreed that the fact that loan and counterpart monies could be obtained on the basis of sound plans and their implementation provided an effective leverage to move individual states into systematic and continuous planning activities. In his opinion, the approach set up a "tremendous dynamic" in most state secretariats in the country and among education leaders who were anxious to expand and improve education in their states. At the same time, all sources agreed that the actual quality of efforts, resources and capacities varied widely from state to state. *impact*

Another characteristic about which sources agreed was the centrist nature of the developments taking place. Central government controlled critical resources and established norms within which states were required to operate and to prove themselves, presumably as a prelude to more effective autonomy. One feature of the central nature of planning/administration initiatives is directly linked to AID and may have resulted in a somewhat negative impact. While on the one hand, AID might be credited with a strong contribution to planning and administration capabilities per se in the education sector, at least one author notes that the close relationship between AID and central government personnel had the effect of relegating the Brazilian public and education professionals to a merely passive role in the design and implementation of the nation's educational development. *unambiguously impact*

#### Financial Resources

Agreements for both ESL I and ESL II stipulated that federal and state support for education should be augmented regularly. In ESL I, certain thresholds were set; in ESL II, the principle was merely restated. According to the final report for ESL I, the federal government met its obligations to increase expenditures in real terms over the 1968 amount; the states also complied with their obligation to increase the basic figure of 20 percent of their annual budget by at least two percent annually. But there is cause for further discussion.

In spite of increments made, the proportion of federal educational expenditures to the national budget began to oscillate downward after 1968. Hutchinson et al. interpret this as evidence of no sustained influence on level of spending for education as a result of the sector loans. Counter-arguments can be proposed from two standpoints. First, the relative figures do not indicate that education expenses are deteriorating, only that they are not growing as fast as the overall national budget. The indication is that both after inflation and as a percentage of GDP, the federal allocation to education increased steadily at least through 1974 (see Tables 6, 7, and 8). Information in Table 8 appears quite conclusive as to the impact of sector loans on the availability of resources for fundamental level education during the 1970-75 period. \*

Second, it may be that without the levels achieved during the sector loan period, a smaller overall investment would have been made in fundamental level education and expenditures would have begun to taper off at lower levels. Information shown in Table 8 suggests this as probable given the obvious relationship between sector loans and the availability of resources

Table 6

All responsibilities of the Government of Brazil (MEC-PREMEN) as stipulated by the loan agreement document have been met satisfactorily.

The Financial responsibilities which refer to:

1) LA-Art. V - Section 5.02(a) "The borrower shall have transferred to MEC, during the federal budget year 1968, the amount in cash of not less than CR\$665,000,000, exclusive of matching contribution provided for the Program as set forth in Section 5.01 of LA;" and

2) LA-Art. V - Section 5.02(b) "Exclusive of matching contribution provided for in Section 5.01 of LA, Borrower during federal budget years of 1969, 1970 and 1971, shall progressively increase in real terms, using 1968 as a base year, as indicated by the General Price Index, its cash transfer to MEC;" were also met satisfactorily as can be verified by the information provided in the chart below:

GOB Federal Expenditures in Education  
1968-1974  
(in millions of cruzeiros)

Year	A.		B.		B/A
	GOB Total Expenditures Current Prices	1968 Prices	GOB Educ. Expenditures Current Prices	1968 Prices	
196	11,542.9	11,542.9	829.6	829.6	7.2
1969	18,651.5	15,445.8	1,170.5	969.3	6.3
1970	28,115.6	19,104.2	1,476.0	1,002.9	5.2
1971	27,051.6	15,361.4	1,896.5	1,076.9	7.0
1972	38,198.3	18,460.6	2,612.1	1,262.4	6.8
1973	50,766.9	21,241.9	3,165.4	1,324.5	6.2
1974 <sup>a</sup>	58,556.0	19,039.7	3,583.7	1,165.3	6.1

<sup>a</sup>Figures are estimates; estimates are usually lower than actual expenditures

Source: Reproduced from History and Final Report,  
Loan Agreement 512-L-078

Table 7

Education Expenditures in Percentages  
of Gross Internal Product, 1970-75  
(million Cruzeiros)

Year	Federal	State & Municipal	Total	Current Prices <sup>a</sup>	1-1975 Prices <sup>a</sup>	
1970	1546	3988	5531	6066	14,619	3.0
1971	2071	5412	7483	8452	17,134	3.0
1972	2780	7367	10,147	11,620	19,985	3.3
1973	3737	9867	13,604	15,853	23,462	3.4
1974	5416	10,378	15,794	19,226	22,110	3.6
1975	7639	15,373	23,012	28,249	28,249	--

<sup>a</sup>Column includes funds from private sector

Source: Education in Brazil, Fay Haussman and Jerry Haar 1977

**Table 8**

**BRAZIL**  
**Ministry of Education and Culture - Budget Spent**  
**(thousands of current Cruzeiros)**

	1968	1969	1970	1972	1975	1976
Ministry Budget	821,760	1,128,075	1,337,094	2,983,775	8,469,076	10,241,717
(Education only)				(2,612,073)	(6,949,831)	(10,120,183)
%Annual Change		37.3	18.5	61.5	61.3 (55.3)	20.9 (45.6)
Grades 1-4	50,165	111,417	129,987			
%Annual Change		122.1	166.7			
Grades 1-8				500,947	1,032,406	1,087,294
%Annual Change					35.3	5.3
Secondary				253,122	958,528	1,081,604
%Annual Change					92.9	12.8
University	450,166	669,003	810,364	1,451,695	3,924,193	6,511,849
%Annual Change		48.6	21.1	39.6	56.8	65.9

Source: Compiled by author from Anuario Estadístico do Brasil, various years

**Table 9** Public Expenditures on Education By Budgetary Source  
And Administrative Level Selected Years, 1960-1964

(billions of 1974 Cruzeiros; percentage)

Source, Level Budgetary	1960	1965	1970	1974	Percentage of total expendi- tures (row. (8))	
					1960	1974
(1) Federal	1.3	2.6	3.1	4.3	33	22
(2) State	2.3	3.8	7.1	12.5	59	63
(3) Municipal	0.3	0.4	1.3	2.1	8	11
(4) (1)+(2)+(3)	3.9	6.9	11.5	18.9	100	95
(5) FNDE <u>a/</u>	-	-	-	0.8		4
(6) MOBRAF	-	-	..	0.1		1
(7) (5)+(6)	-	-	..	0.9	-	5
(8) (4)+(7) (All sources)	3.9	6.9	11.6	19.8	100	100
(9) GDP	240.6	312.2	454.5	719.5	--	--
(10) [(8)/(9)]x100	1.6	2.2	2.6	2.8	--	--

**Notes:**

a/ Stands for Fundo Nacional de Desenvolvimento da Educacao (National Education Development Fund).

.. indicates less than 0.1 billion.

- indicates zero: programs not yet in operation.

-- indicates not applicable.

Source: Alberto de Mello e Souza, Os Gastos Publicos e Privados com a Educacao Formal no Brasil, IPEA, 1977, except GDP for 1965-1974, Conjuntura Economica 31:7 (July 1977) p. 90.

for fundamental level education during the 1970-75 period and the subsequent drop thereafter which is nevertheless paralleled by a continuous increase in federal contribution of university education.

