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STAFF APPRAISAL REPORT

CHILE

SECONDARY EDUCATION QUALITY IMPROVEMENT PROJECT

April 11, 1995

Human Resources Operations Division
Country Department I
Latin American and the Caribbean Region

CURRENCY EQUIVALENTS

Currency Unit = Peso (Ch$)

EXCHANGE RATE
(as of November 1994)

US$1.00 = Ch$405
Ch$1.00 = US$0.002

FISCAL YEAR

January 1 - December 31

GLOSSARY OF ABBREVIATIONS AND ACRONYMS

CASEN	National Socioeconomic Survey (Encuesta de Caracterización Socioeconómica Nacional)
CPEIP	Teacher Training and Educational Research Center (Centro de Perfeccionamiento, Experimentación e Investigaciones Pedagógicas)
CPEU	Curriculum Planning and Evaluation Unit (Unidad de Planificación y Evaluación Curricular)
DEM	Municipal Educational Departments (Departamentos de Educación Municipal)
DEPROV	Provincial Educational Authorities (Direcciones Provinciales de Educación)
FNDR	National Fund for Regional Development (Fondo Nacional de Desarrollo Regional)
GDP	Gross Domestic Product (Producto Doméstico Bruto)
GTZ	German Ministry of Economic Development (Ministerio de Desarrollo Económico de la República Federal Alemana)
ICB	International Competitive Bidding (Licitación Pública Internacional)
IDB	Inter-American Development Bank (Banco Interamericano de Desarrollo)
INACAP	National Institute for Vocational Training (Instituto Nacional de Capacitación)
IVA	Value-Added Tax (Impuesto al Valor Agregado)
JUNAEB	National School Assistance and Scholarship Board (Junta Nacional de Auxilio Escolar y Becas)
LAC	Latin America and the Caribbean (América Latina y el Caribe)
LCB	Local Competitive Bidding (Licitación Pública Local)

LOCE	Constitutional Organic Law of Education (Ley Orgánica Constitucional de Enseñanza)
MECE	Primary Education Improvement Project (Proyecto de Mejoramiento de la Calidad y Equidad de la Educación Básica)
MECE-EM	Secondary Education Quality Improvement Project (Proyecto de Mejoramiento de la Calidad y Equidad de la Educación Media)
MIDEPLAN	Ministry of Planning (Ministerio de Planificación)
MINEDUC	Ministry of Education (Ministerio de Educación)
MIS	Management Information System (Sistema de Información Gerencial)
NGO	Non-Governmental Organization (Organización no Gubernamental)
NMV	Non-Monetary Voucher (Cupón no Monetario)
OECD	Organization for Economic Co-Operation and Development (Organización para la Cooperación Económica y Desarrollo)
ORT	Organization for Rehabilitation through Training (Organización para la Rehabilitación a través del Entrenamiento para el Trabajo)
PCU	Project Coordination Unit (Unidad de Coordinación del Proyecto)
PDE	School-based Educational Development Projects (Proyectos de Desarrollo Educativo)
RM	Metropolitan Region (Región Metropolitana)
SENCE	National Training and Employment Service (Servicio Nacional de Capacitación y Empleo)
SEREMIs	Ministerial Regional Secretariats (Secretarías Regionales Ministeriales)

SETMC	Secondary Education Teaching Materials Catalog (Catálogo de Material Didáctico de las Escuelas Secundarias)
S-H	Scientific-Humanistic Track (Escuelas Secundarias Generales)
SIMCE	Student Assessment System (Sistema de Información Sobre la Calidad de la Educación)
SPG	School Professional Groups (Grupos Profesionales de Trabajo de las Escuelas Secundarias)
TSN	Technical Support Network (Red de Asistencia Técnica)
T-VOC	Technical-Vocational Track (Escuelas Secundarias Tecnólogicas)
UNDP	United Nations Development Programme (Programa de Desarrollo de las Naciones Unidas)
UNESCO	United Nations Educational, Scientific and Cultural Organization (Organización de las Naciones Unidas para la Educación, la Ciencia y la Cultura)
USAID	United States Agency for International Development (Agencia para el Desarrollo Internacional de los Estados Unidos)

CHILE

SECONDARY EDUCATION QUALITY IMPROVEMENT PROJECT

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This report is based on the findings of 13 research studies financed by the Bank-sponsored Primary Education Quality Improvement Project in Chile (Ln. 3410-CH, MECE); a public consulting process including more than 35,000 educational system stakeholders; an international seminar carried out in November 1992; study tours to observe the secondary education systems of the Pacific Rim and OECD countries (carried out in April 1992 and June 1994 respectively); identification and preparation missions from October 1992 to November 1994, and an appraisal mission in January 1995. Mission members included Mmes./Messrs.: J. Prawda (Mission Leader), L. Pisani, J.Valenzuela, and N.Kamioka (LA1HR); A. Van Adams (AFTHR); and Mmes/Messrs: A. Artaza, D. Baker, A. M. Magaloni, R. McMeekin, L. Riveros, E. Schiefelbein, M. L. Tulic, and D. Waddington (Consultants). E. Velez (LA2HR) and J. Bregman (SA1PH) served as peer reviewers. Y. Duthilleul (Summer Assistant), J. Nannucci (Staff Assistant, PADTA), and J. Fernandez (Sr. Language Staff Assistant, LA1HR), provided assistance in the production of the report. This report was edited by W. Mayville. The Department Director, Projects Adviser, and Sector Division Chief are: Messrs. G. Nankani, O. Grimes, and A. Colliou.

