

SECONDARY EDUCATION IMPROVEMENT PROGRAM
IN THE STATE OF PARANA

(BR-0167)

EXECUTIVE SUMMARY

BORROWER: State of Paraná

GUARANTOR: Federative Republic of Brazil

EXECUTING AGENCY: State Secretariat of Education (SEED)

AMOUNT AND SOURCE: IDB: US\$ 100 million (OC)
Local counterpart funding: US\$ 122 million
Total: US\$ 222 million

FINANCIAL TERMS AND CONDITIONS: Amortization period: 25 years
Grace period: 5 years
Commitment period: 4 years
Disbursement period: 5 years
Interest rate: variable
Inspection and supervision: 1.00%
Credit fee: 0.75%

OBJECTIVES: The overall objective of the Program is to increase the efficiency, equity, and efficacy of Paraná's public secondary school system, while strengthening the sectoral managerial capacity at local, regional and state levels.

In order to meet this objective, the Program supports a series of reforms -- the most far-reaching being the *creation of the general secondary school* with its own institutional identity and mission. This new secondary school will no longer offer an extensive and fragmented curriculum that is neither general nor technical. Rather Paraná's secondary schools will:

- a) provide a basic general curriculum, emphasizing language, mathematics, sciences and technology, all aimed at increasing students' cognitive skills;
- b) have distinct administrative, managerial and pedagogical characteristics, independent from technical-vocational schools and their curricula; and
- c) be institutionally and physically linked to grades 5 through 8 of primary education in order to maximize physical and human resources as well as to provide a smoother transition from primary to secondary education.

Another major reform supported by the Program is the transformation of *technical-vocational education* to a post-secondary level. By the year 2000, technical-vocational courses will only be offered at the post-secondary level at regional centers of excellence whose study programs, administration and other educational services will be defined by an institutional partnership with the private sector.

Finally, the Program would lay the necessary groundwork for future reforms regarding: (i) how the secondary education system is financed and (ii) the revision of the State Teacher Statute in order to accommodate a new Teacher Career Stream envisioned by the SEED.

DESCRIPTION:

The Program would comprise the following subprograms:

(i) *Quality Improvement in Secondary Education* (US\$156.7 million) which would enhance the quality of general educational services by financing: curriculum development, learning resources, training of educational professionals and incentives for improved teacher performance, as well as school rehabilitation and equipment, and the physical adaptation of Regional Teacher Training Institutes;

(ii) *Modernization of Technical-Vocational Education:* (US\$34.7 million) which would establish, on an experimental basis, Regional Technical-Vocational Centers in industry, services, and agriculture, in partnership with the private sector. These resources would be used to finance the modernization of technical-vocational curriculum, equipment, informatics and educational software, and the physical adaptation of existing facilities; and

(iii) *Strengthening Educational System Administration and Management:* (US\$20.3 million) would complement the institutional capacity within the SEED and its regional offices, by financing the development and installation of a strategic planning unit, evaluation system, management information system, curriculum development unit, pilot program for school autonomy, and general Program administration.

**ENVIRONMENTAL
CLASSIFICATION:**

The Environment Committee, at its meeting of January 30, 1996, classified this operation as a Category II, and recommended that environmental education be adequately treated in the revised secondary curriculum which has been incorporated into Program design (paragraphs 3.24 and 3.25).

BENEFITS:

Through the equitable provision of quality education, the State of Paraná will fulfill its long-term goal of preparing a well-educated populace able to meet the challenges of the 21st century both in the workplace and in the community. Specifically, by improving the quality of Paraná's secondary schools, the Program would enhance student achievement and retention, thereby reducing repetition and drop out rates and its concomitant waste of resources. The Program would further increase system efficiency, by strengthening management information, evaluation, strategic planning, and introducing greater school autonomy. Finally, the Program would increase social mobility for low income students that eventually reach the State's secondary schools.

In addition, through the Modernization of Technical-Vocational Education Subprogram, the State will provide a more advanced and relevant instruction to better meet Paraná's labor market requirements, particularly in light of the Mercosur initiative. And as many of these reform measures are only now being discussed at the national level, once implemented in Paraná, they would provide a critical demonstration effect for the rest of the country.

RISKS:

Among the reforms supported by this Program, the most politically sensitive issue involves *resistance to the likely changes to the secondary curriculum*. The SEED has minimized these risks by: maintaining an open dialogue with the educational community through design and execution of the Program; and promoting a greater understanding of the benefits of the reform through public information campaigns, workshops and seminars. In the case of the teachers, the Program includes a series of incentives, such as *Vale Saber*, *Vale Ensinar*, and Pedagogical Innovations, which encourage their participation in the development and implementation of the curricular changes.

Another related risk is the potential *weak response of the private sector* in relation to the Regional Technical-Vocational Centers. This risk is tempered by creating an umbrella organization, PARANATEC, whose specific mandate is to foster private sector participation in the definition of curriculum contents of the training courses provided by these Centers as well as their administration.

Close *inter-institutional coordination*, as required by the Program, could present a challenge to the SEED. In order to strengthen coordination, the Program would provide the necessary technical

assistance to the SEED, in particular to the Coordinating Unit.

**THE BANK'S
COUNTRY AND
SECTOR STRATEGY:**

The main elements of the Bank's strategy emphasize the needs to: (a) promote the reform and modernization of the public sector both at the federal and sub-federal levels; (b) support the process of economic opening, in part through the modernization of the productive sectors and also through the *Redução do Custo Brasil* initiative, whose objective is the rehabilitation and improvement of the nation's transport and port infrastructure; and (c) address socio-economic inequities and poverty alleviation by increasing the effectiveness of social spending and improving the targeting of social programs. In the latter instance, special support will be given to continued decentralization of the social sectors, in part through increased partnerships with the local community and civil society. At the same time, the traditional emphasis on basic sanitation and the environment are retained in the current Bank strategy.

The Program is fully consistent with the Bank strategy as well as with the Bank's mandate under the Eighth Replenishment as it would (i) improve social services on the grounds of equity and poverty alleviation, (ii) support general human capital development, (iii) increase effectiveness of education expenditures through reductions in system inefficiencies; and (iv) promote greater participation of the local community and civil society in the educational process.

**SOCIAL
CLASSIFICATION AND
POVERTY
TARGETING:**

As defined in paragraph 2.13 of the Eighth Replenishment document, this operation qualifies for meeting the objective of increased social equity as it falls within the traditional area of education. The Program does not, however, qualify as a poverty-targeted investment according to paragraph 2.15 of said document given that the benefits of the Program would accrue to all secondary students regardless of their income level (paragraph 4.26).

**SPECIAL
CONTRACTUAL
CONDITIONS:**

Conditions after loan signature:

- a. Within 120 days after loan signature, the Executing Agency will present to the Bank evidence that the Evaluation Commission for Pedagogical Innovations has been created and is operational (paragraph 2.9).

- b. Within 120 days after loan signature, the Executing Agency will present to the Bank evidence that the Textbook Commission has been created and is operational (paragraph 2.11).
- c. Within 120 days after loan signature, the Executing Agency will present to the Bank evidence that the Commission for the preselection of Training Institutions has been created and is operational (paragraph 2.16)

Conditions prior to first disbursement:

- a. For the Modernization of Technical-Vocational Education Subprogram only, evidence that the Regional Technical-Vocational Centers have been legally established (paragraph 2.23).
- b. Evidence that the Coordinating Unit of the Program has been established, with adequate organization and functions (paragraph 3.3).
- c. Signature of inter-institutional agreement between SEED and FUNDEPAR (paragraph 3.3).
- d. Enter into effect the Operating Regulations (paragraph 3.4).

Other contractual conditions:

- a. The executing agency will be required to submit to the Bank within the first 60 days of each year, the Annual Operative Plan together with the review of the quantitative and qualitative results achieved in the previous year.
- b. Loan contract would also include standard Bank's clauses to account for reports, audit financial statements, inspections, procurement of goods and services and evaluation.

**PROCUREMENT OF
GOODS AND
SERVICES:**

The threshold for international competitive bidding in this Program would be US\$350,000 for goods and US\$5 million for works (paragraph 3.15).

**EXCEPTIONS TO BANK
POLICY:**

- a. **Service Contracts:** In view of the large volume of consulting services required for the institutional strengthening of the SEED, its regional offices, and other participating institutions, it is recommended that the requirement for prior consultation with the Bank be maintained only for the selection and hiring of individual consultants in contracts equal to or

greater than US\$50,000 and equal to or greater than US\$100,000 for consulting firms. The Terms of Reference for both cases will be approved in advance by the Bank (paragraph 3.17).

b. **Guarantee:** The federal government will guarantee the loan, but this sovereign guarantee will cover only the repayment of the loan (including interest and fees), not the local contribution or any obligations to perform that are not by law within the purview of the federal government (paragraph 3.1)

I. FRAME OF REFERENCE

A. Brazil: Investing in Human Resources

- 1.1 More than ten years after the first of many economic stabilization and structural adjustment programs, Brazil has witnessed considerable change. Once plagued with soaring inflation rates, huge public sector deficits, and heavily protectionist trade policies, Brazil has made sound progress in liberalizing its trade regime, reducing its debt burden, containing inflation and downsizing the role of the public sector in productive activity. Solid macromanagement still commands strategic importance in the Brazilian government as it works to create an environment for continued economic growth. An essential part of this growth strategy is a more productive use of all available resources, in particular human resources. As a vital complement to a country's physical capital, investments in education have a direct impact not only on labor productivity and employment opportunities, but also on poverty reduction and more equitable income distribution.
- 1.2 Yet efforts to enhance Brazil's macroeconomic climate have not been met with adequate investments in human resources. Within the past decade, Brazil has concentrated on improving the access to, and quality of, primary education, while its secondary education system remains unequipped for producing the human capital needed for its future. With an average level of less than four years of schooling, Brazil compares in educational attainment with that of other Latin American countries with less than half the income (notwithstanding the differences in schooling quality). Over 32 million Brazilians over the age of 15 are illiterate -- the equivalent to 20% of the total population. And perhaps most striking, Brazil's gross secondary enrollment is 39%, falling well below levels in Uruguay and Argentina at 83% and 71% respectively, and only slightly above Bolivia's 34%.
- 1.3 This low level of educational attainment translates into labor market entrants without the basic skills required by Brazilian firms in order to gain competitiveness. This shortage of adequate skills prompted the creation of many stop-gap programs for both private and public sector workers who are functionally illiterate. Swelling enrollments in the national training services such as SENAI, SENAC, and SENAR 1/, may also illustrate the failure of the secondary education system to retain students and produce employable graduates. At the same time, these very institutions complain of weak numeracy and literacy skills of their incoming students which, in turn, limits the number of more advanced technical courses offered.

1/ *Serviço Nacional de Aprendizagem Industrial, Comercial and Rural.*

- 1.4 In addition to an unfulfilled potential in terms of its labor productivity, Brazil's low educational levels not only contribute to, but are also explained in part by, the large number of people living in poverty. The consequent differences in educational attainment largely explain the highly skewed income distribution in Brazil. In a recent evaluation, the World Bank found that "students repeating grades in Brazil are disproportionately from the lowest income deciles, making higher rates of repetition and drop-out among poor children a contributing factor to the perpetuation of a high degree of income inequality" ^{2/}. Furthermore, due to the poor quality of public education, private schools have emerged which tend to cater to children from a higher socioeconomic level, thereby expanding the gap between rich and poor.
- 1.5 Upon taking office in January of 1995, the current Administration formally recognized this nexus between education and growth and the urgent need for concrete action to improve the quality and equity of Brazil's educational system. These goals were articulated in the Government's "Ten Year Plan for Education for All". Subsequently, new legislation was drafted which, when approved, will dramatically affect resource allocation within the sector, and help raise the quality of Brazil's education.
- 1.6 The first piece of legislation involves the modification of the national education law, *Lei de Diretrizes e Bases da Educacao Nacional* (LDB), which governs all levels of education in Brazil. One of the most salient provisions of this legislation would permit greater flexibility in the organization of primary and secondary education, allowing for a clear separation between 1st and 4th grades from 5th and 8th grades. The second legislative initiative involves a new technical education law, which would: (i) require that all formal technical-vocational education be offered only at the post-secondary level, separating it entirely from general education; (ii) introduce short professional courses to prepare individuals for immediate entrance in the labor market regardless of one's academic background, and (iii) create incentives and mechanisms to encourage greater participation of the private productive sector in the financing and administration of technical educational services.
- 1.7 Finally, an amendment to the 1988 Constitution has been proposed which would require greater financial commitments on the part of municipalities in the provision of primary education. Should a municipality be unable to provide for a national minimum spending per student of US\$300 per year from its own revenues, the federal government would then transfer the necessary resources to reach that minimum. This amendment would greatly contribute to a more transparent, efficient and equitable distribution of resources throughout the country for the financing of primary education. As

^{2/} Paraná Basic Education Quality Project: Staff Appraisal Report, IBRD: Washington, D.C., June 1994, p.6.

a result, in the more developed states, this increased financing by municipalities, would allow for the reallocation of state funds within the education sector.