\* However, judging a sustained commitment to educational development on the basis of federal expenditures overlooks the fact that a shift in proportion of funding provided for fundamental level education was one of the intended impacts of the sector loan program and the educational reform itself. Strengthening the planning and administrative capabilities of the state secretariats of education and encouraging states to increase their education allocations were the twin bases of strategy towards this end, one which had been articulated and reaffirmed in legislation ever since 1961. Accomplishment of this objective is reflected in World Bank figures which indicate that while the federal government's share of public expenditures for education dropped from 33 percent in 1960 to 22 percent in 1974, the states' proportion rose from 59 to 63 percent, municipal shares from 8 to 11 percent, and new sources of funding through other agencies were added (Table 9).

### Construction

*impacts*  
\* In terms of numbers, the 280 schools constructed under the two loans were but a fraction of the approximately 146,000 already available for grades 1-8 in 1968 or even of the 34,600 which were added by 1974. According to AID sources, impacts in this area were instead related to the nature of the schools as models and to the setting of new standards for construction products as well as processes. ESL I generated 16 ginasio designs which could be adapted for use throughout Brazil and established demonstration schools, which were both functionally designed and adequately equipped, in the capitals of all departments. ESL II was less involved in direct establishment of schools, but it did make designs available for multipurpose fundamental and secondary schools. Construction standards and processes developed under the two loans were incorporated by state secretariats to be followed in other construction programs. Impacts were already cited for local communities where construction standards were raised and related infrastructural improvements (water, electricity, access) were made. At the same time, the use of private construction firms generated new relationships between the education and private sectors. The latter benefitted by acquiring capabilities in efficient, quality educational construction as well as from employment generated. } \*

*confirm.*  
Another impact of the integrated construction carried out under ESL I and ESL II was its subsequent adoption by the World Bank which continued that approach in the strengthening of fundamental and secondary education (including the ginasio polivalentes) in eight states in Northeast Brazil.

Opinion about the impact of the schools constructed was divided among those interviewed. Some felt that they were definitely centers of better teaching and learning. Others felt that the schools had lost their potential as models because they were too costly to be replicated and that their strong differences from other Brazilian schools resulted rather in their evolution toward the latter.

## Teachers

Combined figures for persons trained in PABAEE, SUDENE/AID, ESL I and ESL II total about 60,000, including teachers and administrators and other staff. Teachers alone numbered almost 890,000 in Brazil by 1974, so that as a maximum, some seven percent of teachers may have been directly influenced by training provided with AID resources. The fact the training was given largely to teacher educators suggests that through the multiplier principle, a great deal many more teachers were influenced.

A special concern of teacher training was the certification of "lay" teachers. In 1960, only 54 percent of all teachers in Brazil were certified graduates of normal schools. By 1974, that figure had increased to 66 percent, over a base which had itself grown by almost 300 percent! As is shown in Table 10, increases in both the number of teachers and the number of certified teachers were stronger in what have been termed for purposes of this review "project states" than in Brazil as a whole.<sup>4</sup> Figures for individual project states show that increases were stronger in some. Specifically, greatest change occurred in most Northeast states, Goias and Rio de Janeiro, something which suggests that the growth was "catch up" and that above average growth rates in these states is as much a function of an already superior situation in most other states. In contrast, increases in the number of certified teachers was above average in 12 of the 16 project states, almost all of which still counted with at least a third of their teachers as lay or uncertified.

## Enrollments

To determine whether impacts could be perceived through enrollment figures, these were collected for three years--1960, 1968 and 1974--and examined in two periods--1960-68 and 1968-74. Figure 6 shows that the population enrolled in grades 1-8 grew from 54 percent of the 7-14 year old population in 1962 to 86 percent in 1974. It also depicts that change as distributed across the three regions of Brazil, showing that both the Southeast and the Frontier states increased their enrollments at a faster rate than did the Northeast.

Figure 7 breaks down the enrolled population into those enrolled in grades 1-4 and those enrolled in grades 5-8. The distinction which thus emerges within the overall growth pattern is that growth at the 1-4 level was more rapid in 1960-68 and at the 5-8 level in 1968-74. Again, increases were sharper in the areas outside the Northeast.

What was the situation in project states? Table 12 reports enrollments and percentage increases calculated for 16 project states, i.e., those affected by SUDENE-AID (9 states), ESL I (4 states) and ESL II (7 states). Here, impact in the Northeast is shown to have been somewhat stronger at the 1-4 level in the 1960-68 period which coincides with the greatest efforts made under the SUDENE-AID agreement. The relationship of those inputs to enrollment growth is again marked by the fact that in the later 1968-74 period, the growth rate in the Northeast fell to match that of the nation as a whole (see Figure 8).

**Table 10**

**BRAZIL**  
**Numbers of Teachers, Certified Teachers,**  
**and Teachers in Rural Areas, 1960 and 1974**

State	1960			1974		
	Teachers	Certified	Rural	Teachers	Certified	Rural
Alagoas	2612	1016	1052	8929	4977	7800
Bahia	12,067	7098	4101	51,526	33,272	46,347
Ceara	9510	2582	4726	39,040	18,880	35,643
Maranhao	3054	770	1440	17,199	6837	15,358
Paraiba	4498	973	2167	17,766	6171	16,003
Pernambuco	9745	4196	4215	35,684	20,650	30,056
Piaui	2102	769	952	13,747	6414	12,022
Rio Grande do N	3609	500	1827	13,299	4871	11,692
Sergipe	1917	483	786	6246	2723	5391
Minas Gerais	31,233	17,437	10,861	98,492	62,518	87,531
Espirito Santo	4533	2720	2558	16,370	11,106	14,470
Rio Grande do S	29,848	13,124	13,595	85,147	56,518	71,356
Goiias	4947	1328	1753	23,447	10,074	19,738
Parana	17,511	4712	6623	64,410	34,542	53,534
Rio de Janeiro	11,333	5223	3725	96,292	74,736	81,608
Santa Catarina	9035	3467	5959	28,239	17,585	23,154
<b>BRAZIL</b>	<b>225,569</b>	<b>122,743</b>	<b>85,034</b>	<b>887,424</b>	<b>584,433</b>	<b>196,841</b>

With the focus on expansion and improvement of 5-8 level education in four states under ESL I during 1970-74, a comparatively more favorable growth rate might be expected in those states. However, while ESL I states did show a slightly more intense growth than "Northeast" states, they did not progress as rapidly as ESL II states did at the 5-8 level in 1968-74. The merely "average" situation in the ESL I states (28 percent of the population; 25 percent added enrollments) should not be allowed to obscure the magnitude of what was accomplished in those states, i.e., (enrollments more than doubled in a period of six years.) Moreover, the lack of significant differences for states involved in the sector loan program rather illustrates the sectoral nature of the initiatives made. Loan monies were indeed targeted to specific states, but they were planned and administered as an integral part of a general program for the development of fundamental level education throughout the country.