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REPUBLIC OF CHILE

SECONDARY EDUCATION QUALITY IMPROVEMENT PROJECT

STAFF APPRAISAL REPORT

LOAN AND PROJECT SUMMARY

Borrower:	Republic of Chile
Implementing Agency:	Ministry of Education (MINEDUC)
Beneficiary:	MINEDUC
Poverty:	Not applicable
Amount:	US$35 million equivalent
Terms:	Repayable in 15 years, including 5 years of grace, at the Bank's standard variable interest rate
Commitment Fee:	0.75 percent on undisbursed loan balances, beginning 60 days after signing, less any waiver
Financing Plan:	See Para. 4.4
Net Present Value:	Not applicable.
Staff Appraisal Report:	No. 13880-CH
Map:	IBRD No. 26798

BASIC DATA SHEET

		Year
A. GENERAL COUNTRY DATA		
GNP per Capita (US$)	$3,073.0	1993
Area ('000 Km^2)	756.6	1994
Population Estimate (Millions)	13.6	1994
Density (Habitants/Km^2)	17.7	1992
Urban Population (% of Total)	85.1	1992
Population Forecast for Year 2000 (millions)	15.0	1994
B. SOCIAL INDICATORS		
Crude Death Rate (per 1,000)	7.0	1992
Annual Rate of Population Growth (%)	1.3	1990
Total Fertility Rate (births per women)	2.7	1992
Crude Birth Rate (per 1,000)	23.0	1992
Infant Mortality Rate (per 1,000)	17.0	1992
Life Expectancy at Birth (years)	72.0	1992
Daily Caloric Supply (per capita)	2,584.0	1990
Adult Illiteracy Rate (% of pop. over age 15)	6.6	1993
Average Schooling of Adults 15 years or older (years)	6.5	1992
C. GENERAL EDUCATION DATA		
Primary Gross Enrollment Age 6-13 (%)	98.0	1991
Secondary Gross Enrollment Age 14-17 (%)	76.0	1992
Preschool Net Enrollment Age 4-5 (%)	77.0	1990
Primary Net Enrollment Age 6-13 (%)	87.0	1991
Secondary Net Enrollment Age 14-17 (%)	55.0	1991
D. SECONDARY EDUCATION SUBSECTOR - ENROLLMENT AND TEACHERS		
Total Secondary Enrollment	652,815.0	1993
Municipal Enrollment Share (%)	51.2	1993
Private-Subsidized Enrollment Share (%)	31.0	1993
Private-Paid Enrollment Share (%)	10.0	1993
Corporation Enrollment Share (%)	7.8	1993
Rural Enrollment (%)	2.2	1993
Number of Teachers	43,094.0	1993

Sources: World Development Report, 1994, The World Bank, Washington 1994; World Educational Report, 1993, The World Bank, Washington, 1993; Social Indicators of Development, 1994, The World Bank, Washington, 1994; UNESCO Statistical Yearbook, 1993, UNESCO, Paris 1993; Compendio de Información Estadística, Ministerio de Educación, División de Planificación y Presupuesto, Santiago, Chile, 1992.

BASIC DATA SHEET (Cont.)

		Year
Uncertified Teachers (%)	5.7	1993
INTERNAL EFFICIENCY		
Repetition Rate S-H Track (%)	13.9	1993
Repetition Rate T-V (%)	15.2	1993
Dropout Rate S-H (%)	6.8	1993
Dropout Rate T-V (%)	7.8	1993
Transition Rate from Primary (%)	96.0	1991
Completion Rate in Municipal Schools, 1985-90 cohort (%)	61.6	1992
Completion Rate in Private-Sub Schools, 1985-90 cohort (%)	73.6	1992
Completion Rate in Private-Paid Schools, 1985-90 cohort (%)	87.7	1992
STUDENT ACHIEVEMENT		
Reading Achievement in S-H Track (%)	50.9	1993
Reading Achievement in T-V Track (%)	45.2	1993
Writing Achievement in S-H Track (%)	46.9	1993
Writing Achievement in T-V Track (%)	43.1	1993
Math Achievement in S-H Track (%)	48.9	1993
Math Achievement in T-V Track (%)	43.7	1993
E. EDUCATION EXPENDITURE DATA		
Total Govt. Expenditure for Educ. (in Ch$ 1992 billion)	438.1	1992
Total Govt. Expenditure for Educ. (in US$ 1992 billion)	1.2	1992
Total Educational Expenditure (%GDP)	3.0	1992
Educational Expenditure (% of total Gov. Expenditure)	11.2	1992
Total Expend. for Preschool and Basic Ed. (% of total Educ. Exp.)	61.5	1992
Total Expend. for Secondary Education (% of total Educ. Exp.)	15.7	1992
Total Expend. for Higher Education (%of total Educ. Exp.)	19.8	1992