B. The State of Paraná

1. Socio-Economic Trends

- 1.8 With a per capita income of US\$3,288, considerably higher than the national average of US\$2,997, the southern State of Paraná enjoys one of the highest standards of living in the country. Access to social services such as water, electricity and sanitation is quite satisfactory. With a total population of 8.8 million, Parana ranks sixth among the most heavily populated states in Brazil. Over three-quarters of its inhabitants reside in urban areas, reflecting a dramatic rural-urban migration since the 1970s.
- 1.9 Parana is the fourth largest exporter in Brazil, accounting for approximately 6% of the national product. The State's growth strategy centers on identifying niches and areas of competitiveness within the context of greater trade liberalization among the Mercosur countries, while advancing industrialization and technological development. Studies show that Paraná's comparative advantage continues to lie in agriculture, although the service sector is becoming increasingly important to state revenues. Today, agroindustry and services account for 80% of Paraná's gross domestic product. As part of its growth strategy, the Government has identified five growth regions or *polos de desenvolvimento* (refer to Map) and is prioritizing public investment in those geographic areas.
- 1.10 In stark contrast to the State's overall level of development, of the total employed population in 1990 in Paraná, over 32% had either no formal education or less than 3 years of schooling -- which may indicate a potentially high percentage of functional illiterates. Nearly 40% of the employed population had 4 - 7 years of study; 12% had 8 - 10 years of schooling, and slightly over 17 had more than 11 years. Clearly, these low levels of schooling not only impede future earnings potential for the individual, but also constrain Paraná's competitiveness. Indeed, as the benefits of Mercosur begin to be realized, many expect the majority of wealth and population of Mercosur to be concentrated within the Sao Paulo-Buenos Aires axis -- placing Paraná in a favorable strategic position, particularly considering the State's excellent communications and transportation networks. Its education system therefore must be able to supply the required human capital to meet these challenges.

2. Educational Overview in Paraná

- 1.11 The State Government is the single most important provider of primary and secondary educational services, although municipalities, the federal government, and the private sector, to a lesser extent,

provide additional schooling opportunities. The State also supports tertiary education, complementing both a federal and private university. Public education at all three levels is free of charge (Annex I-1).

- 1.12 As in the rest of Brazil, only primary education (grades 1 - 8) is mandatory; and while almost universal in coverage (92.3%), it is lacking in quality. Repetition and drop out rates are high occurring generally around the fourth grade (20% and 11% respectively). Less than half of the students entering primary school in Paraná actually complete the eighth grade (47%), taking on average 11 years to do so, with many graduates taking as long as 14 years. Not surprisingly, such high repetition rates give rise to an acute overage problem which, in turn, affects the demand for regular secondary education. As a result, these individuals opt for adult education or *ensino supletivo* as they generally are quite older than the normal cohort. The State, with support from the World Bank, is addressing these deficiencies in the Basic Education Quality Program [*Programa de Qualidade de Ensino (PQE)*], as described in paragraph 1.37.

- 1.13 Paraná's secondary education system offers both general academic and technical-vocational tracks in 3 and 4 years respectively. Over 84% of Paraná's total secondary enrollment or 310,895 students were enrolled in the State's 738 secondary schools in 1995. Remaining schooling opportunities are provided in the following manner: slightly under 3% in both federally-supported technical schools, as well as the adult education, and less than 11% in private schools. Overall managerial responsibility for the secondary education system lies with the State Secretariat for Education [*Secretaria Estadual da Educação (SEED)*].

3. Secondary Education: The Challenges to be Addressed

- 1.14 With a program underway to improve its primary education system, Paraná turned its attention to the State's secondary schools. Quality problems and inefficiencies at the primary level are compounded by insufficient educational inputs in the face of a rapidly growing demand for secondary education. The challenges facing the secondary education system are outlined in the following paragraphs.
- 1.15 **Internal Inefficiency.** Net secondary enrollment is only 26% (of the 916,015 young adults between the ages 15-19 in 1995, 204,629 are actually in the system). Most of secondary school repetition occurs in grades 9 and 10, averaging 17% in each grade (1992-93). Over 20% of the students drop out in the first year of secondary school. Completion rates present an equally bleak picture with only 52% of the cohort completing secondary school, using an average of 4.67 years. In 1993, these repetition rates translated into a cost of nearly US\$5 million -- monies which the education system can ill afford to waste. Student flows showed that for every 1,000 students entering the system, an additional 161 spaces have to be generated to take up repeaters of the first year alone.

- 1.16 **External Inefficiency.** The lack of relevance of curricula, limited course offerings and outdated teaching methods result in external inefficiencies. In 1995, nearly 40% of the students were enrolled in general education, with the remaining students in technical-vocational education distributed as follows by economic sector: 1% in primary, 1.6% in secondary, and nearly 58% in tertiary, mostly in accounting and teacher preparation courses (89%). This distribution, however, does not necessarily reflect actual demand. Often students have no choice as only technical-vocational education is available at the post-primary level: particularly those courses which are not costly to offer--accounting and teacher preparation. Indeed, the 1996 enrollment figures reveal an increasing tendency towards general secondary education (with 49% of total enrollment).
- 1.17 Graduates of Paraná's public secondary schools are ill-prepared for higher education. In 1995, slightly less than half of the approved candidates for university entrance came from these schools. At the same time, nearly three-quarters of those approved (73.8%) were day students in either private or public schools. Given that the majority of public students attend school at night (68%), one concludes that a student in the public secondary system is at a disadvantage for passing the university entrance exam, known as the *vestibular*.
- 1.18 The public system is also not preparing its graduates for the labor market. The Secretary of State of Employment and Labor Relations (*Secretaria do Estado do Emprego e Relações do Trabalho*, July 1995) estimates that the lack of qualified professionals explains why only 36.5% of the vacancies in the public sector are filled. Moreover, in the two areas within technical-vocational education where students currently are concentrated, accounting and teacher preparation, the labor market is saturated. This reflects not only a mismatch in the mix of skills vis-a-vis the changing demands of a modern economy, but, more fundamentally, limitations in the core areas of language, math and scientific reasoning, which hamper the student's ability to be trained in new skills areas, outside the formal education system.
- 1.19 **Lack of adequate educational inputs** continues to plague Paraná's secondary schools. Most critical perhaps is the lack of qualified teachers, particularly in mathematics and the natural sciences. Despite the fact that nearly 80% of all secondary teachers are university graduates (*licenciados*), there may be little or no correlation with a teacher's effectiveness in the classroom. Outdated pedagogical practices still prevail despite a considerable amount of resources being devoted to teacher training. Textbooks are virtually non-existent as the State simply does not purchase books for its secondary schools; libraries and reference material are

severely lacking; and those schools which do have computers tend to use them for administrative purposes 3/.

- 1.20 Currently Paraná's secondary school year comprises anywhere between 180 - 200 days of classes, equivalent to 4 - 5 hours (45 minutes per class) of daily instruction. The teacher spends on average four hours in the classroom, but relatively no time is allotted for planning, preparation of projects and tests, and other non-teaching school-related activities. Moreover, the breadth of the current curriculum (12 different subjects) translates into a superficial knowledge of many different subjects.
- 1.21 Schools in Paraná are in poor physical condition. Not one school offering secondary education was actually built for that purpose. Indeed, of the 738 schools offering secondary education, only 29 schools do not involve primary school students at some point during the day. Nearly one quarter of these schools must accommodate students ranging in grades 1 through 8, as well as secondary school. Clearly, the physical space requirements for such a heterogenous group are difficult to be met under the same roof. While this arrangement may yield a greater utilization of the State's installed capacity, it hampers both student and teacher performance. Moreover, 63% of these schools have an enrollment of less than 400 secondary school students which may prevent them from offering a wide range of subjects, and may very well limit efficiency and effectiveness in terms of student learning. In the past, only classroom space has been expanded without making the necessary arrangements for ancillary services, restrooms, laboratories, libraries. One of the most salient conclusions of an analysis of nearly 80% of the total universe of school buildings, equipment and furniture in Paraná is the lack of maintenance, spending only about half of what is needed.
- 1.22 ***Inadequate Funding.*** One of most serious constraints facing Paraná's secondary education system is insufficient financing. In 1994, only US\$133 per student per year was spent in Paraná's secondary schools as compared to US\$237 and US\$2,631 per student at the primary and higher education levels, respectively. Of that figure, only US\$7.59 per student per year represents, non-salary recurrent expenditures, and only US\$3.69 for capital investment. Inadequate resources can be yet another source of inefficiencies as what is being spent is not fully maximized due to a lack of complementary inputs.
- 1.23 ***Institutional Weaknesses.*** Unfortunately, Paraná is not immune to the many problems afflicting public education systems the world over. Its secondary education system suffers from a weak administrative and managerial capacity, in particular at the local levels.

3/ The SEED reports that between 1991 and 1994, less than 4% of the total budget was spent on the purchase and maintenance of pedagogical material.

There is inadequate inter-institutional coordination among the various entities. And while efforts have been taken to streamline many of the SEED's activities, through the creation of 30 district offices [*Nucleos Regionais de Educação* (NRE)] and the Regional Councils for Educational Development [*Conselho Regional de Desenvolvimento Educacional* (CREDE)] whose 15 members include representatives from the community, industry, students, parents, and service organizations, in practice their functions are peripheral. Finally, the lack of permanent performance evaluation and reliable information systems precludes principals and teachers from being held accountable for educational outcomes. Data are not routinely collected and/or analyzed, synthesized or disseminated in ways which could be useful for decision making.

- 1.24 *Inequities.* It is important to note that children from low income families rarely complete primary school, with most of the dropouts occurring between the 3rd and 4th grades. Therefore, secondary education is beyond the reach for much of Paraná's low income population. Nevertheless, the university selection process accentuates the inequities at the secondary level in that the children from low-middle to high income families are competing for limited schooling places in the university. In 1995 nearly 40% of all families in Paraná earned up to 2 minimum salaries (or the equivalent of US\$200/month), yet from a range of up to 3 minimum salaries, less than 6% of students were accepted in the university. In the Federal University of Paraná (UFPR) and the Catholic University of Paraná (PUC) whose reputation for academic excellence is well established, the percentage of students coming from families with higher incomes is much higher.

4. Converting Policy into Action

- 1.25 Viewed as a forerunner in many development initiatives, the State of Paraná began a critical review of its educational system in the early 1990s. After undertaking the revision of its primary education system with support from the World Bank, the State embarked on a comprehensive assessment of its secondary educational services. As a result of this exercise, the State, in coordination with the IDB, identified a series of policy reform measures which would address the aforementioned weaknesses. These measures are briefly described below.
- 1.26 The most far-reaching reform is the *creation of the general secondary school* with its own institutional identity and mission. This new secondary school will no longer offer an extensive and fragmented curriculum that is neither general or technical. Rather Paraná's secondary schools will: a) provide a basic general curriculum, emphasizing language, mathematics, sciences and technology, all aimed at increasing students' cognitive skills; b) have distinct administrative, managerial and pedagogical characteristics, independent from technical-vocational schools and its curricula; and c) be institutionally and physically linked to grades 5 through 8 of primary education in order to maximize

physical and human resources as well as to provide a smoother transition from primary to secondary education.