insert

Table 11

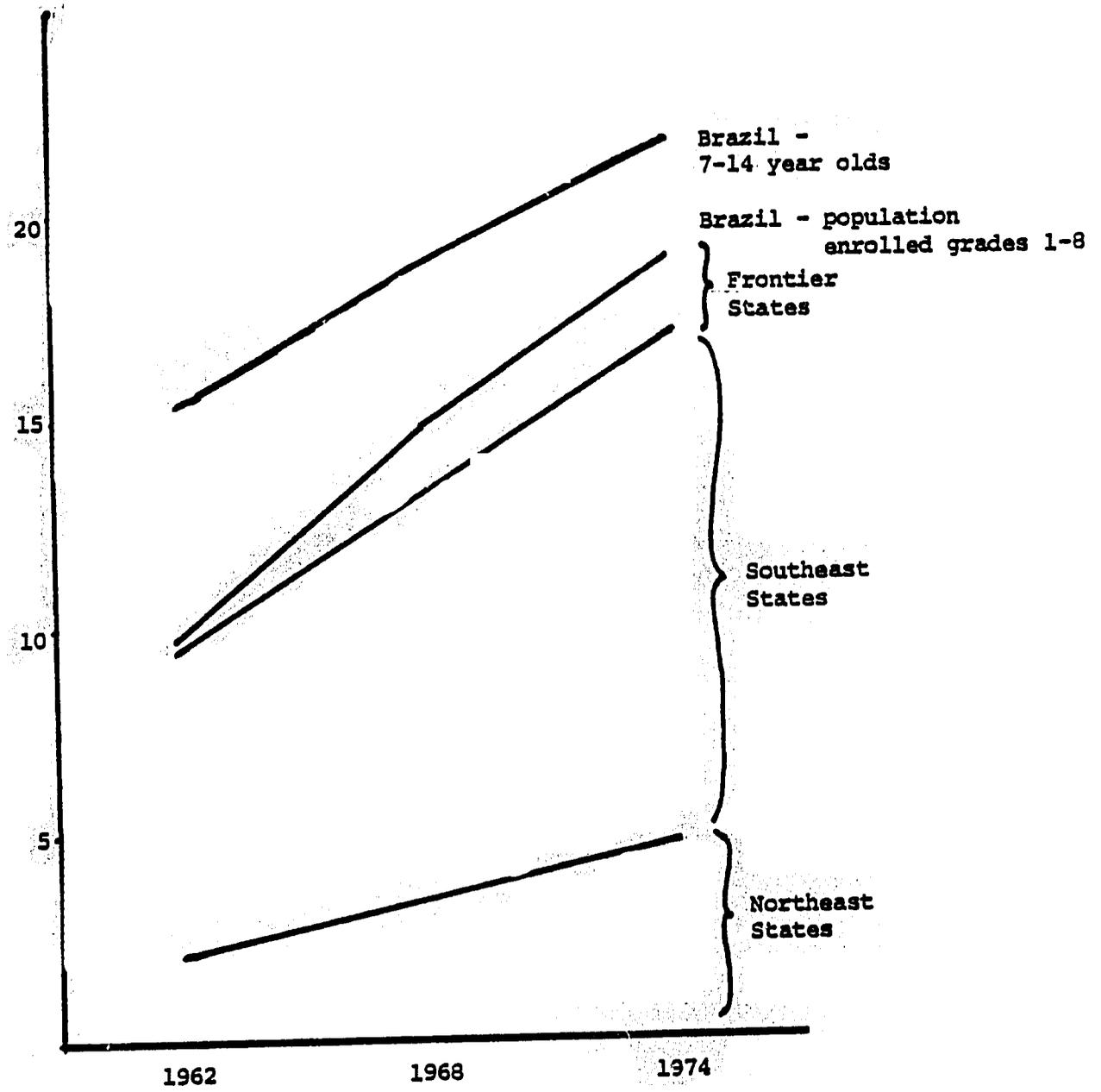
**BRAZIL**  
 Population in Ages 7-14 and Enrollment in Grades 1-8, By Region  
 Selected Years, 1951-1972 (Millions of Students and Relative Figures)

	A. Population in Ages 7-14		B. Enrollment in Grades 1-8		B/A %
	#	%	#	%	
<u>1955</u>					
Brazil	11.5	100.0	6.2	100.0	53.8
Northeast	4.1	35.9	1.4	22.5	33.7
Southeast	6.6	56.8	4.4	71.2	67.5
Frontier	.8	7.3	.4	6.3	46.1
<u>1962</u>					
Brazil	15.2	100.0	9.6	100.0	63.2
Northeast	5.1	33.6	2.1	22.1	41.6
Southeast	8.9	58.4	6.8	70.6	76.4
Frontier	1.2	8.0	.7	7.3	57.5
<u>1968</u>					
Brazil	18.5	100.0	14.3	100.0	77.5
Northeast	5.9	31.8	3.4	23.8	57.9
Southeast	10.9	58.9	9.7	67.5	88.8
Frontier	1.7	9.3	1.2	8.7	72.2
<u>1974</u>					
Brazil	21.7	100.0	18.6	100.0	85.8
Northeast	7.0	32.2	4.7	25.1	67.0
Southeast	12.4	57.4	12.2	65.5	97.8
Frontier	2.3	10.4	1.8	9.4	77.7

Source: Adapted by author from World Bank, Human Resources Special Report 1979

Figure 6

Population Enrolled in Grades 1-8 in Relation to  
7-14 Year Old Population and By Region



See Table

Figure 7

Enrollment Growth in Fundamental Level Education for Brazil as a Whole, 1960, 1968, 1974.