DEFINITIONS

Adult Illiteracy Rate	Percent of individuals over the age of 18 who do not know how to read or write.
Achievement Rate	Percentage of correct answers on a given standardized cognitive achievement test.
Average Schooling of Adults	Average years of formal schooling completed among individuals over the age of 15.
Cohort	A group of individuals having a statistical factor (such as age, class, or year) in common.
Completion Rate	Average number of students completing their four-grade secondary school in either of both tracks as percentage of those entering in a given year, regardless of the number of years it takes them.
Crude Birth Rate	Number of births per 1,000 population in a given year.
Crude Death Rate	Number of deaths per 1,000 population in a given year.
Gross Enrollment Ratio	Children of all ages enrolled in schools at a particular level of education as a percentage of the population within the age-level defined for that particular education level.
Infant Mortality Rate	Number of deaths of infants under one year of age in a given year per 1,000 live births in that year.
Internal Efficiency	Ratio of learning (a non-monetary outcome of education) to the costs of educational inputs. Internal efficiency addresses the question of how funds within the education sector are allocated. The objective is to obtain the greatest educational output for any given level of spending.
Life Expectancy at Birth	Average number of years an infant would live if the current age/sex-specific mortality trend prevailing at the time of birth were to continue.
Net Enrollment Ratio	Percentage of children of a given age-group enrolled in school at a particular level of education.

Rate of Population Growth	Rate at which a population is increasing (or decreasing) in a given year due to a surplus (or deficit) of births over deaths, expressed as a percentage of the total population.
Total Education Expenditure	Federal spending on education plus municipal resources allocated to education as well as private, nonsubsidized spending at all levels of education. This also includes investments in education allocated through the Ministry of Interior.
Total Fertility Rate	Average number of children who would be born alive to a woman during her lifetime if she were to pass through her child-bearing years conforming to the age-specific fertility rates of a given year.
Transition Rate	Percentage of primary (basic) education graduates continuing their freshman secondary education in the same calendar year.

CHILE

STAFF APPRAISAL REPORT

SECONDARY EDUCATION QUALITY IMPROVEMENT PROJECT

1. ECONOMIC AND SOCIAL BACKGROUND

A. Recent Economic Trends and Future Prospects

1.1 **Background.** Chile's first democratic government, headed by President Aylwin, ended its term on March 11, 1994. A second democratic government, under President Frei, was inaugurated immediately thereafter. During 1989-94, Chile achieved an impressive economic record: GDP averaged 7.1 percent annual growth; inflation declined to an annual rate of 8.9 percent; and unemployment remains at a low 6.5 percent. The balance of payments continued to register surplus due to inflow of long-term capital and direct foreign investment. As a consequence, the Central Bank accumulated ample reserves (the equivalent of almost ten months of imports by the end of 1994), which has led to repeated nominal appreciations of the peso.

1.2 **Employment.** Uninterrupted economic growth has increased the overall level of employment, especially in the non-tradable sectors (construction, commerce, personal services, transport, communication, and financial services). The economy now operates at close to full employment. Although the unemployment rate has risen from 5.3 percent in 1989 to 6.5 percent in 1994, it is expected to fall due to continued economic growth of around 6.8 percent until the end of the decade. The general increase in employment also contributed to an increase in the employment of women. The participation rate of women in the labor force increased from 31 percent in 1990 to 33.5 percent in 1993. Higher employment has exacerbated the shortage of skilled labor, especially in the construction and manufacturing sectors. Real wages increased on average by 4.4 percent over the 1990-94 period.

1.3 **Role of the Private Sector.** The government has strongly supported the establishment of a dynamic private sector. The vast majority of Chilean firms are small (employing from 10 to 49 workers), yet accounted for less than 20 percent of total sales in 1992 and had a stagnant growth rate. Growth is strongest among large firms (employing more than 50 workers), which showed an annual average growth rate of nearly 10 percent. Chile's exports increased from 26 percent of GDP in 1985 to 30 percent in 1992, yet small firms continue to produce a small share of exports, which are mainly produced by large firms.

1.4 **Medium-Term Outlook.** The Chilean authorities estimate that in 1995, economic growth will be around 6 percent. Inflation is expected to fall from 8.9 to 8 percent. Projections envisage that the economy can grow annually at an average of 6.8 percent over the next ten years, driven mainly by strong export growth of almost 10 percent per year. The external balance will continue to improve as copper prices should remain high, along with a rapid

increase in non-traditional exports. The current account deficit (0.9 percent of GDP in 1994), should remain modest. Foreign reserves will continue to increase as capital inflows are expected to remain strong. The fiscal situation is expected to continue to be sound, although social expenditure and infrastructure investments will continue to increase.

1.5 The above scenario, or even one calling for a slightly higher growth, will require increases in the productivity and efficiency of the economy, especially when considering the challenge presented by an appreciating peso. This growth scenario will entail some fundamental improvements in the stock of human capital and flexibility of the labor market, increased absorption of new technology, and a surge in exports. Clearly a number of exogenous factors, such as the price of copper and other international commodities, global interest rates and growth, and regional trade prospects, will shape the frontier which Chile will be pursuing. However, endogenous factors of paramount importance, such as increasing the efficiency and enhancing the quality of education while improving educational equity and strengthening sectoral management, will be critical in determining whether the medium-term growth outlook will become a reality.