- 1.27 Secondary schools will concentrate on providing students with a solid cognitive base which, in turn, would afford them greater choice upon graduation to either pursue a university education or specialized training. In other words, students in Paraná's secondary schools will "learn to learn" so that they will be more readily prepared to take advantage of new career opportunities throughout their lifetime. Moreover, in reinforcing a student's scientific and technological knowledge, the general secondary school forms an important nexus with technical and vocational training institutes in Paraná.
- 1.28 Consistent with likely changes in the federal law, all formal State-supported *technical-vocational education* will be offered only at the post-secondary level by the year 2000. Professional skills training which requires a solid educational background will allow for more precise, state-of-the-art instruction. Both students and teachers would compete for vacancies in regional centers of excellence located in the five growth regions of the State: Ponto Grossa, Londrina, Maringá, Cascavel and Guarapuava. Through the creation of a governing board which involves the participation of the three national training services, SENAI, SENAC, SENAR, the federal technical school, CEFET, as well as the national service for supporting small and medium-sized enterprises SEBRAE, the State hopes to encourage the participation of the productive sector in the management and financing of these schools -- that is, a *gestão compartilhada*. In doing so, the supply of training courses will respond to a real demand of the productive sector, thereby enhancing relevance of instruction and in turn, the future employment opportunities of its students. Moreover, one of the State's strategic objectives is to stimulate self-financing schemes such as selling technical services to the local community, as well as to encourage local firms to "loan" their professionals in order to teach at these Centers while continuing to pay their salaries. All teachers will be hired on a temporary contract through a competitive selection process. Therefore, the State would be able to gradually transfer the responsibility for this level of education to the private sector.
- 1.29 The State has recognized that the current level of *financing for secondary education* must be increased in order to sustain the quality enhancement envisioned in these reform measures. The State would carefully examine and explore its financing options, particularly in light of the proposed amendment to the Constitution as well as the new law regarding technical education. The Government has expressed its willingness to prioritize secondary education in the reallocation of those funds that could be available at the State level as a result of greater municipal financing for primary education.

- 1.30 In addition, the Government has expressed its intention to introduce measures which will allow universities greater freedom to generate revenues through the sale of services. These measures would allow the Government to eventually freeze the level of transfers from the State Education budget for higher education. Finally, the Government is actively pursuing its strategy of promoting partnerships with the private sector and the community at large in order to complement State resources for education.
- 1.31 The SEED is currently preparing a *Career Stream* for all primary and secondary school teachers as well as other educational professionals in the State system (*Plano de Carreira*). Dating back to 1976, the *State Teacher Statute*, would in turn require some modifications in order to accommodate changes introduced through the establishment of this Teacher Career Stream. Key elements of the Statute would include the introduction of merit-linked promotion, in conjunction with the already existing seniority-based promotion. As an initial step, promotion decisions would take into account evaluations of teacher training activities, and would then involve actual performance evaluations. Another important change would involve allowing the school directors to request transfers of those teachers whose performance is unsatisfactory. The teaching post would not be assigned to the school, but rather to the system as a whole.
- 1.32 Finally, the new Teacher Statute would permit professionals in the workplace or graduates of higher education institutions to teach in the classroom while receiving pedagogical training. As a result, the State would be more readily able to fill the void of mathematics and science teachers in the general secondary schools. This change would also allow the technical-vocational centers to provide more updated instruction relevant to what is actually going on in the workplace.
- 1.33 These reforms, coupled with a series of activities aimed at improving system management, are summarized in the Educational Strategy Statement signed by the State Secretaries of Education and Planning. And as many of these measures are only now being discussed at the national level, once implemented in Paraná, they would provide a critical demonstration effect for the rest of the country.

C. Bank Strategy in Brazil

- 1.34 The main elements of the Bank's strategy emphasize the needs to: (a) promote the reform and modernization of the public sector both at the Federal and sub-federal levels; (b) support the process of economic opening, in part through the modernization of the productive sectors and also through the *Redução do Custo Brasil* initiative, whose objective is the rehabilitation and improvement of the nation's transport and port infrastructure; and (c) address socio-economic inequities and poverty alleviation by increasing the effectiveness of social spending and improving the targeting of social

programs. In the latter instance, special support will be given to continued decentralization of the social sectors, in part through increased partnerships with the local community and civil society. At the same time, the traditional emphasis on basic sanitation and the environment is retained in the current Bank strategy.

- 1.35 The Program is consistent with the Bank strategy as well as with the Bank's mandate under the Eighth Replenishment as it would improve social services on the grounds of equity and poverty alleviation, among others, and support general human capital development. Specifically, it seeks to alleviate inequities within the secondary educational system through prioritizing educational inputs in the poorest areas of the State. Moreover, by increasing the relevancy and quality of secondary education, the Program makes more attractive schooling at this level and may help to retain more students. The Program also supports increased effectiveness of education expenditures through reductions in system inefficiencies. Promoting greater participation of the local community and civil society at large is one of the key strategies pursued in this Program in order to increase the equity, efficiency and efficacy of Paraná's secondary education system.

D. Bank and other Organizations Experience

- 1.36 Since 1964, the Bank has financed over US\$290 million in Brazil's education sector, principally higher education or vocational-technical education (93.5% and 6.5% respectively). Indeed, this Program represents one of the first secondary education programs ever financed by the Bank. In terms of *lessons learned*, with the exception of the recently approved (March 1996) Secondary Education Program in Uruguay, the Bank has approved only two non technical-vocational secondary education projects in its history. Nevertheless, while no data exist in terms of either impact evaluations or project completion reports, recommendations from earlier Bank work in the education sector, general literature and the World Bank's project experience have helped guide the preparation of this Program. Salient recommendations are that the provision of textbooks and other teaching materials, as well as school upgrading are highly efficient investments; teacher training should focus on performance, strengthening classroom management techniques, and skills upgrading; and improving management at all government levels in education, including management systems is important. With regards to technical-vocational education, recommendations from the Bank's experience ^{4/} were followed: the necessity to carry out demand studies for skilled labor; the importance of developing close links among educational institutions and potential employers of its graduates; and the advantages of multiple-use facilities and modular courses, combined with continuous curriculum review to adapt to changing market conditions.

^{4/} Summary of Evaluations of Secondary Technical-Vocational and University Education Projects, OEO, GN-1543, September 1985.

1.37 Of particular importance to this Program is the Basic Education Quality Program, financed by the World Bank (see Box 1.1). Internalizing IBRD norms and procedures, and bureaucratic delays were cited as the principal bottlenecks in program execution, as well as the importance of political timing in program preparation. The PQE became effective just as there was a change in government, and therefore, suffered serious delays as the new administration carefully reviewed and revised the program according to its priorities.

1.38 The present Program serves as a logical follow-through investment to the PQE as its success will, by definition, affect the demand for secondary education. Both institutions have maintained close coordination throughout the preparation of this Program, maximizing the developmental impact of not only its financial, but also its human resources.

Box 1.1: Basic Education Quality Program

Approved in June 1994, the PQE is supporting primary education in Paraná through these components:

Instructional Materials (\$75.5 million) including textbook provision, school library enrichment, basic package of educational package;

Teacher Training (\$27 million) including in-service training for school principals, supervisors and teachers;

School Upgrading (\$75 million) including school construction and furniture;

Institutional Development (\$18 million) including project coordination unit, student learning assessment, restructuring existing management information systems; promote quality improvements through prize fund.

Studies and Evaluation (\$2.4 million) supporting policy, project evaluation and impact studies.

As reported in the Staff Appraisal Report, and reconfirmed after the March 96 reprogramming, principal target indicators include: 1) increasing the percentage of students reaching 5th Grade with 1 repetition from 45% to 60%; and 2) increasing the percentage reaching the 8th grade with 2 repetitions from 15% to 25%.

II. THE PROGRAM

A. Program Objectives

- 2.1 The overall objective of the Program is to increase the efficiency, equity, and efficacy of Paraná's public secondary education system, while strengthening the sectoral managerial capacity at local, regional and state levels. Through the equitable provision of quality education, the State of Paraná will fulfill its long-term goal of preparing a well-educated populace able to meet the challenges of the 21st century both in the workplace and in the community. Underlying this Program is the 1995-1998 State Secretariat of Education's strategy "ABC": *Aluno permanecendo na escola; Bons professores; e Comunidade participando*. These three objectives of students staying in school, qualified and motivated teachers, and active community participation with greater school autonomy, form the keystone of this Program.

- 2.2 In preparing this Program, the Bank and the State of Paraná agreed on a set of reform measures which would improve the access to, content and result of, the educational process, and how that process is managed and administered. Reforms already underway are summarized in Chapter I and in the Educational Strategy Statement sent to the Bank by Paraná's Secretaries of Education and Planning. The desired outcomes of this reform process and of Program investments will

Box 2.1: Efficiency Indicators

	Year 1996	Year 2000
<i>Total Secondary Enrollment</i>	310,000	450,000
<i>Net Secondary Enrollment</i>	26%	47%
<i>Total Number Teachers</i>	15,156	12,500
<i>Student/Teacher ratio</i>	22:1	36:1
<i>Repetition Rate</i>	14%	5%
<i>Drop Out Rate</i>	16.5%	5%
<i>Student Achievement</i>	a/	+ 20%
<i>Completion Rate</i>	52%	75%

a/ Baseline will be taken in October 1996 for 11th Graders.

emerge in various stages throughout Program execution and indeed, years past final disbursement. Such results would include: improved cognitive performance, increased coverage and completion rates, reduced repetition rates, improved teacher effectiveness in the classroom, greater labor market placement, and enhanced system management and administration. A set of key indicators has been identified which will track the Program's successes (see Box 2.1). These qualitative and quantitative benchmarks will be reviewed annually by the Bank, together with the Borrower, in order to identify any corrective measures deemed necessary during Program execution (Annex II-1).

B. Program Description

- 2.3 The Program is divided into the three subprograms outlined below:
1) Secondary Education Quality Improvement, 2) Modernization of Technical-Vocational Education, and 3) Strengthening Educational System Management.

1. Secondary Education Quality Improvement (US\$156.7 million)

- 2.4 The central objective of this subprogram is to improve the quality of general secondary education, optimizing both physical and human resources, while improving both students' and teachers' access to learning materials and other essential educational inputs. The subprogram comprises the following activities:

a. Optimization of Supply of Secondary Education
(US\$80.5 million)

- 2.5 The Program would finance the rehabilitation and/or expansion of existing schools, adapting physical space to the new curriculum, providing that these schools meet the equity, efficiency and technical-pedagogical criteria set out in the Operating Regulations (see Annex III-3 in the Technical Files). Furthermore, in those areas where science or math teachers are not available, the Program via the SEED's regional offices or *Nucleos Regionais de Educação* would support transport of those teachers who would be able to extend their work load per week and travel to other schools to give the aforementioned courses. A total of 36 notebook computers and multi-use vehicles would be purchased for use in the 18 poorest municipalities where the shortage of teachers is most acute.
- 2.6 In order to continually optimize both human and physical resources involved in the supply of secondary education, the Program would first develop two essential inputs: i) a school mapping exercise which links current enrollments and expected student demand for both primary and secondary education, with present physical conditions of the State's schools as well as their accessibility ^{5/}; and ii) a census of all secondary school teachers, which identifies their professional and educational background. By establishing a permanent information system with these data, the SEED would be able to continually monitor its installed capacity and make the necessary adjustments in the use of its physical and human resources to expected student demand. These two activities require a total of 10 consultant/months.

^{5/} An analysis conducted in July 1995 of the physical conditions of all 738 schools which currently offer secondary education determined that 581 schools were in a state of disrepair.

b. Quality Improvement of Educational Inputs (US\$39.7 million)

- 2.7 Aimed at increasing student learning, this component not only provides educational resources needed to implement the Program, but also promotes the development of these resources at the school level. These inputs are expected to benefit not only students in secondary schools, but also those children enrolled in grades 5 - 8. The future combined enrollment is expected to exceed 1.4 million students by the year 2000. The activities to be supported under this component include:
- 2.8 **Curriculum Development:** The Program would support an assessment of the current secondary curriculum in order to simplify and reduce the number of subjects offered in the secondary school, thereby deepening subject knowledge and enhancing contextual, problem solving-based learning. The Program would also finance a diagnostic of the curriculum for grades 5 - 8 to ensure consistency between the two educational levels. Finally, the Program would finance didactic materials and training for their proper use in the classroom.
- 2.9 **Technical-Pedagogical Innovations:** Reinforcing the SEED's on-going program "*Busca de Excelencia*", the Program would provide incentives for individual schools to develop new teacher-learning methodologies, practical experiences, evaluations, or other subjects relevant to the pedagogical process. Schools would compete for financing on an annual basis, roughly US\$4000 per project. Project proposals would be judged by a high-level evaluation commission comprised of representatives from the educational community. It is foreseen that said commission will be established and operational within 120 days after loan signature. After implementation, the results of these projects would be disseminated throughout the State in order to share "best practices". An estimated 300 projects would be financed.
- 2.10 **Informatics and Educational Software:** Computer-based learning is an important element in Paraná's educational policy. Therefore, the Program would finance the installation of roughly 8,900 computers and basic software packages for the use of both students and teachers as a didactic tool and as part of technology course to be introduced. Also included are computers for natural science laboratories, as well as libraries in each of the secondary schools. The Program would also finance, on a pilot basis, the production of educational software.
- 2.11 **Textbooks:** The Program would finance the acquisition of a total of 728,000 textbooks in Mathematics, Physics, Biology, Chemistry and Portuguese -- the equivalent of 5 texts per student in each shift. The texts would be used individually in the classroom as part of the professor's didactic materials, with the possibility of the texts' being loaned to the students during the weekend. In terms of the selection of textbooks, a technical commission comprised primarily of teachers will be formed in order to pre-qualify

suppliers from which the individual teachers will choose appropriate textbooks. Within 120 days after loan signature, said commission must be established and operational.