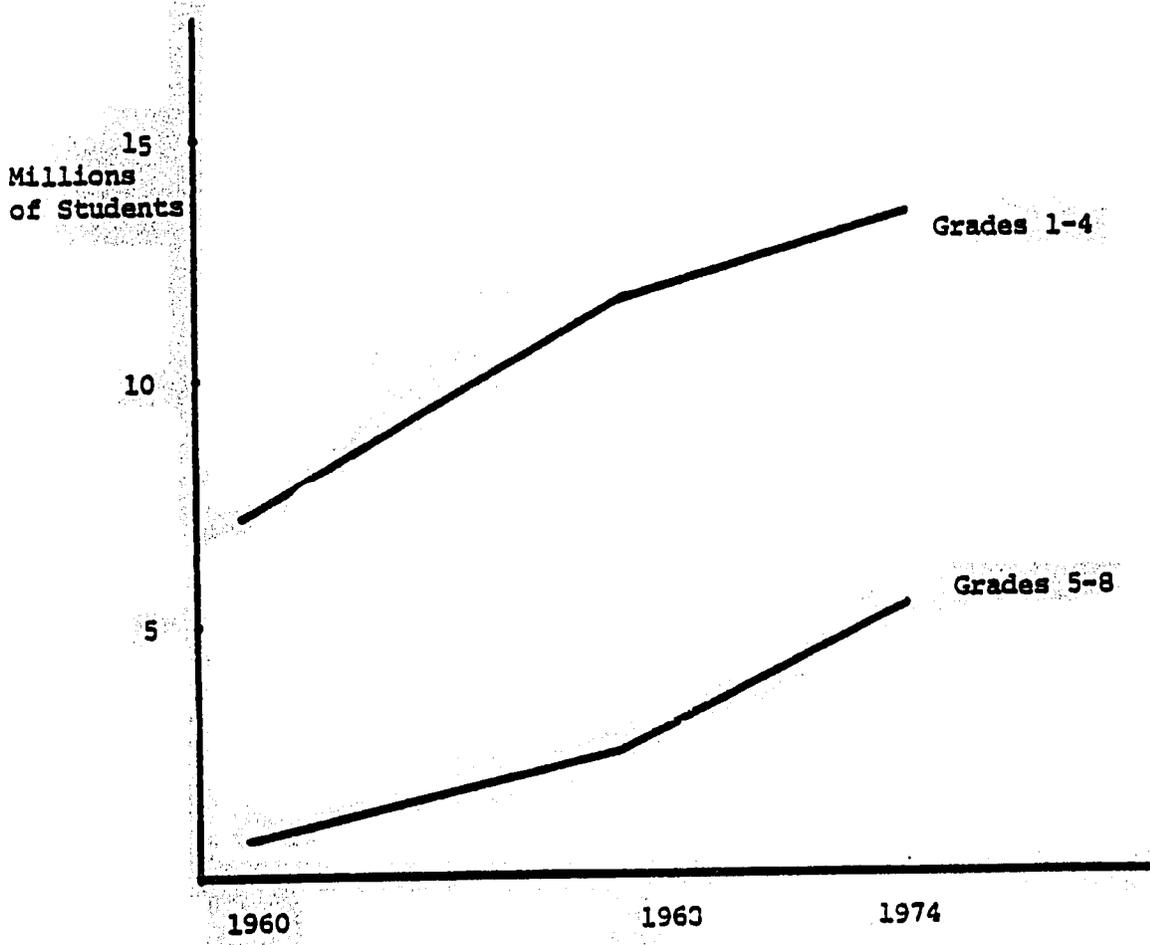


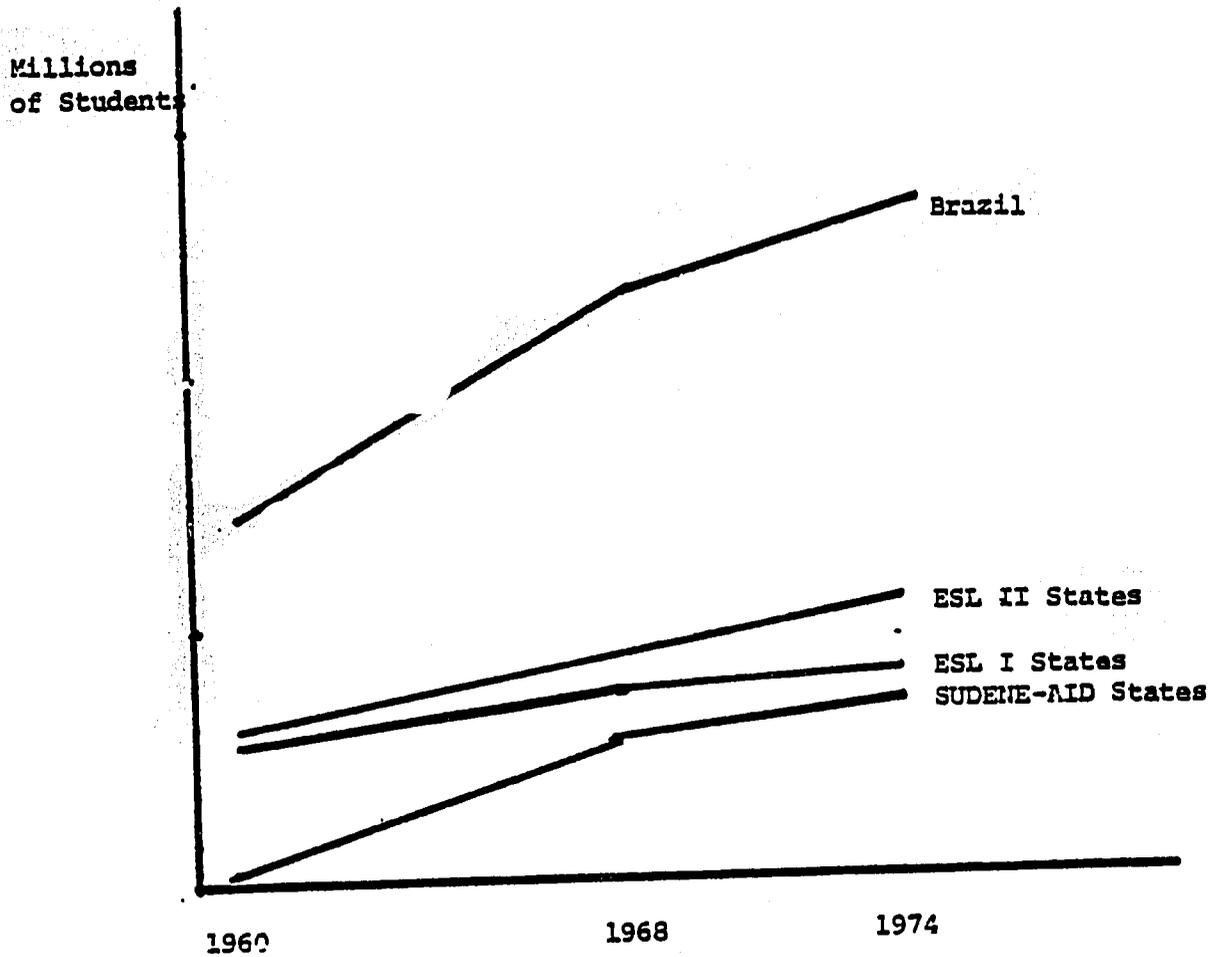
Table 12

BRAZIL  
Enrollment in Grades 1-8,  
1960, 1968, 1974  
(thousands)

State	Grades 1-4			Grades 5-8		
	1960	1968	1974	1960	1968	1974
Alagoas	92.3	171.3	187.4	8.9	22.2	43.8
% Change		86	9		149	97
Bahia	422.6	733.9	961.4	40.5	107.9	240.8
% Change		74	31		166	123
Ceara	275.8	418.7	474.0	24.1	60.8	125.9
% Change		52	13		152	107
Espirito Santo	166.7	233.2	276.7	15.6	47.8	106.7
% Change		40	19		206	123
Goiias	173.4	392.0	523.6	15.3	57.4	157.9
% Change		126	34		275	175
Maranhao	108.6	310.4	379.7	8.6	31.6	93.4
% Change		186	22		267	196
Minas Gerais	1146.3	1798.2	1926.8	115.0	310.1	576.8
% Change		57	7		169	86
Paraiba	147.9	249.6	322.6	12.3	35.8	78.3
% Change		69	29		191	119
Parana	398.6	907.3	1056.1	50.5	149.9	371.6
% Change		128	16		197	148
Pernambuco	364.4	600.1	696.3	40.2	96.2	220.1
% Change		65	16		139	129
Piaui	79.9	201.4	300.5	9.0	22.9	52.1
% Change		152	49		154	128
Rio de Janeiro	373.4	650.9	1167.2	51.6	135.3	601.4
% Change		74	79		162	344
Rio Grande do N	130.9	200.8	256.4	8.5	24.0	68.0
% Change		53	28		182	183
Rio Grande do S	760.8	1089.7	1025.4	80.5	197.6	475.4
% Change		43	- 6		145	141
Santa Catarina	331.0	449.2	485.2	21.6	76.0	206.7
% Change		36	8		252	172
Sergipe	70.4	98.5	139.8	6.8	15.8	32.8
% Change		40	42		132	108
BRAZIL	7458.0	11,943.5	13,483.6	910.3	2404.6	5277.2
% Change		60	13		164	119