B. Social Sectors

1.6 Chile's social development over the past three decades has been impressive. While Chile's GNP per capita of US$3,073 in 1993 places it among the lower end of the scale for middle-income countries, its social indicators closely resemble those observed in developed countries. Chile's average life expectancy at birth of 72 years (1992) is well above the Latin American average of 67.5 years; infant mortality rate is relatively low (17 per 1,000); the prevalence of moderate and severe malnutrition (measured by weight-for-age) among children under six years of age is less than 1 percent (1988), similar to that of developed countries. There is universal access to eight grades of basic education. The average level of educational attainment among the population 15 years of age or older in 1982 was about 6.5 years, reaching 10 years for the youngsters under 15 years old, and 12 years for household heads in the fifth quintile of income. The overall adult literacy rate of nearly 94 percent gives Chile the second lowest illiteracy rate in Latin America (next to Uruguay). Income distribution improved over the 1990-92 period as the gap between the richest 20 percent and the poorest 20 percent became slightly narrower (Annex A, Table A-1). According to the National Socioeconomic Survey (CASEN), the number of people living in poverty dropped by more than 800,000 during the 1990-93 period. CASEN estimates that the total number of poor Chileans now stands at approximately 4.3 million, 33 percent of the total population, down from 45 percent in the late 1980s.

1.7 **Social Expenditure**. Social expenditure in education, health, housing, social security, and other related sectors accounted for about 56 percent of total government expenditure (2.5 percent higher than in 1989) and ranked as a first priority in government expenditures during the 1990-1993 Aylwin Administration (Annex A, Table A-2). Social expenditure increased from 13.9 percent in 1985 to 15.3 percent of GDP in 1993, while maintaining fiscal balance (Annex

A, Table A-3). The increase was financed entirely by a tax reform carried out in 1990. Expenditures for education, which accounted for about 20 percent of social expenditure and 3 percent of GDP, increased by 33 percent in real terms during this period. This was attributed mainly to the effects of the: (i) increases in subsidies to schools (Annex A, Table A-4); (ii) increases in teachers' salaries due to the enactment of the Teachers Statute Law (1991); and (iii) Bank-financed Primary Education Quality Improvement Project (MECE, Loan 3410-CH) . Table A-5 in Annex A shows development indicators for Chile in several sectors.

2. EDUCATION SECTOR: DESCRIPTION AND ISSUES

A. Overview

2.1 **Education Structure.** The Chilean education system begins with preschool for children under six years old. Preschool education is a noncompulsory service offered by an array of public and private institutions to promote children's social, psychomotor, and emotional development. Primary (or basic) education consists of an eight-year compulsory cycle for children 6 to 13 years old. Secondary education is provided to students 14 to 17 years old who have completed primary education. The structure of secondary education involves a four-year cycle that is divided into two tracks: (a) a scientific-humanistic (S-H) curriculum that prepares students for further studies through tertiary education; and (b) a technical-vocational (T-VOC) curriculum to prepare students for work immediately after graduation. The first two grades of secondary education (9 and 10) are known as the first cycle, and the last two grades (11 and 12) are known as the second cycle. Secondary graduates who decide to continue their studies can opt for the Centers for Technical Training which offer short-term, non-academic training courses, or for tertiary education consisting of the universities or the professional institutes. Special or differentiated education is provided to children 6 to 14 years old with learning disabilities. Adult education programs are directed at individuals 16 years and older who want to learn to read and write or who need to complete primary or secondary education.

2.2 **Non-Formal Vocational Training.** Alongside the formal technical-vocational training provided by the T-VOC secondary schools, Chile has a parallel, independent, non-formal system that embraces several programs for job-seekers and individuals already in the labor force. This non-formal system is supervised by the National Training and Employment Service (Servicio Nacional de Capacitación y Empleo, SENCE). SENCE is governed by representatives of labor unions, employers' associations, and the Government, and is financed by levies on enterprise payrolls[1/]. Currently, there are more than 1,700 authorized providers of training services (which include universities, professional institutes, and training centers, among others) which SENCE uses to provide training to adults and youth from about 7,700 small, medium, and large

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1/ Equivalent to 1 percent of the worker's payroll or three minimum wages (whichever is smaller).

companies. In 1992, the SENCE program trained over 261,000 workers, representing about 7.4 percent of the total formal labor force. The principal areas of training were: administration, manufacturing, information technology, and commercial services.

2.3 **Organization.** The basic functions of the educational sector were reorganized following the enactment of Law 18,956 on March 8, 1990. In accordance with this Law, the Ministry of Education (MINEDUC) is responsible for policy-setting, core curriculum definition, supervision, evaluation, resource targeting, and financial monitoring through its central, 13 regional (SEREMIS), and 40 provincial departmental (DEPROV) offices, in a manner that is largely independent of the municipalities. Municipalities are in charge of the daily operation of the public schools, including: hiring and firing of teachers; paying personnel salaries under the framework established by the Teacher Statute Law, and maintaining and improving school infrastructure. Educational services are provided by municipalities and private proprietors, with MINEDUC monitoring the quality of the services delivered. There are 334 municipalities which provide educational services through about 280 Education Departments (DEM) and nearly 90 Corporations (Corporaciones), which are non-profit, publicly subsidized autonomous entities presided over by the mayor of the respective municipality, and comprising important employer associations. The organization charts of MINEDUC, SEREMIS, and DEPROVs appear in Annex B, Chart B-1, while that of the municipalities appears in Annex B, Chart B-2.