- 2.12 **Library Reference Material:** In order to upgrade school library collections, the Program would finance the acquisition of: 909 encyclopedias, 17,059 dictionaries, 8530 atlases, and 61,500 volumes (120 new titles) relevant to the new secondary curriculum.

c. Human Resource Development (US\$31.6 million)

- 2.13 This component's main objective is to promote skills upgrading of the system's educational professionals: school principals, supervisors, teachers, staff of the NREs as well as members of the CREDEs. The following activities would be financed:
- 2.14 **Educational Professionals In-Service Training:** The Program would finance school-based training activities involving short-term courses in basic proficiency and skills upgrading in the form of seminars, workshops, study groups for both teachers and school administrators. School principals, and supervisors would be trained in such areas as organizational management, human and financial resource management, including strategic planning at the institutional level. The Program would benefit over 65,000 participants in these training activities.
- 2.15 Furthermore, the Program would finance out-of-class instruction at the university level, including the payment of a substitute teacher and technical assistance in the classroom once the course is completed 6/. This activity is geared to upgrade subject knowledge, with its respective pedagogical methodology, for the existing stock of teachers according to the changes introduced in the general secondary curriculum. A total of 12,500 teachers would benefit from this retraining each being subject to a pre- and post-training evaluation. Finally, through the *Esquema I* modality, the Program would provide pedagogical training to 3,000 professionals so that they would be able to teach in state-supported schools. It is estimated that eight consultant/months would be needed to design a planning system for future training programs.
- 2.16 Training will be contracted out by the Secretariat to pre-qualified institutions. In terms of pre-qualifying universities or other outside organizations to bid for training contracts, a high level commission will be formed to judge their relative competency. Said commission will be comprised of five representatives from prestigious academic and science and technology organizations,

6/ Of the 15,156 teachers currently on the State payroll, it is assumed that approximately 82% or 12,500 professors will require retraining, particularly in the following priority courses: Mathematics, Biology, Physics, Chemistry, Portuguese, and English.

including national ministries, and will be operational no later than 120 days after loan signature.

- 2.17 All of the above-referenced training activities would be complemented by existing federal programs in distance education such as *TV Escola* (teacher training), *TV Executiva* (technical education/administration), *Telecurso 2000* (Red Globo), and *Salto para o Futuro* (MEC).
- 2.18 **Career Stream Development/Teacher Statute:** The Program would finance six consultant/months in order to support specific background papers to formulate a Career Stream for educational professionals: teachers, administrators, technicians, support staff, as well as to modify the State Teacher Statute for primary and secondary school teachers. One key element to be included in these background studies is the financial impact generated by the different options regarding salary structures and promotion mechanisms. The Program would also finance the production and dissemination of materials used to explain the new instruments.
- 2.19 **Incentives for Improved Teacher Performance:** In support of the existing programs within the SEED, *Vale Ensinar*, and *Vale Saber* which encourage improved teacher competency in the classroom, the Program would finance approximately 1,700 separate projects developed by an individual teacher or group of teachers. Each project would have a duration of one year with an estimated cost of \$1200.
- 2.20 **Interactive Educational Magazine:** The Program would support the development, installation, and operation of an "Interactive Magazine" which would facilitate the exchange of best practices in education. Through the creation and maintenance of a Web site on the World Wide Web, with access provided on the Internet, the Program would encourage the dissemination of innovative experiences not only within Paraná, but throughout Brazil, and the Region. Two consultant/months as well as the necessary equipment, and training in the maintenance of this site would be required for this activity.

d. Quality Improvement of Teacher Preparation (US\$4.8 million)

- 2.21 Based on a demand analysis for teachers in the first four grades in both public and private primary schools, and their regional distribution, the Program would finance the rehabilitation of five existing schools and the construction of a new facility in Londrina ^{1/} in order to create a total of six Regional Teacher Training Institutes or RTTIs. The Program would also finance all

^{1/} The justification for the new construction is that the new Institute will be located near the University of Londrina's campus such that greater utilization of the Institute's services would be possible by those university students in teacher preparation track.

necessary equipment and materials, the development of the curriculum and its instructional materials to be implemented at these Institutes. This activity would require 18 person/months of curriculum development specialists in pre-service teacher training.

2. Modernization of Technical-Vocational Education
(US\$34.7 million)

- 2.22 The Program would support the establishment of eleven Regional Technical-Vocational Centers (RTVC), five of which would offer post-secondary courses in both industry and services, and six in agriculture or agro-industry. Through the physical adaptation of selected existing schools, these "Regional Centers of Excellence" would offer from 6 to 24 month modular courses in technical or professional qualifications only. These Centers would respond to real market demand, and through the rationalization of the State's supply of technical education, maximize the State's installed capacity for training. In order to ensure this response, a non-governmental organization has been created, PARANATEC, which formally associates SENAI, SENAC, SENAR, CEFET, and SEBRAE. It intends to integrate the public sector, the business community and public and private institutions in the articulation of technical educational priorities based on their demands for skilled manpower.
- 2.23 Located in regions within the State where demand studies have already identified key sectors for future economic growth, these Centers will directly respond to the vocational interests of each region in three basic categories: industry, agriculture, and services as identified by the productive sector in terms of its requirements for skilled manpower. The Program would finance the conversion of existing infrastructure into centers which would have adequate physical space for administrative, career guidance and placement offices, and classrooms and laboratories for training. In addition, the Program would finance specific demand studies for skilled labor, taking into account microregional differences within the State. An economic analysis of the courses to be offered will be performed as part of the eligibility criteria for investments in these centers. The Program would then support the development of the curriculum and identification of related materials/equipment for each of the three types of Centers. Finally, the Program would finance tracer studies on the Centers' graduates, measuring job placement, and earning levels, among other indicators, which would then be compared with identical indicators on an appropriate control group. In addition to the civil works (and related engineering and final design studies), this subprogram would require a total of 43 person/months in consulting services in the following areas: labor market analysis and curriculum development in technical education. As a condition prior to first disbursement, the borrower must submit to the Bank's satisfaction the legal instrument which formally establishes these Centers.

3. Strengthening Educational System Management (US\$20.3 million)

- 2.24 The Program would strengthen the normative role of the Secretariat, and increase managerial functions at the school, and NRE levels, thereby improving overall system management. The following areas are supported under this subprogram:

a. Strategic Planning Unit

- 2.25 In order to have the necessary capacity to formulate policies and programs designed to improve secondary education, the Program would support the design and implementation of a Strategic Planning Unit. In conjunction with the SEED's Department of Finance, during the first year of execution, the Program would also carry out and publish a study on the sources and uses of funds for secondary education. Its objective is to develop a strategy to capture additional resources for educational purposes. This exercise would be repeated in Year 3 of Program execution in order to determine the degree to which earlier recommendations regarding the financing of the sector are being implemented. These activities would require approximately 65 person/months of consulting services in area of strategic planning, and educational finance.

b. Management Information System

- 2.26 The Program would support the consolidation of the various systems of educational, financial, physical and managerial indicators, systematizing the collection of these data to more readily support decision-making. The Program would finance roughly 12 person/months in the area of information systems.

c. Evaluation Unit

- 2.27 The Program would also finance the design and development of a permanent monitoring and evaluation system which will include student, teacher as well as institutional evaluation activities. Test development and administration, as well as processing test results would be financed with Program resources. It is expected that 18 consultant/months would be required in the area of educational testing at the secondary level.

d. Curriculum Development Unit

- 2.28 The Program would finance the establishment of the Curriculum Development Unit which would formulate, monitor, implement and evaluate State curricula in both primary and secondary schools. This Unit would also be responsible for identifying new sources of didactic materials which could serve as complementary teaching/learning aids. The Program would fund the incremental personnel costs of 10 individuals throughout the Program.

e. Pilot Program for School Autonomy: Decentralized Management

- 2.29 The Program would support a pilot program for school autonomy which would entail the following activities: i) careful revision/definition of the roles of various local organizations, School Boards, CREDEs, NREs, and the Parent-Teacher Associations; ii) the design and implementation of a decentralization strategy to be carried out in 20 schools; 3) the monitoring/evaluation of this experience, and 4) the dissemination of these results. These 20 schools would be afforded full financial and administrative autonomy. The Program would finance approximately 13 person/months of consulting services in educational decentralization.

f. Social Mobilization/Marketing

- 2.30 Through massive use of the media, primarily television and radio, the Program would ensure that there is an understanding of the basic concepts of education, and an awareness of the changes in the school system. The Program would finance public relations materials needed for periodic "town meetings" sponsored by the NRE in conjunction with the CREDE and would strengthen the SEED's "partnerships" strategy in order to encourage broader and more active civic participation. This activity would require 16 person/months of consulting services in the area of social marketing and public relations.

g. Administrative Infrastructure/Equipment

- 2.31 The Program would improve the physical conditions of existing facilities of the SEED, in particular, its regional offices. In addition, the Program would finance the necessary office equipment and materials in order to modernize their day-to-day operations.

h. Program Administration

- 2.32 The Program would support the Coordinating Unit (CU). As described in Chapter III, the Program would finance the incremental personnel costs, consulting services, equipment and materials necessary to ensure adequate Program supervision/execution, as well as those of FUNDEPAR to reinforce its function in the procurement, bidding, supervision and maintenance of physical works.

C. Cost and Financing Plan

1. Cost Analysis

- 2.33 The total cost of the Program is estimated at US\$ 222 million and is described in the following tables:

Table II-1: Cost by Sub-programs, Components and Activities (US\$000)

CATEGORY	IDB	LOCAL	TOTAL	%
A. Secondary Education Quality Improvement	74.410	82.375	156.785	70,0
1.0 <u>Optimization Supply</u>	42.750	37.800	80.550	36,0
1.1 School Mapping	300		300	
1.2 Teacher Census	250		250	
1.3 Physical Adaptation/Equipment	41.500	37.000	78.500	
1.4 Mobile School Assistance Units	700	800	1.500	
2.0 <u>Quality Improvement Educational Inputs</u>	17.100	22.600	39.700	18,0
2.1 Curriculum Development		2.500	2.500	
2.2 Technical-Pedagogical Innovations		1.300	1.300	
2.3 Production of Learning Resources		1.700	1.700	
2.4 Informatics/Educational Software	11.000	11.000	22.000	
2.5 Textbooks	5.500	5.500	11.000	
2.6 Library Reference Material	600	600	1.200	
3.0 <u>Human Resource Development</u>	12.100	19.575	31.675	14,0
3.1 Training Educational Professionals	10.500	18.500	29.000	
3.2 Career Stream Development/Teacher Statute	600	-	600	
3.3 Incentives for Improved Teacher Performance	1.000	1.000	2.000	
3.4 Interactive Educational Magazine		75	75	
4.0 <u>Quality Improvement Teacher Preparation</u>	2.460	2.400	4.860	2,0
4.1 Physical Adaptation Teacher Training Centers	1.800	1.800	3.600	
4.2 Curriculum Development/Materials	400	400	800	
4.3 Educational Software	200	200	400	
4.4 Diagnostic Future Teacher Demand	60	-	60	
B. Modernization Technical-Vocational Education	15.000	19.715	34.715	16,0
1.1 Physical Adaptation Regional Centers	15.000	16.000	31.000	
1.2 Regional Demand Studies		215	215	
1.3 Modernize Curricula		1.200	1.200	
1.4 Informatics and Educational Software		2.300	2.300	
C. Strengthening Educational System Management	6.000	14.287	20.287	9,0
1.1 Strategic Planning Unit	2.200	-	2.200	
1.2 Management Information		500	500	
1.3 Evaluation System	1.000	-	1.000	
1.4 Curriculum Development Unit	800	-	800	
1.5 Pilot Program School Autonomy	2.000	-	2.000	
1.6 Social Mobilization/Marketing		1.000	1.000	
1.7 Administrative Infrastructure/Equipment		1.800	1.800	
1.8 Program Administration - CU a/		10.987	10.987	
Subtotal	95.410	116.377	211.787	95,0
D. Contingencies/Inspection and Supervision	4.590	5.610	10.200	5,0
Total	100.000	122.000	222.000	100,0

a/ This figure does not include costs involved in administration, engineering projects, and civil works supervision.