Figure 8

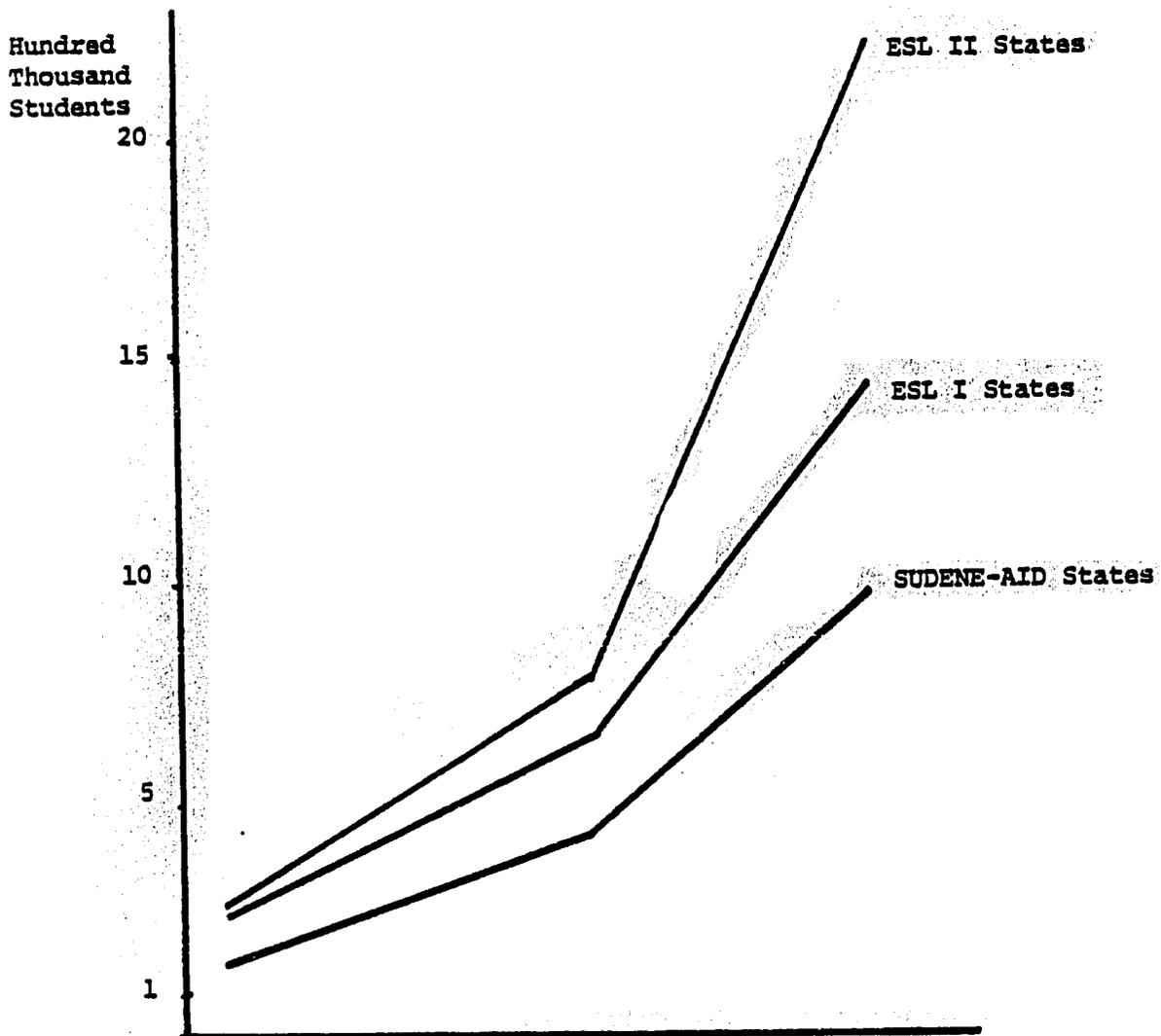
Grade 1-4 Enrollments in Project States



	1960	1968	1974
SUDENE-AID	.2	2.9	3.7
ESL I	2.5	3.9	4.2
ESL II	2.7	4.5	5.4

Figure 9

Grade 5-8 Enrollments in Project States



	1960	1968	1974
SUDENE-AID	158.9	417.2	955.2
ESL I	251.6	654.4	1399.7
ESL II	283.8	773.2	2159.0

### Urban-Rural Equity

\* Recalling earlier attempts to accelerate educational development in the Northeast region, one of the most depressed areas in all of Latin America, it appears that equity may have been a priority which was virtually abandoned by ESL I and ESL II. Under these loans, states were chosen for their planning and investment capabilities rather than by level of need. Acceptable four-year plans and commitments to increased levels of resource provision were required as bases for entering into loan agreements. It is not surprising then that three of the four states which participated in ESL II were among those with the highest average per capita incomes and degrees of urbanization in the country; 85 percent of the sites where ESL I schools were actually built had predominantly urban populations. The fact that the loans were designed before the Congressional mandate that USAID programs aim to make their greatest impacts on the rural poor majorities exempts them from being judged strictly against a rural impact or equity criterion. Nevertheless, it is important to know what the impact on the rural poor has been.

A General Accounting Office report (written after the Congressional mandate) faulted the AID program for not contributing to improved access for the rural population and Hutchinson et al. cite the issue as an example of AID's failure to question Brazilian priorities. This author's conclusion, after reviewing documentation and interviewing AID personnel, is that Brazilian priorities were not questioned because they were in substantial agreement with those of AID. Today, the outcome of the program followed is only partially visible in sources available. By 1974, in a national population that was 40 percent rural, only 28 percent of enrollments in grades 1-8 were in rural areas. Comparative data which might reveal trends towards or away from equity are not available, but Table 13 below shows that the rural to urban ratio in education has dropped at about the same rate as the rural/urban composition of the entire population. The figures are not exactly comparable (see note to the table), but they do suggest that one element of the transformation towards a more urban society might be a stagnation, if not real deterioration, in rural areas at least from the standpoint of educational opportunity. Other data show that the number of schools in rural areas in 1974 was 76 percent of all grades 1-8 schools, up from 72 percent of grades 1-4 schools in 1960. Even though the percentage of teachers in rural areas fell from 38 percent in 1960 to 22 percent in 1974, the pupil-teacher ratio dropped from 1:30 to 1:28, though it still lagged behind the national pupil teacher ratio which fell from 1:28 to 1:22. The general picture is that educational conditions in rural areas have improved slightly, but far less than in urban areas, at least through 1974.