2.4 Approximately 143,000 teachers in about 15,700 schools (61 percent municipal, 28 percent private-subsidized, 10 percent private paid, and 1 percent Corporations) provide preschool, primary, secondary, and special education to the country's estimated 3 million students (Annex C, Tables C-1, C-2, and C-3). In addition, the tertiary education system enrolls over 285,000 students in universities, 43,000 students in the professional institutes, and nearly 74,000 in the Centers for Technical Training. Of the total pre-university enrollment, 8.5 percent were registered in preschool, 68.7 percent in primary, 21.7 percent in secondary (13 percent in the S-H track and 8.7 percent in the T-VOC track), and 1.1 percent in special education. The Metropolitan Region (RM) of Santiago comprises nearly 40 percent of total enrollment; the regions of Valparaiso (V), Concepción (VIII), and Puerto Montt (X) comprise another 29.5 percent of the student population, with the remaining 30.7 percent scattered throughout the other nine regions. From 1981 to 1993, total enrollment grew annually by only 0.4 percent, from 2.84 million to 3 million. This limited expansion was caused by a decrease of 3.4 percent in primary education enrollment, even though there was an increase in the preschool, secondary, and special education enrollments. The main reasons for the decrease in primary education enrollment was a decline in the birthrate from 1.9 percent in 1970 to 1.7 percent in 1987, and a reduction in primary education repetition rates among first graders (from 15.5 percent in 1982 to 9 percent in 1989).

2.5 **Primary Education Quality Improvement Project (MECE).** In spite of the administrative educational reform undertaken by the Chilean authorities during the past decade, and by the achievements in solving the traditional problems of literacy and access to primary education, Chile's basic education system, especially municipal and government-subsidized private schools, has faced issues of internal inefficiency, low quality, inequity, and weak

management[2/]. The Government which was elected in 1990 launched a US$243 million educational project (MECE), partially financed by the Bank (Loan 3410-CH of US$170 million), to address the above-mentioned issues in basic and preschool education.

B. Basic Statistics in Secondary Education

2.6 **Curriculum**. The Constitutional Organic Law of Education 18,962, of March 10, 1990 (Ley Orgánica Constitucional de Enseñanza - LOCE), assigns MINEDUC the responsibility of setting the secondary education core curriculum (for both the S-H and T-VOC tracks), and empowers secondary schools with the task of defining the complementary curriculum and establishing the school study plan and syllabi. During the 1990-93 period, only a few private-paid secondary schools, mostly located in high-income urban areas, were able to implement the recommendations of the LOCE. Most secondary schools in Chile do not have the technical skills and instruments required to implement the recommendations of the LOCE. The few school-study plans and syllabi that have been implemented have been characterized by: (i) increases in the weekly study load; (ii) incorporation of new course materials; and (iii) differentiated plans in the first (grades 9 and 10) and second (grades 11 and 12) cycles of secondary school.

2.7 The secondary school year comprises 38 weeks of classes, equivalent to 1,221 hours of 45 minutes instruction in the first cycle and 1,332 hours in the second cycle. The teacher's weekly hours of work may not exceed 44 chronological hours for the same employer. These are distributed in 33 hours of classroom work per week and 11 hours for planning, preparation of projects and tests, and other non-teaching, school-related activities. Each secondary school is entitled to set its own schedule. In general, classes in secondary schools are held during the morning for the second cycle, and in the afternoon for the first cycle.

2.8 The four-year, subject-based curriculum for the S-H track is highly fragmented and includes 16 subjects (Spanish, Math, Chilean History and Geography, Universal History and Geography, Philosophy, Civics, Economics, Foreign Language, Biology, Physics, Chemistry, Artistic Education, Sports, Religion, and two electives). The curricula for the four-year T-VOC secondary schools, which is also subject-based, consists of three highly fragmented areas of study: (i) basic courses including Spanish, Math, Chilean History and Geography; (ii) professional courses containing subjects related to potential jobs in the commercial, technical,

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2/ This administrative reform consisted of: (a) transferring the preschool, primary, and secondary schools to the country's 334 municipalities; (b) transferring a portion of the vocational secondary schools to the Corporations created by associations of employers; and (c) encouraging through a subsidy payment per student (subvención) private individuals and Non-Governmental Organizations (NGOs) to create tuition-free schools.

industrial, agricultural and maritime subsectors of the economy; and (iii) complementary courses oriented toward the preservation of the environment, self-improvement, and the appreciation of the arts and sports.

2.9 **Enrollment.** Total secondary education enrollment in 1993 amounted to nearly 653,000 students, of which 60 percent were registered in the S-H track and 40 percent in the T-VOC track. About 51.2 percent of the total enrollment attended municipal secondary schools, 38.8 percent government-subsidized private schools (7.8 percent in schools administered by the Corporations), and 10 percent attended private-paid schools. Nearly 40 percent of the enrollment was concentrated in the Metropolitan Area of Santiago, another 30 percent in the Regions of Valparaiso (V), Bio Bio (VIII), and Los Lagos (X), while the remaining nine regions of the country absorbed 30 percent of total enrollment. Secondary education in Chile is mainly an urban phenomenon, since almost 98 percent of total enrollment is concentrated in areas with 2,500 inhabitants or more. The regions with the highest concentration of rural secondary enrollment are: Los Lagos (X), Maule (VII), and Aisen (XI) (Annex C, Table C-4). Females represent over 51 percent of the total enrollment.