Table II-2: Cost by Category and Sources of Financing (US\$000)

CATEGORY	IDB	LOCAL	TOTAL	%
1. Administration and Engineering		17.711	17.711	8,0
Administration		12.152	12.152	
Engineering Project		3.463	3.463	
Supervision		2.086	2.086	
2. Direct Costs	95.410	80.640	176.050	79,0
Civil Works	44.300	25.750	70.050	
Equipment	25.200	29.249	54.449	
Vehicles	700	123	823	
Pedagogic Material and Books	6.500	8.245	14.745	
Human Resource Training	14.015	12.588	26.603	
Consultants	4.695	4.685	9.380	
3. Recurrent Costs		18.039	18.039	8,0
Personnel		6.192	6.192	
Teacher Incentives		1.213	1.213	
Maintenance		10.634	10.634	
4. Inspection and Supervision	1.000	-	1.000	1,0
5. Contingencies	3.590	5.610	9.200	4,0
TOTAL	100.000	122.000	222.000	100,0
Percentage	45	55		100,0

2. Financing Plan

- 2.34 The proposed operation would be financed by a Bank loan of US\$100 million from the Bank's ordinary capital, representing 45% of the total cost of the Program. Excluding the costs related to the Strengthening of Educational System Management Subprogram, no less than 80% of total Program resources would finance activities related to the Secondary Education Quality Improvement Subprogram.

3. Counterpart

- 2.35 The local contribution of the equivalent of US\$122 million will come from the State of Paraná's budget. In October 1995, the Legislative Assembly approved US\$11 million as counterpart funding for Year 1 of this Program, which is considered satisfactory according to the first annual operative plan (see Chapter III). The availability of local counterpart for subsequent years of Program execution is secured by the State of Paraná's solid financial situation as well as the political will to increase the SEED's budget for this purpose. Using the 1995 total education budget of US\$898 million, counterpart resources for Year 1 would represent less than 1.3% of the total budget, and 8% of the secondary education budget alone.

III. EXECUTION OF THE PROGRAM

A. Guarantor and Borrower

- 3.1 The guarantor will be the Federative Republic of Brazil, which will only guarantee the debt service, and the borrower will be the State of Paraná. The borrower will transfer all loan resources and local counterpart funding to the State Secretariat for Education (SEED) on a nonreimbursable basis.

B. Executing Agency

- 3.2 The Program will be carried out by the SEED through a Coordinating Unit (CU) set up for this purpose, with assistance from the Superintendency of Education, the Department of Secondary Education, SEED's financial, administrative, and public relations departments, the *Instituto de Desenvolvimento Educacional do Paraná* [Institute of Educational Development of Paraná] (FUNDEPAR), Parent-Teacher Associations, Paraná Information Services Company (CELEPAR), and specialized consultants.
- 3.3 The CU, which will report directly to the Secretary of Education, will be comprised of 9 professionals whose selection will be based on merit and qualifications. Their primary tasks will be to manage, coordinate, and administer the Program. Prior to first disbursement of the financing, the executing agency must demonstrate to the Bank's satisfaction that: (i) the CU has been properly established with an adequate organizational and functional arrangement, and (ii) an agreement has been signed with FUNDEPAR.

C. Implementation Procedures

- 3.4 Program execution will conform to the operating, technical, and financial requirements, as well as the norms and procedures established in: (i) the loan contract; and (ii) the Operating Regulations. The Operating Regulations must be in force as a condition prior to first disbursement.

D. Operating Regulations

- 3.5 Among the areas covered in the Operating Regulations are a description of the objectives, goals, and costs of the Program, as well as of participating state agencies responsible for its execution. The Operating Regulations also include eligibility criteria for schools, institutes, centers, equipment, and other pedagogical materials, the mechanisms for implementing the Program, a description of the Annual Operative Plans (AOP), a detailed description of the Program's monitoring and supervision systems, and bidding procedures for the procurement of goods and services and the corresponding contract formats. The salient elements of

the Operating Regulations are briefly described in the following sections.

1. Eligibility Criteria

- 3.6 The table below summarizes the technical/pedagogical, economic, financial, and environmental criteria that will be used for investment in physical works, equipment, teaching materials, and training for personnel. These criteria are described in detail in the Operating Regulations.

Investment	Technical/pedagogical criteria	Economic/financial criteria	Environmental criteria
Rehabilitation and expansion of schools	<ul style="list-style-type: none">- Schools subject to school mapping exercise in order to optimize the use of physical and human resources.- Physical space found to be adequate for enrollment to the Year 2000 assuming that students in grades 1 through 4 will be transferred to another school or municipality, improvements in internal efficiency, and the elimination of technical courses offered in secondary schools.- Schools that offer both grades 5 to 8 and secondary education or secondary education only.- Each school must have a library, a computer lab, and a science laboratory.	<ul style="list-style-type: none">- Cost to rehabilitate and expand existing school must not be less than 5% or more than 30% of total cost of new school.	Availability of clean water, sanitary and storm sewers, and treatment and disposal of laboratory waste.
Technical-Vocational Centers	<ul style="list-style-type: none">- Regional demand and economic analysis for the technical courses offered.- Located in the cities of Londrina, Maringá, Cascavel, Guarapava, Ponta Grossa, and Curitiba, declared as priorities by the State's Development Plan.- Participation by productive sector in design of curriculum and administration of Centers.		
Pedagogical materials and equipment	<ul style="list-style-type: none">- Pedagogical materials and equipment will be selected according to the requirements of the new curriculum and by the teachers.		
Training of human resources	<ul style="list-style-type: none">- Identification of training needs on the basis of a teacher census.- Teachers close to retirement will not be eligible.		

2. Annual Operative Plan

- 3.7 The Annual Operative Plan is a programming tool used to detail investments. Specifically, each plan would include: (i) activities related to institutional strengthening, human resource training, and annual investments as well as a detailed description of the objectives, goals, and results expected during the programmed period, terms of reference for consulting services, technical specifications of the equipment, materials, and other educational inputs, and engineering designs and technical specifications of civil works; and (ii) from the previous year, an analysis of the budgeted and actual costs, the budgetary allocation and performance, the extent to which targets for the year have been met for each activity, and the justification for any adjustments that may be needed for more efficient Program execution.
- 3.8 During Program execution, the borrower, through the executing agency, will be required to submit to the Bank within the first 60 days of each year the Annual Operative Plan together with a review of the quantitative and qualitative results achieved in the previous year, showing the level of efficiency expected and the actual level achieved in the proposed plan and the progress made in the preceding period with respect to specific Program targets and indicators ^{8/}. On the basis of this Plan, the Bank and the borrower will conduct a joint annual review of the advance of the Program and what has been accomplished within 30 days of the date on which each Annual Plan is presented. Should the Bank find that progress has not been satisfactory, the executing agency will have 60 days to present supplemental reports outlining the adjustments that will be made to the project, together with a timetable and the estimated budget.

3. Program Monitoring

- 3.9 The Program will be continually monitored by means of a computerized information system, which has been designed to incorporate the targets of the Annual Operative Plans, record the data on the physical, financial, and technical status of the Program, and to describe the results on the basis of the indicators in the Logical Framework. To accomplish these goals, the system will have a central unit within the CU and terminals at participating institutions, centers, and schools, to record data as scheduled activities are performed and to relay the data to the CU for consolidation and analysis. The system's data will then be used to help prepare and evaluate the Annual Operative Plans.

^{8/} Additionally, in Years 2 and 4 of the Program, the AOPs will include the results of the study on the financing of secondary education, in particular the degree to which the study's recommendations have been implemented. Said studies will be published.

- 3.10 The Bank's Country Office in Brasilia will also be able to directly access the data recorded and analyzed by the system through the CU, so that the Bank can constantly monitor the Program's progress, thereby avoiding the need for the CU to submit written reports. This arrangement will facilitate a constant dialogue between the executing agency and the Bank which, in turn, will allow the introduction of corrective measures as needed.

E. Ex-post Evaluation

- 3.11 In light of the Program's innovative nature, it is recommended that the SEED and the Bank review the Program once it is well advanced (i.e. when 80% of the funds have been committed). Such a review would verify the Program's advance with respect to the benchmarks listed in the Conceptual Framework as well as provide information regarding the Program's impact in the development of the education sector. The methodology and information used in this review would lay the groundwork for an ex-post evaluation.

F. Preparation, Execution, and Deadline for Commitment of Funding

1. Preparation

- 3.12 A preliminary Operative Plan was prepared for the first year of the Program's execution on the basis of a set of technical/pedagogical, economic/financial, and environmental criteria which have been incorporated into the Operating Regulations and used to determine what investment should be made during the execution period. This Operative Plan includes: (i) the engineering designs, technical specifications, and the cost of rehabilitation and expansion of 86 schools, two teacher training institutes and one technical-vocational center, the technical specifications and the cost of furniture, equipment, and other inputs; (ii) the general terms of reference for the consulting services and studies supported by the Program, with specifications for the areas to be covered and the periods during which the services will be rendered; (iii) the timetable for bidding on goods and services and the value of the packages, the bidding procedures, and standard contracts; and (iv) the design, composition, operating guidelines, and cost of the CU. During negotiations, the final AOP for Year 1 was submitted to the Bank's satisfaction.
- 3.13 As part of the preparation of the Program, the following activities were also developed: (i) a full inventory of the physical conditions of the remaining 652 schools in the system, indicating their geographical location and quantifying their requirements in terms of rehabilitation and expansion, and specifying the equipment, furniture, and other materials that will be needed; (ii) the curriculum contents of the courses and areas of training for the development of teachers, principals, and school supervisors; and (iii) the scheduling of these training courses such that they do not interfere with normal teaching and administrative duties at the school.

2. Execution Period and Deadline for Commitment of Funding

- 3.14 The Program will be executed over five years, with funds to be committed over four years. The execution and commitment periods will commence on the effective date of the loan contract.

G. Procurement of Goods and Services

1. Goods

- 3.15 Contracts for goods and civil works will be awarded in accordance with the tender procedures contained in Annex B to the loan contract. International competitive bidding will be mandatory in the case of contracts equal to or greater than US\$350,000 in the case of goods and equal to or greater than US\$5 million in the case of civil works. These limits are based on the fact that foreign suppliers appear to be reluctant to bid on contracts below these amounts. In fact, between 1993 and 1995, FUNDEPAR issued 14 calls for tenders in amounts averaging US\$500,000 for goods and US\$6.8 million for works and no foreign suppliers took part. CELEPAR's experience has been much the same. It recently held 117 calls for tender on computer equipment, in an amount equivalent to US\$7.2 million, and no bids were submitted by foreign suppliers.
- 3.16 Bidding on contracts in amounts below the levels indicated in the following paragraph will comply with the requirements of local legislation which sets the following limits for each type of bidding.

(US\$000s)

MODALITY	GOODS	CONSTRUCTION WORKS
Direct purchase	less than 1.8	less than 7.1
Calls for quotes and Price shopping	from 1.8 to 36.0 from 36.1 to 572.0	from 7.1 to 143.0 from 143.1 to 1,430.0
Bidding	over 572.0	over 1,430.0

a/ Although price shopping is allowed under local legislation for equipment costing over US\$350,000, international competitive bidding will be used for the present Program.

2. Consulting Services

- 3.17 Consultants will be hired by the CU in accordance with IDB standards and procedures for consulting services which are attached as Annex C to the loan contract. Given the number of consultants that will be needed, it is recommended that, as a contractual condition the Bank be consulted in advance only on contracts equal to or greater than US\$50,000 for individual consultants and US\$100,000 for consulting firms in order to expedite Program execution and facilitate supervision by the Country Office. The standard terms of reference for each type of service must be pre-approved by the Bank.

H. Timetable and Procurement Plan

- 3.18 A tentative timetable and the procedures to be used for the procurement of the main items for the Program are listed in the table below.