Table 13

		<u>Enrollment</u>	<u>Teachers</u>	<u>Schools</u>
Total	1960	6,403,991	225,569	95,938
	1974	19,286,611	887,424	180,915
Rural	1960	2,532,046	85,034	69,419
	1974	5,438,718	196,841	137,380

NOTE: 1960 figures refer to Grades 1-4; 1974 figures to Grades 1-8

### The Sector Loan Approach

Both documents reviewed and persons interviewed emphasized that the purpose of the sector loans was to stimulate and make possible the development of fundamental level education sought by the Brazilian government and educational establishment. While the financial resources contributed by USAID were estimated at just 15 percent of what was supplied by Brazil, the consensus is that the cooperative efforts represented in the sector loans enabled an educational development program to be orchestrated in a way that surpassed what might have been realizable through smaller, independently conceived and executed projects, especially within a relatively short time frame. Hutchinson et al. coincide with observations that the sector loan program in Brazil was a critical factor in catalyzing both the level of maturity achieved by the educational system and the speed with which that maturity was attained. But these authors also raise questions about the economic and political aspects and the long term impact of large scale lending.

As noted in the introduction and indicated in Tables 14 and 16, the education programs were part of a much larger lending package. Moreover, while sector lending was aimed at sector improvement, it was also a mechanism designed for balance of payment purposes. But, as Hutchinson et al. point out, there is no explicit analysis nor monitoring of impacts in terms of the larger economic and political picture. Stronger critics of the Brazilian "miracle" have noted, however, that "borrowing for development" had by 1979, saddled Brazilians with the largest foreign debt held by any developing country (41 billion dollars) and one which was skimming 60 percent of the top of export earnings and contributing to a 40 percent inflation rate.

The issue deserves more competent examination than is possible here, but must definitely be considered as part of a review of impacts.

impact \*

### Final Remarks

Documentary and individual sources consulted substantiate a close relationship between AID inputs and the rapid educational development that occurred in Brazil during the 1960s and early 1970s. Given the rapid transformations taking place in Brazil during the period and the strong commitment to and heavy investments made in educational expansion and improvements by Brazilian sources, AID contributions were those of a co-adjutor rather than an initiator. While it could hardly be concluded that what occurred would have been impossible without AID inputs, there seems to be a broad consensus that those inputs provided an important leverage and buttress without which the process would have been slower and more fragile.

However, the picture of impacts provided by available sources is limited. Little documentation is available after 1975, even though much of the real impact of the sector loan program (and Brazil's general education reform) would have occurred since then. Interviews with persons locally accessible provide only piecemeal, largely unverifiable information. Neither source offers an adequate understanding of the quality (as opposed to the quantity) and dynamics of what has occurred. An adequate assessment of impact requires careful onsite research. In this author's opinion, that research should not only seek to update and expand information and verify interpretations. It should also pursue candidly and critically some specific areas of concern identified in the course of this paper. These are presented with the following questions.

Planning and Administration. Are state secretariats of education currently able to assess and respond to the particular educational needs of their populations? What constraints are involved?

Were "improvements" in planning and administrative capabilities such vis-a-vis the loan program and the criteria of international donors or do they merit that label in the face of requirements for the ongoing development of an appropriate Brazilian system? Have planning techniques and relationships been adequately adapted to Brazilian realities and modes of operation?

Is there substance to the claim that U.S. involvement may have delayed or distracted Brazilians from generating a more vital scheme of educational development or one which might have been more widely supported?

Do state secretariats enjoy an effective autonomy? How much do capabilities vary from state to state? Why? With what consequences?

Do state secretariats and entities specialized in educational planning/administration possess a research and development capacity sufficient for the continued improvement of the education sector? Have planning/administration operations been reduced to routine application of procedures defined at an earlier period?

Have individuals trained for sector work remained in the sector? Have they been pushed or pulled to other sectors?

Financial Resources. What has been the general trend in financial support for education at the 1-8 level since 1974 and what are the explanatory factors? Has the recomposition of financial support for fundamental level education (i.e., away from federal, towards increased local contributions) proved effective from the standpoint of equal opportunity? Are differences in quality and availability of education widening among states?

Have State and municipal governments been able to sustain the level of resource provision attained by 1974? Have they been able to maintain and utilize financially the innovative structures, standards and operations set in the context of the sector loans?

Are sufficient resources available or obtainable to continue meeting the demands of the educational populations not yet served by the system?

In retrospect, how appropriate and well-aimed were investments made with sector loan monies?

Construction. Have designs generated in ESL I and II proved useful? Have procedures and standards for construction associated with the loans been maintained? improved? deteriorated? Have schools and designs proved appropriate by both educational needs and efficiency as well as community standards?

Have schools constructed as models been well-maintained? Replicated? With what adaptations and in what conditions? Who uses the schools constructed under ESL I and ESL II??

Has school construction by the private sector continued? What lessons have been learned by a) the education sector and b) the construction sector?

To what extent have the polivalentes remained true to their original conceptualization in combining academic and practical training? What has been the nature of adaptations which have occurred? For what reasons have they occurred? How successful have they been? Have the polivalentes served as models (whether in initial or adapted form)? Have they emerged as exceptional schools? By what standards (use, outputs, approach, facilities)?

Teachers. Have reforms in reward system (pay scale, regularity of pay, promotion opportunities) been implemented and updated? What are urban/rural variations?

Has training given through sector loan programs prove useful?

Are preservice programs offering required competencies? Are inservice programs available, helpful, utilized? Does the inservice/supervisory

Students and Enrollments. To what extent is fundamental education approaching universal access? Which groups are not being served? Are there indications that unmet and future demands will be met? In what time frame? With what constraints and critical factors?

How smooth is the flow through the system at each grade level? What changes have taken place in dropout and repeater rates (by urban-rural, social class, sex, type of school--public, private, central, feeder, etc.)?

Sector Loan Strategy. In retrospect, was the strategy a good one? From the standpoint of educational development? From a political standpoint (both internal to Brazil and for U.S.-Brazil relations)? From an economic standpoint (did rapid, short term accomplishments prove too costly for sustained development)?

Overriding issues. Questions of equity, appropriateness, quality, utility and institutionalizability should be raised and examined with regard to all the outcomes of the sector loan and educational reform program.

What are the trends in both availability and quality of education across location (region, urban-rural) and social class? What are they key factors shaping those trends and how are they related to the sector loan program? Can negative trends (if they exist) be corrected within the present system or does correction require changes in the system itself?

Is education in rural areas conducive to rural development? To individual mobility?

In general, how well does schooling prepare students for society? Are school-leavers unduly penalized? Are graduates in specialized areas able to find jobs and function well in them?

Were the targets set, the strategies adopted, the outcomes produced appropriately "Brazilian"? Too "Northamerican"? Did they succeed in establishing conditions which are leading to an improved and equitable society or have they perhaps introduced new strains or contributed to the sharpening of contradictions in Brazilian society?

Have the curricula designed proved relevant to the needs of the sociocultural and economic groups to be served?

How well-utilized are the various programs, skills, techniques, equipment and materials promoted?

In general, which outcomes have proved institutionalizable? Did they require/undergo adaptation in the process? How satisfactory are the final results? For what purposes and to whose benefit?