2.10 The gross enrollment rate of the 14-17 age cohort has steadily increased in the past two decades, from 50 percent in 1970 to over 76 percent in 1992, at an annual rate of 1.9 percent (Annex C, Table C-5). This enrollment rate is one of the highest in Latin America (Annex C, Table C-6), and compares to countries with which it competes in world markets, such as Korea, Hong Kong, and Singapore. Yet, it still lags behind the main OECD countries (Annex C, Table C-7). During the last decade, enrollments in the S-H track decreased 0.4 percent, whereas enrollments in the T-VOC track increased by 62 percent. Enrollment trends also show changes by type of provider: between 1990 and 1993, enrollments in secondary municipal, private-subsidized, and Corporation schools decreased by 8.8, 13.9, and 9.3 percent respectively, while in the private-paid secondary schools it increased by 5.6 percent.

2.11 Within the T-VOC track, students are enrolled in one of five areas (among which are more than 30 specializations): 41.8 percent in the commercial sector; 35 percent in the industrial sector; 16.7 percent in the technical sector; 4.8 percent in the agricultural sector; and 1.7 percent in the maritime sector. Within the five T-VOC areas mentioned above, women's enrollment tends towards the commercial and technical specializations.

2.12 **Teachers and Supervisors.** From the 50,000 total secondary education teachers, approximately 88 percent are assigned to in-classroom teaching positions, while the rest hold positions as school principals. Almost 45 percent of the teaching force is accountable to the municipal authorities, 29 percent to government-subsidized private secondary school proprietors, 20 percent to private-paid secondary owners, and nearly 6 percent to the Corporations. There are 163 secondary education supervisors in the system of which 74 percent are assigned to the S-H track and 24 percent to the T-VOC track, yielding an approximate ratio of 9 publicly subsidized schools per supervisor in the S-H track and 13 in the T-VOC track.

C. Relevant Issues in Secondary Education

2.13 The following diagnosis of Chile's secondary education system stems from: (i) 13 research studies financed under the MECE project[3/]; (ii) a public consultation process involving more than 35,000 parents, teachers, students, community leaders, and scholars, carried out during 1992; (iii) an international workshop of secondary education scholars from around the world, carried out in November of 1992; and (iv) a study tour of the secondary education systems of Korea, Singapore, and Malaysia, carried out in 1992.

2.14 Chile's secondary education system has become increasingly outdated, inadequately addressing new demands placed upon it by society and individuals in general. These new demands stem from the global transformations associated with modernization which have affected forms of production, family and social relationships, and political and cultural processes and institutions. In the productive domain, modernization has implied increasingly complex productive processes and rapid pace of technological change, which in turn has increased the demand for a more flexible, retrainable and capable labor force. In the cultural sphere, modernization has implied globalization of communications, resulting in an explosive expansion of information and multi-media stimuli, which in turn requires that individuals have a much deeper cognitive foundation than in the past. In the political domain, the emergence of a more participatory and democratic order requires a better distribution of knowledge and societal codes, which are key for ensuring social participation in public debate and decision making. Against this backdrop of complex demands, there is consensus among experts and lay alike, that Chile's secondary education institutions, curriculum, pedagogical processes and school practices, and results are anachronistic, lacking, and inequitable. Thus the current secondary education system in Chile is inadequately positioned to respond to societal, economic, and individual expectations.

2.15 The main issues affecting the Chilean secondary education system that will be addressed by the project are: (a) low external efficiency manifested by the educational system's failure to respond to the demands of individuals and to provide the higher-order thinking and problem-solving skills required by tertiary education institutions, and the labor market; (b) low internal efficiency reflected in high repetition and dropout rates, resulting in wastage of financial and physical resources; (c) unacceptably low levels of quality indicated by low student cognitive achievement; (d) high inequality expressed by the social distribution of educational opportunities and results; and (e) weak institutional capacity to induce a modernization reform process.

2.16 **External Inefficiency**. There is a growing mismatch between the Chilean secondary education's outcomes (student's levels of preparation) and the demands of individuals concerned,

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3/ In the areas of curriculum development and evaluation results (4 studies), pedagogical processes and school practices (3 studies), internal efficiency (1 study), external efficiency (3 studies), pre and in-service teacher training (1 study), and educational learning inputs (1 study)

the productive sectors, and the higher education system. This mismatch is caused by: (i) a rigid and outdated secondary education structure; (ii) low capacity to update and review curriculum and study plans; and (iii) weak linkages to the productive sector, especially among T-VOC schools.

2.17 The secondary education structure, conceived in the 1940s and consolidated in the 1960s, requires that graduates from primary school, at age 14, choose between two tracks without any subsequent possibility of changing. Presently S-H schools are oriented only toward preparing students for the university, even though fewer than half of all its students actually enter a higher education institution. On the other hand, T-VOC schools are oriented solely towards preparing mid-level technicians, even though, according to the latest 1990 CASEN household survey, 63 percent of its graduates are not absorbed by the labor market a year after graduation.

2.18 The subject-based curriculum was last reviewed in 1981, before passage of LOCE (para. 2.6), when MINEDUC was still solely responsible for setting the curriculum for both tracks. The curriculum has since undergone two slight modifications, in 1984 and 1989 respectively. Nevertheless, since LOCE empowered MINEDUC with setting the core curriculum and the secondary schools with the task of defining the complementary curriculum, study plans, and syllabi, the system has been without the capacity to do so. Among schools, only some private-paid secondary schools have had the technical skills required to design and implement their supplementary curriculums. Most schools also lack the necessary instruments to implement the intended core curriculum, something that tends to go undetected and unattended by MINEDUC.