**Table III-1
Timetable and procurement plan**

Main procurement for Program	Financing		ICB	Prequalification	LCB	Date GPN
	IDB	Local				
1. WORKS a) New school 1xUS\$830,000 b) Recoveries and expansion 30 packages x US\$3.5 million	US\$415,000 US\$58 million	US\$415,000 US\$47 million	— X	NO NO	X X	Nov/96 Dec/96
2. EQUIPMENT AND FURNITURE a) Computer equip. 1 package x US\$17 million 6 packages x US\$13.8 million	US\$8.5 million US\$6.9 million	US\$8.5 million US\$6.9 million	X X	NO NO	— X	Nov/97 Dec/97
3. PEDAGOGICAL EQUIPMENT 1 package x US\$11 million 1 package x US\$1.4 million	US\$5.5 million US\$700,000	US\$5.5 million US\$700,000	X X	NO NO	— X	Dec/97 Dec/97

I. Disbursement

- 3.19 Based on the data furnished in the Operative Plan for Year 1, and given the time required to carry out the Program activities, including the bidding process and the award of contracts for goods and services, it is expected that Program resources will be disbursed according to the following time frame: 10% in Year 1, 25% in Year 2, 36% in Year 3, 23% in Year 4, and 6% in Year 5.
- 3.20 In view of the nature of the operation, the volume of the transactions involved in procuring the goods and services, and the characteristics of a global Program, an effective mechanism has been developed to disburse the financing quickly and efficiently. Funds will be disbursed in accordance with the Bank's procedures except for justification of advances and reimbursements of payments where the executing agency alone will submit the disbursement request to the Country Office, together with an itemized statement of payments and verification of disbursements and local contributions, with the supporting documentation remaining in the hands of the executing agency.
- 3.21 The executing agency must make sure that the information contained in the statement is duly justified with the usual supporting

documentation requested by the Bank. The executing agency must retain for its own records originals and/or copies of the contracts, orders, invoices, receipts, payment records, vendor certificates, certificates of origin, and any other documentation confirming the information supplied in the statement. This documentation must be properly identified and filed and be available on request for review by the Bank's authorized officers and outside auditors. This documentation must be kept in an active file in a place of the executing agency's choosing for at least five years from the date of the final disbursement of the Bank's financing.

- 3.22 During technical and/or financial inspections of the Program, the Country Office will verify by sampling that the supporting documentation for disbursement requests have been kept in the executing agency's files and that funds have been used as specified in the loan contract. If any errors are found, a larger sample will have to be checked, and the executing agency will be notified of the amounts that are to be deducted from future requests.

J. Recognition of Expenses

- 3.23 **Services:** Using its own funds as well as other resources contributed by state agencies participating in the Program, the executing agency hired consultants to prepare the designs for the Program, in accordance with standards and procedures set out in relevant national legislation. Accordingly, it is recommended that these outlays be recognized as local counterpart funding under administrative expenses.

K. Environmental Considerations

- 3.24 At its meeting on January 30, 1996, the Environment Committee classified the Program as a Category II operation, recommending that: (i) the curriculum for secondary school and for technical and teacher training include environmental issues; and (ii) the environmental and technical criteria and procedures to be adopted for new construction should be defined. Ecology and conservation of natural resources and indigenous populations have been added to the preliminary designs of the new school curriculums for all subjects. Science will now include the study of flora and fauna and their ecosystems and the methods used to identify points of pollution and measure the pollution level. In agricultural education, attention will focus on soil conservation, vegetation, and fauna, and in social studies stress will be placed on preserving the environment and not simply considering it as another exploitable resource.
- 3.25 Schools or institutes and/or technical training centers that are to be rehabilitated and/or expanded under the Program, have running water, indoor plumbing, storm sewers, and adequate green areas. As the land on which the construction will take place is level, the

rehabilitation and/or expansion work will not entail the removal of large amounts of earth, which could lead to erosion. The Londrina Teacher Training Institute will be the only new building and the eligibility criteria will be based on compliance with FUNDEPAR environmental standards, which provide for running water and indoor toilets, storm sewers, solid waste collection, and special procedures for laboratory waste treatment.

L. Accounting and Audits

- 3.26 The CU will keep accounting records of all expenses incurred under the Program in accordance with the chart of accounts approved by the Bank. Budgetary performance and accounting records of funds and expenses will be monitored by the SEED's Department of Administration and Finance. Financial statements for each of the five years of the Program must be presented within four months of the close of the fiscal year, together with a report by independent external auditors. The auditor's report will include an opinion on all aspects of Program management.

M. Land and Rights of Way

- 3.27 Before issuing calls for bid for each work, the CU must provide evidence of legal possession, rights of way, and other rights to the land that permit construction of new buildings or rehabilitation, and/or expansion of existing schools and any other works to be carried out and that it has hired the necessary consultants or has the necessary staff to supervise the works to supervise the works. Such evidence must be kept in the executing agency's records for review by the Bank.

N. Inspection and Supervision

- 3.28 The Education Specialist in the Country Office has been part of the Project Team responsible for the preparation of the Program. Therefore, the Bank does not foresee any difficulties in effectively monitoring the Program.

IV. PROGRAM VIABILITY, ITS BENEFITS AND RISKS

- 4.1 Overall feasibility of the Program lies with the political will and conviction of the State authorities needed to undertake the reforms envisioned in this Program. Both the State and the Nation have echoed the importance of education as a critical determinant to Brazil's economic future. As stated in Chapter I, Paraná has moved forward to implement many of the legislative changes affecting the education sector which are still being discussed at the federal level.
- 4.2 In recognizing that the success of these reforms greatly depends on reaching *consensus among stakeholders* the State Secretariat of Education involved key agents within the educational community in the design of the reforms contemplated in the Program. For example, the State Educational Council has already publicly endorsed the Secretariat's proposal to strengthen secondary education and to redefine technical education as a post-secondary endeavor. Teacher unions and the educational community at large have also expressed their support either directly, or indirectly through their representatives in the local organizations such as the NREs, APMs and CREDEs. In addition, consensus building will be enhanced through the participation of representatives of the productive sector in PARANATEC. Moreover, Program execution ensures the *continued participation of the educational community* by strengthening the NREs, the Parent-Teacher Associations and the Regional Educational Development Councils. These actions, in turn, foster greater leadership and autonomy at the local level.
- 4.3 By having initiated the preparation of the Program early on in the current Administration's tenure, the *timing* of this project is such that its execution will be well underway before the end of this political cycle, thereby avoiding any delays due to a potential change in governments. The Program's timing also complements the Basic Education Quality Program financed by the IBRD. By setting in motion the reform process now, the Secretariat would have the necessary time for the quality improvements envisioned in this Program to yield tangible results so that the secondary school system can adequately respond to the needs of the growing number of primary school graduates.
- A. Technical viability
- 4.4 The Program's technical viability is supported by its very design which draws on the lessons learned described in Chapter I, the technical expertise utilized during the preparation of this Program, as well as the local context in which it would be executed. The Program has identified the needed inputs to ensure quality service in both general secondary and technical-vocational education offered in Paraná. Specifically, in regards to secondary education, the Program would support a model of delivery which

would respond to future student demand. Through the revised curriculum, more qualified teaching staff, appropriate physical infrastructure, and the provision of learning materials, among other factors, this model ensures quality education.

- 4.5 Transferring formal technical education to a post-secondary level will ensure higher quality of education, a stronger link to specific labor demands, and a more efficient and transparent administration. The participation of the private sector, through PARANATEC, will guarantee course relevancy by detecting future skill requirements of the labor market.

B. Institutional viability

- 4.6 The institutional viability of the Program was carefully reviewed not only in terms of the Program execution, but also in terms of the sustainability of the institutional changes introduced in the Program.
- 4.7 Program execution will rely on two key departments within the SEED: the Office of the Superintendent of Education, and the Department of Secondary Education. By working with existing personnel within the Secretariat, the Program would reinforce installed institutional capacity. The Coordinating Unit will be linked directly to the Office of the Secretary in order to ensure that key decisions are taken in a timely fashion. Continuity between the Program design and implementation stages has been ensured given that the technical staff who prepared the project will also be responsible for its execution. Furthermore, the Program would provide training and skills upgrading for staff members.
- 4.8 Many of the proposed activities supported by the Program at the state and regional levels are already being carried out by the SEED and as such, do not represent additional responsibilities. Among the activities which can be cited: strengthening the Regional Councils of Education and other school community organizations; improved accessibility to training opportunities for teachers and principals; students' and teachers' performance evaluation; and the modernization of management and information systems (computerized mechanisms).
- 4.9 One of the key features of the Program would involve the institutional strengthening of the various agencies responsible for service delivery. The installation of permanent systems for management information, educational indicators, evaluation/monitoring, strategic planning, and social marketing all serve to enhance the SEED's as well as school performance. Through better information, Program beneficiaries would be better positioned to hold the school and the State accountable for the quality of service provided.
- 4.10 Financial and administrative autonomy at the school level is supported, albeit modestly, given the limited current capacity to absorb these new functions. Yet through training of school

teachers, directors, administrators and technicians, and by providing the financial incentives for innovation and project management at the school level, the Program moves towards systemic change in improving the quality and delivery of educational services.

- 4.11 Finally, by utilizing Annual Operative Plans, the Borrower and the Bank will be able to make adjustments during the course of Program execution to facilitate a more effective implementation. The Program would support project supervision, and implementation, and would monitor performance benchmarks which will be continually measured throughout Program execution.

C. Socio-economic viability

- 4.12 The Operating Regulations of the Program will ensure that investments which are carried out are cost efficient. Furthermore, the Program would optimize the use of existing infrastructure and educational inputs by benefitting students in grades 5 - 8 in addition to those in secondary schools. Likewise, the impact of training activities would be maximized as trainees simultaneously teach grades 5 - 8 and secondary schools and through seminars, workshops, and study groups, would share their training benefits with their colleagues.
- 4.13 **Internal Efficiency.** The Program is expected to produce savings and other benefits derived from reduced repetition and drop out rates, more efficient administrative operations, improved teaching staff, and revised curriculum. For example, by reducing repetition from 14% to 5% by the end of the Program, Paraná's secondary education system is expected to save over US\$5.4 million yearly. Improvement in drop out rates from an average 16.5% to 5% would yield savings of nearly US\$7 million per year.
- 4.14 By increasing student-teacher ratios from 22:1 to 36:1, the number of teachers on the State payroll will be reduced from more than 15,000 to 12,500. If the student-teacher ratio were to be maintained, by the year 2000, the State would need an additional 8,000 teachers or the equivalent of US\$63.6 million per year for teacher salaries. And, though the number of school days per year is increased from 180 to 200, this will not represent increased recurrent salary costs, given that these are currently paid vacation days which are in addition to the legally mandated 60 days per year.
- 4.15 The SEED's efforts to strengthen its own institutional capacity, by deconcentrating and decentralizing some of its functions, will undoubtedly result in an improvement in the system's administration. This advancement would, in turn, yield some reductions in administrative costs. While it is difficult to estimate specific administrative savings resulting from Program implementation, it is reasonable to assume a 5% reduction in total

administrative expenditures, which translates into a savings of US\$3.7 million.

- 4.16 However, as certain educational inputs such as textbooks, computers, and other didactic materials have not been traditionally available to students in Paraná's secondary schools, their use would represent additional recurrent costs. And although the Program supports a rationalization of the teaching staff, the net impact that likely changes in the Career Stream and Teacher Statute will have in the salary structure is unknown.
- 4.17 Estimates of the partial benefits mentioned above, which only stem from readily-quantifiable cost savings, are on the order of US\$80 million per year. These internal efficiency gains alone yield an internal rate of return of approximately 20%, clearly supporting the Program's socio-economic viability 9/.
- 4.18 **External Efficiency.** External efficiency is enhanced by improving the quality of education and student learning. Paraná's graduates will be better equipped to compete in the labor market as well for university places. By the year 2000, Paraná will be faced with a 45% increase in demand for secondary education, and through the Program it is expected that the percentage of the cohort that graduates will reach 75% (up from 52%). The challenge, therefore, is to respond to this demand without compromising quality.
- 4.19 This quality improvement, coupled with expanded coverage, is particularly important given Paraná's prospectives for economic development under the Mercosur initiative. Moving from a capital-intensive to an export-oriented development strategy will increase Paraná's demand for skilled human capital. Yet, in the medium term, part of this demand may go unfulfilled given the relatively small pool of skilled workers available. These individuals could potentially demand premium wages and indeed, this is reflected in the rate of return analysis discussed below.
- 4.20 The private rate of return calculates the benefit attributed to the wage differential an individual would have received had he or she completed the next level of education. Private rates of return calculated for Paraná based on the 1989 household survey show that secondary school graduates enjoy a return of 25.29% to their investment in education. These results demonstrate that the time invested by individuals in secondary schools will pay off in increased future income. Private rates of return, by definition,

9/ Regarding the Modernization of the Technical-Vocational Education subprogram, the Program will include an economic analysis by career track to be offered at each of the RTVCs as part of the overall eligibility criteria to establish these Centers. The full costs and benefits would then be measured after the results of the pilot program are known -- specifically after tracer studies are made available on the first cohort to graduate from these Centers.

do not capture the public sector costs and benefits. Indeed, even social rates of return overlook the many positive externalities generated by an investment in secondary education, especially in terms of reducing inequality, and increasing social mobility.