Finally, a field-based assessment of impacts yielded in the Brazilian education sector in conjunction with AID participation should constitute an invaluable case study. It would provide AID with the opportunity to review a program built and carried out through systematic efforts, with strong cooperation and commitment and in favorable if challenging local conditions. While that context may occur rarely in developing societies, it is a good one in which to check the correctness of assumptions and strategies which shaped the programs and to evaluate the nature itself of educational development being advocated in Latin American and many other developing countries.

## NOTES

1

Posing the two regions as extremes is an oversimplification. In the Northeast, there are some comparatively well-developed pockets and some of the most severe slums in Latin America can be found in the South.

2

This did not in fact happen. Ceara and Pernambuco were the only Northeast states selected for the education sector loan program. Note discussion on Urban-Rural Equity.

3

The History and Final Report for ESL II mentions more than 33,000 persons trained as "unplanned outputs" and some 28,000 in another table which lists outputs in training of human resources. The author has not yet verified whether the second figure should be understood as included in or additional to the first. To avoid overestimating outputs, the first figure alone has been used here until further checking can be done.

4

"Project states" refers to those which participated in the first and second education sector loans, i.e., ESL I = Bahia, Minas Gerais, Espirito Santo and Rio Grande do Sul; ESL II = Ceara, Goias, Parana, Pernambuco, Rio Grande do Sul, Rio de Janeiro and Santa Catarina; the earlier SUDENE-AID states are also included--Alagoas, Bahia, Ceara, Maranhao, Minas Gerais, Paraiba, Pernambuco, Rio Grande do Norte, and Sergipe. Note that Rio Grande do Sul participated in both ESL I and ESL II, Bahia in SUDENE-AID and ESL II, and Pernambuco in SUDENE-AID and ESL II, so that the three groups overlap somewhat.

Appendix

Table 14 U.S. Dollar Assistance to Brazil Through 1975  
(millions of dollars)

Sector	to FY 61		FY 62-66		FY 69-75		Total	
	Grant	Loan	Grant	Loan	Grant	Loan	Grant	Loan
Agriculture	9.8	.2	26.0	42.2	13.7	40.0	49.5	82.4
Education	10.7		17.9	32.0	14.3	57.6	42.9	89.6
Health	15.1		10.8	37.0	1.5	31.1	27.4	68.1
Development Planning and Administration	2.5		5.5	3.5	5.2		13.2	3.5
Natural Resources	2.1		5.9	14.0	.6		8.6	14.0
Private Enterprise	.5		5.3	18.9	.8	40.0	6.6	58.9
Infrastructure	3.0		5.2	264.3	1.0	2.5	9.2	266.8
Labor	.9		2.6		3.0		6.5	
Housing	1.0		1.2		.6		2.8	
Audio-visual	.8		.2				1.0	
Various projects	2.3		.5				2.8	
Public Safety	1.3		5.8		2.0		9.1	
Food for Peace			1.7		1.4		3.1	
Partners			.2		.3		.5	
TOTAL	50.0 <sup>a</sup>	.2	88.8 <sup>a</sup>	411.9 <sup>a</sup>	44.4 <sup>b</sup>	171.2 <sup>b</sup>	183.2 <sup>ab</sup>	583.3 <sup>ab</sup>
(%Education)							(23.4)	(15.4)

Source: USAID/Brazil reports.

Table 15AID Dollar Assistance to  
Brazil Education Sector <sup>a</sup>

	to FY 1961		FY 1962-68		FY 1969-75		TOTAL
	Grant	Loan	Grant	Loan	Grant	Loan	
Elementary	1.3		6.1		.8		8.2
Secondary	2.3		3.5	32.0 <sup>b</sup>	1.3	50.0 <sup>c</sup>	89.1
Higher	6.0		7.4		8.3	7.6	29.3
General	1.1						1.1
Technical & Scientific Publications			.9		.4		1.3
Administration & Planning					3.5		3.5
TOTAL	10.7		17.9	32.0	14.3	57.6	132.5

<sup>a</sup>Millions of dollars; does not include amounts for technical support and some participant training

<sup>b</sup>Better classified as elementary; loan used for expansion of education at grades 5-8

<sup>c</sup>Loan for improvement of both fundamental and secondary level education

Source: USAID/Brazil reports.

**Table 16****USAID/BRAZIL Participant Training Grant Program - Number of Participants  
Summary FY 1962-74**

	<u>FY-62/67</u>	<u>FY-68</u>	<u>FY-69</u>	<u>FY-70</u>	<u>FY-71</u>	<u>FY-72</u>	<u>FY-73</u>	<u>FY-74</u>	<u>TOTAL</u>
<b>Agriculture</b>	728	189	144	141	60	50	78	39	1421
<b>Education</b>	344	177	275	287	259	273	253	55	1923
<b>Health</b>	175	39	53	24	16	2	3	-	312
<b>Pub. Administration</b>	188	108	85	125	173	17	22	46	764
<b>Natural Resources</b>	30	31	-	-	-	-	14	40	115
<b>Priv. Enterprise</b>	99	42	59	8	-	-	-	-	208
<b>Infrastructure</b>	101	36	50	41	51	-	-	25	304
<b>Housing</b>	75	59	49	-	-	-	-	-	183
<b>Labor</b>	383	125	85	90	10	-	-	-	693
<b>Public Safety</b>	324	59	37	45	46	34	-	-	545
<b>Food for Dev.</b>	43	10	15	17	19	5	5	-	114
<b>Partners Alliance</b>	-	6	-	-	-	-	-	-	6
<b>TOTAL ...</b>	<b>2488</b>	<b>881</b>	<b>852</b>	<b>778</b>	<b>634</b>	<b>381</b>	<b>375</b>	<b>199</b>	<b>6588</b>

Source: USAID/Brazil reports.

Table 17

BRAZIL  
GDP Growth Rates By Sector, And the Rate of Inflation,  
1948-76

Year	RATES OF GROWTH				Inflation Rate
	Agriculture	Industry	Services	Total	
1948	6.9	11.3	5.8	7.5	9.9
1949	4.5	10.3	6.0	6.6	10.7
1950	1.5	11.3	7.1	6.5	11.2
1951	0.7	6.4	9.9	5.9	12.0
1952	9.2	5.0	10.8	8.7	13.2
1953	0.2	8.7	-0.1	2.5	15.3
1954	7.9	8.7	13.0	10.1	21.4
1955	7.7	10.6	3.5	6.9	16.3
1956	-2.4	6.9	4.7	3.2	23.2
1957	9.3	5.7	9.0	8.1	13.2
1958	2.0	16.2	5.4	7.7	11.1
1959	5.3	11.9	1.2	5.6	29.2
1960	4.9	9.6	13.0	9.7	26.3
1961	7.6	10.6	11.9	10.3	33.3
1962	5.5	7.8	3.3	5.2	54.8
1963	1.0	0.2	2.9	1.6	78.0
1964	1.3	5.2	2.0	2.9	87.8
1965	13.8	-4.7	1.3	2.7	55.4
1966	-15.0	9.8		3.8	39.5
1967	9.2	3.0		4.8	28.8
1968	4.5	13.3		11.2	27.8
1969	3.8	12.1		10.0	20.3
1970	1.0	10.4		8.8	18.2
1971	11.4	14.3		13.3	17.3
1972	4.1	13.4		11.7	17.4
1973	3.5	15.8		14.0	20.5
1974	8.5	9.9		9.8	31.5
1975	3.4	6.2		5.6	32.7
1976	4.2	10.8		9.0	41.9
1977	9.6	3.9		4.7	44.1

Source: Reproduced from Human Resources Special Report,  
World Bank 1979

Table 18

STATE DATA ON INCOME, ITS DISTRIBUTION, FERTILITY  
AND INFANT MORTALITY, BRAZIL, 1970.