2.19 The productive and service sectors are not consulted on the current contents of the T-VOC curriculum or ways to improve it; setting of certification standards; vocational and placement opportunities; or recommended strategies for carrying out student and in-service teacher training programs. The poor response of the T-VOC track to labor market demands is reflected by the highly fragmented subject-based curriculum which provides mainly over-specific manual skills, and limits the provision of a minimum set of higher-order general and specific skills[4/] and theoretical knowledge demanded by the modern, privately driven, export-oriented Chilean economy. The Government has not created a favorable environment for expansion and improvement of private sector involvement in preemployment vocational schooling provided by the T-VOC secondary schools. An exception here is constituted by the 88 T-VOC secondary schools administered by the Corporations, which are better funded, better equipped, and have a

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4/ General skills such as: (i) reading, writing, performing arithmetic and mathematical operations, listening, and speaking; (ii) thinking creatively, making decisions, solving problems, visualizing, knowing how to learn, and reasoning; and (iii) displaying responsibility, self-esteem, sociability, self-management, integrity, and honesty. Specific skills such as: (iv) identifying, organizing, planning, and allocating resources (time, money, materials, and people); (v) working with others in a harmonious way; (vi) acquiring and using information; (vii) understanding complex systemic inter-relationships; and (viii) working with a variety of technologies.

closer relationship with a targeted group of enterprises than the rest of the municipal and private-subsidized T-VOC secondary schools.

2.20 **Internal Inefficiency.** Although Chile has a high transition rate between primary and secondary education and a high gross enrollment rate at the secondary level (76 percent), as compared with the weighted rate for Latin America (47 percent), low internal efficiency remains an issue. Low coverage, especially among rural and at-risk populations, high repetition and dropout rates, and an excessively long average time to complete the prescribed four-year secondary cycle, result in high wastage of human and physical resources.

2.21 **Coverage.** About 24 percent of the 14 to 17 year-old cohort (230,000 individuals) are not covered by the Chilean secondary education system. There are two possible explanations for this situation. From the demand side, it is possible that youngsters perceive completing secondary education as having a high opportunity cost. This hypothesis is substantiated by tracer studies showing that, for example: (i) S-H students who dropped out after their second year gained employment at a rate similar to that of students finishing the full four years; and (ii) students from the T-VOC track who dropped out after their second year had higher employment levels than their S-H counterparts who actually finished the full secondary education four-year cycle. This demand side hypothesis seems to be supported by the progressively deteriorating rate of return to secondary education in Chile (Annex C, Table C-8). From the supply side, circumstantial evidence indicates that some students, especially in marginal urban and rural areas, lack access to secondary schools. This seems to be mainly a result of: (a) lack of physical facilities that would be too costly to build and operate in remote rural areas; and (b) inadequate special assistance programs to cover the costs of transportation, tuition, and subsistence.

2.22 **Repetition and Dropout Rates.** Overall repetition at the secondary level was estimated at 12 percent in 1993. Repetition was highest in the first grade of secondary education at 16.2 percent and remained high through the third grade before it decreased to 5.6 percent in the fourth grade. Municipal schools show a repetition rate of 14.4 percent, which compared to subsidized (11 percent), Corporations (9.8 percent), and private-paid schools (4 percent), is significantly higher (Annex C, Table C-9). Average repetition rates are higher in the T-VOC track (13.5 percent) than in the S-H modality (11 percent). Regions II (Antofagasta), III (Atacama), IX (La Araucanía), and XI (Aisén) registered the highest repetition rates in the country ranging from 14 to nearly 18 percent (Annex C, Table C-10). The average dropout rate for secondary education was 6.7 percent in 1992 (Annex C, Table C-9). The incidence of dropout was highest during the first three years of the secondary cycle, especially the first year which averaged 9.8 percent. A comparison by type of school shows that the dropout rate was highest in municipal schools (8.4 percent), followed by private-subsidized (5.8 percent), Corporations (5.4 percent), and private-paid schools (2.5 percent). Average dropout rates are slightly higher in the T-VOC track (7.1 percent) than in the S-H modality (6.6 percent). Regions I (Tarapacá), III (Atacama), IX (La Araucanía), and XI (Aisén) registered the highest dropout rates in the country ranging from 7.8 to 8.1 percent (Annex C, Table C-10).

2.23 **Average Time to Complete the Secondary Education Cycle.** The average time to complete the prescribed four-year secondary cycle is 5.3 years, down from 5.7 years in the late seventies. This shows a secondary education cohort completion-rate increase from 62.3 percent to 68 percent for the 1975-80 and 1985-90 cohorts, respectively. At the outset, these data reveal improvements in the system's internal efficiency. However, cohort analysis by types of secondary schools indicates a different situation. The average completion time was markedly higher among municipal schools (5.7 years), while lower in private-subsidized schools (5 years), and lower still in private-paid schools (4.4 years) (Annex C, Table C-11). In terms of completion rates for the 1985-90 cohort, 61.6 percent of students from municipal secondary schools completed the cycle, compared to 73.6 percent from private-subsidized schools and 87.7 percent from private-paid schools. These inefficiencies, compounded with the ones manifested in the basic cycle (late primary school entrance, and high repetition and dropout rates in the first two grades, for example), cause nearly 31 percent of those enrolled in the first grade of secondary education, and 32 percent in the second grade, to lag behind the expected standard age (Annex C, Table C-12).