D. Financial Viability

- 4.21 Paraná's overall creditworthiness has been reconfirmed by both the Bank and the Federal Government. As was explained in the Bank-financed program to support urban development (917/OC-BR), approved in February, 1996, Paraná has consistently demonstrated a strong fiscal performance, which has given rise to current account savings. Since that loan was approved, the Bank obtained additional data which demonstrate that the State's servicing of its domestic and external debt obligations on a cash basis were on average equal to the amounts actually owed throughout the last ten years. This balance between actual and accrued debt servicing provides further evidence in support of the State's creditworthiness and long tradition of sound fiscal management. And, as discussed in Chapter II, securing the local counterpart funds equivalent to US\$122 million is not expected to pose any risk.
- 4.22 Incremental recurrent costs have been estimated at US\$18 million during Program execution. These costs include additional personnel (US\$6.2 million), technical-pedagogical innovations (US\$1.2 million) and maintenance of civil works and equipment (US\$10.6 million). After Program completion, textbook and reference material replacement would amount to an additional US\$1.2 million per year. Therefore, using the 1995 total education budget of US\$898 million, incremental recurrent costs would only represent approximately 2.1% of the total budget and 13% of the secondary education budget. These additional resources are necessary to sustain investments and quality improvements initiated under this Program. The Borrower has demonstrated the capacity and political will to assume responsibility for all recurrent costs, operational maintenance and inputs once the Program is completed.

E. Beneficiary Analysis

1. Social Equity and Low Income Population

- 4.23 As the table below shows, the probability of attaining a higher level of education is closely related with income. Not surprisingly, children from poor families tend to drop out from the system in the first cycle of primary education, long before any intervention in secondary education can reach them. This inequity is exacerbated by the fact that the lowest quality schools tend to be concentrated in the poorest areas. This vicious circle of poverty and education retards inter-generational mobility for low-income individuals.

Table IV: Educational Attainment by Income Level (in %)

Educational Level Attained	Bottom Quintile	Top Quintile
None	40.1	21.6
Grades 1 - 4	49.9	34.4
Grades 5 - 8	8.8	7.8
Secondary	.8	14.2
University	.3	21.8
TOTAL	100	100

- 4.24 Nevertheless, by improving Paraná's secondary schools (many of which will house primary grades 5 - 8), providing additional educational inputs, and complementing traditional teaching practices with state-of-the-art interactive methodologies, this Program should also motivate students, including those from low-income families, to complete primary school. Additionally, the Program would help to reduce inequities by affording priority to investments in schools located in municipalities that have the greatest level of unsatisfied basic needs.
- 4.25 At the same time, the Program indirectly would support those individuals who did not complete either primary or secondary schools, and who are enrolled in adult education courses (55,495 students overall, with 8,897 in secondary school equivalency programs). Nearly 6,000 teachers in adult education would benefit under the skills upgrading and other teacher training activities financed by the Program. Inasmuch as adult education is offered in secondary schools, those students would also benefit from improved physical infrastructure, as well as the textbooks, library material and computers.
- 4.26 As defined in paragraph 2.13 of the Eighth Replenishment document, this operation qualifies for meeting the objective of increased social equity as it falls within the traditional area of education. The Program does not, however, qualify as a poverty-targeted investment according to paragraph 2.15 of said document given that the benefits of the Program would accrue to all secondary students regardless of their income level.

2. Gender Issues in Secondary Education

- 4.27 In Paraná's state secondary system, women accounted for 56.4% of total enrollment in 1995. However, this figure could be misleading since girls are highly concentrated in the teacher preparation courses or *magisterio*. At the same time, they are less likely to enter the federal technical school in Paraná [*Centro Federal de Educação Tecnológica do Paraná* (CEFET)], where female enrollment reached only 31% in 1995. Reforms in the general secondary system are expected to benefit women in the following manner: (i) under the new model, women will not be as readily tracked into the teaching profession, therefore allowing them to acquire a solid

cognitive base and encouraging them to pursue other career or educational options; and (ii) the curriculum review will consider possible gender biases, while at the same time, gender issues will be introduced as cross-cutting subject in all core courses.

- 4.28 In the Technical-Vocational Centers, provisions would be made in order to assure that gender biases are minimized at the entry level as well as during the actual training. Specifically, the Program would support the promotion of a "Career Day" in all secondary schools, exposing both young women and men to the different career opportunities available. In the development of the curriculum in each of the types of centers, gender issues will be identified and adequately treated. Finally, tracer studies will detect participation rates of women by occupation.

F. Program Risks

- 4.29 Among the reforms supported by this Program, the most politically sensitive issue involves *resistance to the likely changes to the secondary school curriculum*. These changes relate to the elimination of all technical courses at the secondary level, as well as the redefinition of the core curriculum, both of which imply major modifications in teaching practices as well as the number of available posts. The SEED has minimized these risks by: maintaining an open dialogue with the educational community through the design and execution of the Program; and promoting a greater understanding of the benefits of the reform through public information campaigns, workshops and seminars. In the case of the teachers, the Program includes a series of incentives, such as *Vale Saber, Vale Ensinar*, and Pedagogical Innovations, which encourage their participation in the development and implementation of the curricular changes.
- 4.30 Another related risk is the potential *weak response of the private sector* in relation to the Regional Technical-Vocational Centers. This risk is tempered by the creation of the umbrella organization, PARANATEC, whose specific mandate is to foster private sector participation in the definition of curriculum contents of the training courses provided by these Centers as well as their administration.
- 4.31 The Program would require close *inter-institutional coordination*, which if not achieved, could present a challenge to its effective execution. In order to address this challenge, the Program provides the necessary technical support to the various agents involved in its execution, in particular to the Coordinating Unit within the SEED. At the same time, the SEED has moved rapidly to establish agreements with other participating agencies, having clearly defined their respective roles.

EDUCATION IN PARANA - AN OVERVIEW

As in the rest of Brazil, the public sector dominates the provision of all levels of education, comprising: (i) pre-school for children from 4 to 6 years old; (ii) primary education from grades 1 to 8; (iii) secondary education ranging from grades 9 to 11 for general academic studies, and from grades 9 to 12 for technical-vocational education; and (iv) higher education, lasting anywhere between 4 to 6 years depending on the career pursued.

Pedagogical, infrastructure and teacher requirements within primary education vary between grades 1 through 4 and 5 through 8. Indeed, educational inputs for grades 5 through 8 are more similar to those for secondary education. For example, both levels require specialized single subject teachers. It is quite common, therefore, to combine primary and secondary grades in varying forms in order to meet educational demands. However, in Paraná the supply of secondary education has not been traditionally organized along these lines, mixing the first cycle, the last cycle, or all eight grades of primary education with secondary education.

Only *primary school* is mandatory. The State has good coverage with nearly 100% of children attending primary school at some point in their lives. Yet the quality of education is poor as reflected in low learning levels. Repetition and drop out rates are high, occurring generally around the fourth grade (20% and 11% respectively). Less than half of the students entering primary school in Paraná actually complete the eighth grade (47%), taking on average 11 years to do so, with many graduates taking as long as 14 years. Not surprisingly, such high repetition rates give rise to an acute overage problem. In order to remedy this situation, Paraná, with financing from the World Bank, launched the Basic Education Program aimed at improving educational attainment in the State through greater access to quality education.

While no data exist on transition rates from those children who complete primary school, it is widely assumed that nearly all will eventually continue on to *secondary school* (public - regular and adult - and private). Due to the strong correlation between repetition and drop outs with student's economic background, those that complete primary school tend to come from middle or upper classes, and therefore can continue on the secondary school. Net secondary enrollment is only 26% (of the 916,015 young adults between the ages 15-19 in 1995, 204,629 are actually in the system). Over 84% of Paraná's total secondary enrollment or 310,895 students were enrolled in the State's 738 secondary schools (that is, those schools offering secondary education). Remaining schooling opportunities are provided in the following manner: slightly under 3% in both federally-supported technical schools, as well as the adult education, and less than 11% in private schools.

In 1995, nearly 40% of the students were enrolled in general education, with the remaining students in technical-vocational education distributed as follows by economic sector: 1% in primary, 1.6% in secondary, and nearly 58% in tertiary, mostly in accounting and teacher preparation

courses (89%). The reader should note that this distribution does not entirely reflect actual demand. Often only technical-vocational education is available at the post-primary level: particularly those courses which are not costly to offer--accounting and teacher preparation. Indeed, the 1996 enrollment figures reveal an increasing tendency towards general secondary education (with 49% of total enrollment).

Fourteen agricultural schools, the Instituto Politécnico Estadual and the Instituto Politécnico de Londrina (IPOLON) make up the State *technical schools*. In addition, Paraná boasts the presence of the Federal Technical School of Paraná [Centro Federal de Educação Tecnológica do Paraná (CEFET)] whose reputation for quality education is unparalleled both at the state and federal level. To illustrate, in CEFET's Curitiba institute, there were over 8,000 applicants for only 1,280 secondary schooling places in the 1995 school year.

Given the overage problem facing both primary and secondary schools, *adult education* or *ensino supletivo* became an important provider of schooling opportunities. In 1995, Paraná's adult education programs in either state or municipal-run, had a total enrollment of 55,495 students, of which 8,897 are currently completing the equivalent of secondary school.

Finally, Paraná supports five state *universities* as well as 11 colleges serving a combined student population of 45,154 men and women in 1995. In 1994, the state system graduated a total 6,345 students (note that the Federal University of Paraná, and the private Universidade Pontifícia Católica do Paraná are not included.) There is a marked concentration in study: Literature and Pedagogy. In terms of distribution by gender, 53% of approved candidates to enter the university were women.

While the public sector dominates the provision of schooling services at all levels, with a deteriorating quality in the state system over the last decades, *private schooling* opportunities soon became available in Paraná. As in the rest of Brazil, however, the quality of educational services offered by private schools is extremely heterogeneous: there are low cost, low quality schools just as there are high cost, high quality schools. Therefore, private schooling does not necessarily translate into higher quality education for those who are better off ^{1/}.

Box 1.1: The Use of Vouchers in Paraná

During the 1970s through the mid-1980s, the Secretary of Education supported a state-wide voucher program for low-income students without adequate access to educational opportunities. The SEED had contractual agreements with several of Paraná's private schools. However, the Program was terminated due to 1) investments by the State to expand the number of schools; 2) lack of interest on the part of the private schools as the available resources for each schooling place purchased were well below their cost/student; and 3) practices of favoritism or "clientilismo" for certain schools.

^{1/} The World Bank reports that "almost 30% of low-income secondary students attend private schools," Secondary Education and Training in Brazil: Adapting to New Economic Realities, The World Bank: Washington, D.C. 1992, p. 27.

Private schools must be accredited and follow curriculum guidelines approved by the State Education Council. As of 1995, Paraná had 177 schools whose secondary enrollment represented approximately 11% of the total secondary enrollment, falling nearly 13% from 1987. This decline in enrollment can be attributed primarily to the high tuitions paid by students' parents. For example, the SEED found in a study conducted in February 1996, average monthly expenditure ranges anywhere between R\$40/month at the IPOLON (70% which is subsidized by the school itself) to R\$285/month in the *Colegio Positivo* -- almost three minimum salaries. These figures are in stark contrast with the State's expenditure per student which reaches only US\$133 per year. In other words, the average monthly tuition in Paraná's private schools is what the State spends per child a year.

Primary and secondary education in Paraná is administered by the State Secretariat of Education (SEED), and higher education is the responsibility of the State Secretariat for Science and Technology and Higher Education. While the Ministry of Education (MEC) is responsible for policy-setting, general core curriculum definition, resource targeting, and to a lesser extent, performance evaluation, there is a State Educational Council which oversees all matters that relate to the state educational system. Appointed by the Governor, the members of the Council approve curriculum changes and new courses, as well as certify private schools. Secondary teacher certification is the responsibility of the university where the individual received his/her training. As of 1990, Paraná's educational policy included for the first time teacher in-service training.

Management of the State's secondary education system is centralized yet there exists representation at the local level through the SEED's 30 district offices [*Nucleos Regionais de Educação* (NRE)] and through the recently created Regional Councils for Educational Development [*Conselho Regional de Desenvolvimento Educacional* (CREDE)] whose 15 members include representatives from the community, industry, students, parents, and service organizations. Moreover, Parent-Teacher Associations (APM) who basically are responsible for administering school lunch programs and minor repairs and maintenance, are showing an increased participation in aspects related to the quality of educational system in the last few years. Policies and norms are formulated at the SEED, approved by the State Council of Education, while decisions related to achievement evaluation, curriculum guidelines, financing, and hiring/firing of personnel remain in the State Secretariat of Education. School directors are elected by the community for two year period, and are required to take a 40 hour training course in school management.