State	y	s	TF	IM	CBR	CDR
Piauí	344	15.2	7.7	124.9	493	147
Maranhão	433	15.2	7.0	118.0	479	145
Paraíba	487	10.7	7.8	163.1	507	192
Ceará	528	10.7	7.8	150.1	504	192
Rio G. do Norte	563	10.7	8.6	189.1	551	237
Sergipe	635	11.9	7.9	140.7	510	182
Alagoas	649	10.7	7.5	153.0	509	190
Bahia	717	11.9	7.4	118.1	493	153
*Para 1/	792	15.5	7.5	91.4	484	117
*Goiás	821	14.1	6.5	73.4	420	92
Pernambuco	900	10.7	7.3	163.0	497	200
*Mato Grosso	1068	14.1	6.8	80.1	445	102
Espirito Santo	1074	10.8	6.6	77.5	421	102
*Amazonas 2/	1113	15.5	8.3	93.3	531	122
Minas Gerais	1116	10.8	6.3	90.2	420	115
Paraná	1211	14.2	6.4	81.4	429	104
Sta Catarina	1452	13.4	6.4	68.3	409	93
Rio de Janeiro	1594	12.2	5.2	84.5	364	109
Rio G do Sul	2047	13.4	4.5	53.2	323	77
Sao Paulo	3385	11.7	4.1	73.4	314	98
Guanabara	4229	12.2	3.0	71.5	246	102

Symbols: y, income per capita, in 1970 CR\$ per year; s, income share of the bottom 40 percent of the (income earning) labor force; TF, total fertility rate; IM, infant mortality; CBR, crude birth rate; and CDR, crude death rate, both per 10<sup>4</sup>.

Sources: Demographic Census, 1970, for population by state; CE, 31(8), July 1977, p. 102, for value added by state in 1970; Langoni (1973), p. 161, for s, by regions, (states are assigned the value for s of the region to which they belong); TF, IM, CBR, CDR, kindly provided by T. Marrick.

Notes: 1/ It includes Amapá; 2/ It includes Rondonia, Acre and Roraima.

Frontier states are marked by an asterisk. The Federal District is not included.

**Table 19. General Data for States Which Participated in SUDENE-AID, ESL I or ESL II**

State	1975 Population (thousands)	Total	Urban	Density (km <sup>2</sup> )	Change Since 1960	Income Per Capita (1970)	Project Participation		
							I <sup>a</sup>	II <sup>b</sup>	III <sup>c</sup>
Alagoas	1786.2	1.7	42.4	64.6	41	649	2.5		
Bahia	8438.9	7.9	43.9	15.1	41	717	6.2	21.4	
Ceara	5111.6	4.8	42.7	34.8	53	578	6.2		4.2
Espirito Santo	1725.1	1.6	52.9	37.8	22	1074		13.8	
Goiás	4321.1	4.0	55.2	5.5	121	821			6.8
Maranhao	3330.0	3.1	28.4	10.7	34	433	6.1		
Minas Gerais	12,550.6	11.7	58.6	21.5	26	1116	1.2	32.2	
Paraíba	2675.1	2.5	58.2	47.5	33	487	4.2		
Parana	8449.0	7.9	37.9	42.5	97	1211			6.2
Pernambuco	5853.4	5.5	42.4	59.5	42	900			6.2
Piauí	1908.2	1.9	35.3	8.0	57	344	4.5		
Rio de Janeiro	10,400.2	9.7	90.6	240.2	206	1594			4.4
Rio Grande do Norte	1855.7	1.7	49.6	35.0	60	563	.3		
Rio Grande do Sul	7457.6	7.0	57.0	27.9	37	2047		23.0	5.2
Santa Catarina	3351.4	3.1	47.0	35.1	56	1452			8.7
Sergipe	992.4	.9	49.1	45.1	31	635	2.8		
BRAZIL	107,145.2	100.0	59.8		51				

a. SUDENE/AID; million dollars    b. First Sector loan; cruzeiros  
(includes counterpart monies)    c. Second Sector loan; million dollars

Source: Anuario Estatístico; World Bank; AID reports

**Table 20**

**Brazil**  
**Some Characteristics of Population By Region**

	-----SIZE-----			-----% URBAN-----			-Life Expectancy--		-Infant Mortality-	
	1960	1970	1980	1960	1970	1980	1950-60	1960-70	1960-65	1965-70
Brazil	70.1	93.1	124.1	45.6	55.9	62.1	49.6	55.7	113.6	101.4
Northeast	22.6	28.1	36.5	34.0	41.8	47.6	42.5	47.9	147.4	136.3
Southeast	42.0	56.4	74.7	52.9	64.4	73.5	56.1	62.8	95.5	82.0
Frontier	5.4	8.7	12.9	37.1	46.8	52.8	47.4	54.6	118.8	111.0
	Millions			Percent			Years		Per Thousand	

Source: World Bank, Human Resources Special Report 1979

Table 21

BRAZIL  
Adequately Nourished Children, By Region and Age Group<sup>a</sup>

Age Group	Thousands of Children				Percent of Age Group			
	Brazil	Northeast	Southeast	Frontier	Brazil	Northeast	Southeast	Frontier
Birth - 5.99 months	1,477	473	817	187	71.3	63.6	76.0	73.9
6.00 - 11.99 months	1,349	400	791	158	65.2	53.8	73.6	62.6
1.00 - 1.99 years	1,899	507	1,177	215	56.1	43.4	64.9	53.2
2.00 - 4.99 years	4,533	1,200	2,874	459	47.0	36.5	54.6	41.5
5.00 - 9.99 years	4,325	864	3,081	380	30.7	21.3	36.6	23.3
10.00 - 14.99 years	4,583	968	3,202	413	34.1	22.5	41.1	30.5
15.00 - 17.99 years	3,556	818	2,434	304	48.6	36.4	56.0	41.9
Total <sup>b/</sup>	21,723	5,231	14,376	2,116	41.7	31.6	48.3	37.0

a/ Adequately nourished is defined here as weighing above 90% of the median of the FAO/WHO standard distribution of weight by age.

b/ Totals may not equal sum of components due to rounding.

Source: IBGE, ENDEF: Consumo Alimentar; Antropometria, Dados Preliminares, 4 volumes (Rio de Janeiro: IBGE, 1977 and 1978) for body weight of Brazilian children; FAO/WHO, (1973) Energy and Protein Requirements: Report of a Joint FAO-WHO Ad Hoc Expert Committee, FAO Nutrition Meeting Report Series No. 52/WHO Technical Report Series No. 522 for the normal age-weight distribution; 1975 Population by age groups from "baseline" demographic projections contained in Annex I of this report.

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