Financing of the education system follows federally - established guidelines. Under the 1988 federal Constitution, the federal government must apply at least 18%, and the state and municipal governments at least 25% of its total tax receipts to education. Many states, in their own constitutions, have increased that percentage to 30%. Paraná has historically surpassed that minimum spending level: 35% in 1991, 38% in 1993 and 34% in 1994, equivalent of \$626 million. The federal Constitution also established in 1988 that for the following ten years, 50% of public resources which are being spent in education, must be spent

in basic education (*ensino fundamental*). With a proposed amendment to the Constitution, that figure will be increased to 60%, securing a minimum of \$300 per student per year (primary school only, comfortably above the CEPAL-recommended \$240/student).

In addition, the Constitution provides for a 2.5% payroll tax on all public and private businesses. These funds, *salario educação*, are then earmarked for basic education: 70% are utilized directly by the states, and the remaining 30% by the federal government. The majority of federally-administered funds is channeled through a National Fund for Educational Development and redistributed to the states for federal programs in support of basic education. The amounts distributed are inversely proportional to those resources collected by the states. Those funds used directly by the states are distributed proportionally to what they actually collected. Therefore, for those states with greater revenues, federal funds represent very little in terms of education budgets.

Until recently, the quality of education was not measured either in terms of student or teacher performance. With support from the World Bank, the Fundação Carlos Chagas has been retained to assist the SEED in the design of an *evaluation* instrument, its pre-testing, administration, for measuring student achievement in mathematics and Portuguese in the 4th and 8th grades and 10th grades (adding sciences/history) through 1998. A Unit within the SEED has been trained for proper test administration, data tabulation and interpretation 2/.

Box 1.2: Student Evaluation in Paraná

October 25 may very well become a date that all primary and secondary school students in Paraná come to dread. For on this day each year, fourth, eighth and eleventh graders will take state examinations to measure their achievement in Portuguese, and mathematics, and for the latter, science, history and geography as well. The State celebrated its first "Evaluation Day" in 1995 at the 4th grade only, 8th and 11 graders will be tested in 1996. These results will be widely disseminated among educators, students, parents, business leaders creating for the first time a general awareness of the importance of student evaluation, or in the words of the Secretary of Education, creating a "cultura de avaliação".

2/ In addition, Paraná will be participating in the UNESCO-IDB sponsored program -- Regional Laboratory for Evaluating Educational Quality -- comparing educational indicators across countries. Finally, the MEC is developing a national system of student assessment for both primary and secondary education, having carried out yearly evaluations since 1991 on an experimental basis. These tests were validated in 1994.

CONCEPTUAL FRAMEWORK AND PROGRAM PERFORMANCE INDICATORS

g performance indicators or "benchmarks" have been identified in order to assist both the Bank and the Borrower in monitoring Program success. These
ide for the preparation of each subsequent annual operative plan as they will be measured against Program objectives and discussed in the annual and other r

TABLE 1: CONCEPTUAL FRAMEWORK

ALL PROGRAM OBJECTIVES	VERIFIABLE INDICATORS BY PROGRAM COMPLETION 1/	MEANS OF VERIFICATION	ASSUMPTIONS
EFFICACY			
meets demand for quality secondary education	Increase in completion rate from 52 % to 75 % (60%) Total secondary enrollment increases from 310,000 to 450,000 students (370,000) Net Secondary enrollment increases from 26 % to 47 % (35%) Student achievement increases by 20 % (10%) At least 50 % of graduates will be employed within 9 months upon completion (30%)	Statistics from SEED Statistics from SEED Statistics from SEED Statistics from SEED Tracer studies	% of primary school graduates increase 18%; drop out rate for secondary school to 5%; transition rate from 8th to 9th g near 100%; some return of drop outs in regular secondary school. " " Labor Market conditions consistent with projections.
EFFICIENCY			
ased percentage of students from income families completing ary school	Percentage of graduates from bottom 40 % increases	Statistics from SEED	PQE succeeds in producing greater # of school graduates from low-income level
ased percentage of female students nical-vocational education centers	Percentage of female students graduating from the Regional Technical-Vocational Centers reaches 35 % (20%)	Statistics from SEED/RTVC	Cultural differences would not discourag enrollment in Technical-Vocational Cen
EFFICIENCY			
n produces graduates with a more use of resources	Reduction in Repetition from 14 % to 5 % (10%) Reduction in Drop out 16.5 % to 5 % (11%) Increase in Student Teacher Ratio from 22:1 to 36:1 (28:1) Policy and resource allocation decisions based on system data	Statistics from SEED Statistics from SEED Statistics from SEED Data updated on a regular basis	Teacher Unions do not block reforms

n targets, expected to be reached by the end of Year 3, are shown in parentheses.

TABLE 2: MONITORING OF PROGRAM PERFORMANCE INDICATORS						
COMPONENT	ACTIVITY	TOTAL UNITS	YEAR 1	YEAR 2	YEAR 3	YEAR 4
SECONDARY EDUCATION QUALITY IMPROVEMENT						
Information Supply	Implementation of School Mapping Exercise	1 exercise with database	100%			
Teacher Census	Implementation of Teacher Census	1 exercise with database	100%			
Adaptation & Equipment	Rehabilitation of Secondary Schools & purchase/installation of corresponding equipment	581 schools	15% (86)	30% (170)	30% (170)	25% (155)
School Assistance Units	Purchase & delivery of Mobile School Assistance Units	36 multiuse vehicles & notebook computers	100% (36)			
Improvement Educational Inputs	Assessment of current Secondary Curriculum (& Grades 5-8)	1 study	100%			
Curriculum Development	Schools operating with revised secondary curriculum	Application of new Curriculum/materials to all student population			100% 10th graders	100% 11th graders
Innovations	Installation of 120 science laboratories	120 laboratories	15% (18)	30% (36)	30% (36)	25% (30)
	Projects selected and implemented	300 projects in pedagogical innovations	20% (60)	20% (60)	20% (60)	20% (60)
	Purchase & installation of microcomputers with basic software packages in schools	8901 PCs		20% (1780)	30% (2670)	30% (2670)
	Purchase & delivery of textbooks in 5 core subject areas	728,000 textbooks		76% (560,000)	8% (56,000)	8% (56,000)
Reference Material	Purchase & distribution of library reference material (atlas, dictionary, encyclopedia, general titles/volumes)	87,998 reference materials		70% (61,599)	10% (8799)	10% (8799)

TABLE 2: MONITORING OF PROGRAM PERFORMANCE INDICATORS

COMPONENT	ACTIVITY	TOTAL UNITS	YEAR 1	YEAR 2	YEAR 3	YEAR 4
Resource Development Educational Professionals	Training and evaluation in the following:					
	Introductory Training (teachers)	3,956 participants	36 % (1476)	16 % (620)	16 % (620)	16 % (620)
	Workshops (teachers, principals, vice-principals, administrators, supervisors)	23,600 participants	25 % (5900)	19 % (4425)	19 % (4425)	19 % (4425)
	Seminars (teachers, principals, vice-principals, administrators, supervisors)	14,730 participants	24 % (3690)	19 % (2760)	19 % (2760)	19 % (2760)
	Study groups in schools (teachers)	23,400 participants	20 % (4680)	20 % (4680)	20 % (4680)	20 % (4680)
	Skills Upgrading/Retraining (teachers-particularly in sciences/math)	12,500 participants		39 % (4875)	39 % (4875)	22 % (2750)
	Esquema I (Pedagogical training for professionals)	3,000 participants	17 % (500)	33 % (1000)	33 % (1000)	17 % (500)
Human Development/Teacher Statute	Carry out studies and disseminate results	1 study dissemination seminars	100 % 100 %			
Teacher Performance	Selection and implementation of pedagogical projects under Vale Saber (1500), Vale Ensinar (200)	1700 projects	20 % (340)	20 % (340)	20 % (340)	20 % (340)
Interactive Magazine	Acquisition and installation of World Web Site, including development of SEED Home Page	1 Site and evaluation of experience		50 %	50 %	

TABLE 2: MONITORING OF PROGRAM PERFORMANCE INDICATORS

COMPONENT	ACTIVITY	TOTAL UNITS	YEAR 1	YEAR 2	YEAR 3	YEAR
Improvement Teacher Preparation						
Adaptation Regional Centers	Transformation of 5 schools to Regional Teacher Training Institutes	5 RTTIs with equipment and materials		60% (3)	40% (2)	
	Construction of RTTI Londrina	1 new RTTI with equipment and materials	100% (1)			
	Develop Curriculum and purchase of educational materials	Curriculum developed 10,000 library materials	100%	25% (2500)	25% (2500)	25% (2500)
	Purchase & installation of computers/educational software to meet curriculum requirements	6 RTTIs with computers and educational software		60% (4)	40% (2)	
	Carry out study for Future Teacher Demand	1 study	100%			
ORGANIZATION OF TECHNICAL-VOCATIONAL EDUCATION						
Adaptation Regional Centers	Transformation of existing schools into post-secondary Regional Technical-Vocational Centers/delivery & installation of equipment	11 RTVCs	27% (3)	27% (3)	27% (3)	18% (2)
	Microregional demand study for technical-vocational skills	1 study	100%			
	Development of curricula and acquisition of learning materials	Curriculum for each type of RTVC Materials reach students	100%	54%	27%	18%
STRENGTHENING EDUCATIONAL SYSTEM MANAGEMENT						
Planning	Development & implementation of Strategic Planning System (training)	1 system				100%
Information System	Analysis of Financial Options	1 study	100%			
	Development & implementation of MIS (and training)	1 system	100%			
System	Design & implementation of Teacher-Student-School Evaluation System	1 system			100%	
Development Unit	Formation/training of Curriculum Development Unit	1 system				
in School Autonomy	Pilot program carried out in 20 schools	20 schools		100%		
	Evaluation and dissemination of results	1 evaluation			100%	

TABLE 2: MONITORING OF PROGRAM PERFORMANCE INDICATORS

COMPONENT	ACTIVITY	TOTAL UNITS	YEAR 1	YEAR 2	YEAR 3	YEAR 4
Information/Marketing	Design of social marketing strategy, public awareness of reform process, dissemination of best practices in pedagogical innovations and school autonomy	1 strategy	100 %			
Physical Infrastructure/Equipment	Rehabilitated physical infrastructure in the SEED, and NREs	seminars/ materials distributed 11 buildings	20 %	20 %	20 %	20 %
Administration - CU	Coordinating Unit is equipped and fully operational	1 Unit		36 % (4)	36 % (4)	28 % (3)
			100 %			

CONFIDENTIAL: NOT FOR PUBLIC USE

CONFIDENTIAL ANNEX

The following paragraphs describe those sections within the Loan Proposal for the Secondary Education Improvement Program in the State of Paraná (BR-0167) which, during negotiations, were considered confidential by State authorities, and as such, have been eliminated from said document:

I. Recognition of Expenses

On page 5 of the Executive Summary, under "Other contractual conditions":

Recognition of expenses: consulting services in the amount of \$750,000 will be recognized as local counterpart investment (paragraph 3.23).

On page 28 of the document, in paragraph 3.23:

*"... at a cost of approximately US\$750,000..." and,
"... in this amount..."*

II. Approval of the *Lei de Diretrizes e Bases da Educação Nacional*

On page 2 in Chapter I of the document, under "Brazil: Investing in Human Resources,":

The LDB has already been approved by the Senate and should receive clearance from the House of State Representatives during the 1996 term.

PROPOSED RESOLUTION

**BRAZIL. LOAN /OC-BR. TO THE STATE OF PARANA. SECONDARY
EDUCATION IMPROVEMENT PROGRAM IN THE STATE OF PARANA**

The Board of Executive Directors

RESOLVES:

That the President of the Bank, or such representative as he shall designate, is authorized, in the name and on behalf of the Bank, to enter into such contract or contracts as may be necessary with the State of Parana, as Borrower, and the Federative Republic of Brazil, as Guarantor, for the purpose of granting the former a financing to cooperate in the execution of a secondary education improvement program. Such financing will be for the amount of up to one hundred million dollars of the United States of America (US\$100,000,000), or its equivalent in other currencies, except that of Brazil, which are part of the Ordinary Capital resources of the Bank, subject to the "Special Contractual Conditions" and the "Terms and Financial Conditions" set forth in the Executive Summary of the Loan Proposal.