2.24 The system's low internal efficiency results from: (i) the unavailability of learning inputs such as textbooks, school libraries, teaching materials, computer resources, and essential infrastructure; (ii) the lack of teachers trained in modern pedagogical techniques and the use of learning inputs; (iii) inadequately targeted special-assistance programs for low-income students; and (iv) the lack of a curricular alternatives program for at-risk students.

2.25 **Low Quality.** Chile's secondary education system displays unsatisfactory levels of learning in key areas (especially among low-income students), and deficient internal[5/] and external[6/] evaluation measuring systems to monitor student and system performance. A nationally representative evaluation in Spanish, math, and general abilities[7/] was carried out in 1992. The measurement in Spanish revealed that the average of correct answers for 9th, 10th, and 12th grade students from the private-paid subsystem was slightly over 50 percent, whereas

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5/ Through internal evaluations (essays, quizzes, tests, homework, and classroom questions), teachers discover what students already know and what they still need to learn. Internal evaluations are early-warning signs of learning problems, and effective detection mechanisms of high-risk students, which teachers can then correct before they worsen.

6/ Through external evaluations by means of standardized tests, educational authorities discover the discrepancies between the intended (official) curriculum, the one being taught by the teachers, and the one being learned by the students. External evaluations are used to measure achievement of national educational goals, targets, and policies.

7/ The test was carried out by a team of specialists contracted by MINEDUC. The team used a random sample of 6,000 students from 6 different regions, attending 138 secondary schools of both types. The test criterion used was the minimum levels of achievement defined for the different tested grades in the official syllabus.

students from the municipal and private-subsidized schools attained only between 39 and 48 percent of correct answers. For math, the results were even worse, with the elite of private-paid schools answering around 40 percent of the questions correctly, and the municipal and private-subsidized schools achieving between 20 and 29 percent correctly. These tests also seem to indicate that student achievement in Spanish and math worsens as they progress through the secondary system (Annex C, Table C-13). Low learning is generated by: (i) the use of outdated pedagogical practices; (ii) the lack of appropriate learning inputs; and (iii) the lack of internal evaluation instruments.

2.26 **Pedagogical Practices.** The predominant teaching practices in the Chilean secondary education system are characterized by their recourse to traditional "frontal teaching" forms manifested by: excessive use of dictation; strong emphasis on drilling; unilateral transmission of information by the teacher; strict correspondence between what is directly taught and what is tested in internal evaluations; and the rare use of textbooks, teaching materials, computers, school libraries, and project research methodologies. Available evidence suggests that teaching materials are not presented in a rational, orderly, and integrated fashion, and that students are not allowed to practice and apply what they have learned, particularly with regard to integrating knowledge taught with their own life experiences.

2.27 Teachers are a key factor in delivering quality educational services. There is evidence to suggest that many secondary education teachers lack the necessary knowledge of the subject matter, while others lack modern teaching practices. Supervisors on the other hand, are supposed to provide support to directors and teachers at the school and classroom level. Presently, however, supervisors for secondary education are ill-prepared to carry out their functions appropriately, due to: (a) a lack of preparation on appropriate classroom problem-solving pedagogical strategies and techniques; and (b) insufficient resources to serve the large number of existing schools and teachers. As a result, most rural secondary schools are not visited by the supervisors during the school year.

2.28 **Learning Inputs.** The use of learning inputs (textbooks, teaching materials, teacher guides, school libraries, computers, and school infrastructure) in an appropriate manner has been shown to increase the quality of education. Chile does not have an official policy concerning the availability and use of educational inputs in secondary schools. In striking contrast to primary education, MINEDUC neither distributes texts to secondary students, nor provides guidelines for teachers on their correct application. Consequently, manufacturers of learning and teaching materials lack the necessary signals needed to guide their design and supply. Also, there is limited institutional capacity, both at MINEDUC and among teachers, to correctly evaluate learning materials available in the market.

2.29 Since textbooks are not required, MINEDUC does not attempt to ensure that books currently used are adequate. Suggested bibliographies are based more on what has been historically used in different subject areas than on any careful consideration on their content. Still, textbooks are used in some schools, especially private-paid schools, while in other schools, photocopies of old editions are common. When textbooks are used, they often contain exercises

and lessons that fail to promote higher-order skills. Municipal and subsidized schools often have an inadequate supply of supplementary teaching materials such as globes and educational videos, slide projectors, natural science kits, and physics and chemistry sets; lack laboratories and workshops, in spite of the existing S-H study plan requiring their use; and also lack more expensive but still cost-effective resources, such as classroom libraries and computers. Private and Corporation schools have a larger, yet still inadequate, supply of these materials. Most schools lack educational computer software, which has become a promising alternative to laboratory and workshop equipment for science teaching.

2.30 Many secondary schools lack the essential infrastructure necessary to comply with MINEDUC's requirements. Data from 1985 show that 22.5 percent of schools do not have adequate space or facilities to carry out their programs of study. When schools that combine primary and secondary school classes are considered, the above figure rises to 28.3 percent.

2.31 **Evaluation.** Neither MINEDUC nor schools and teachers currently have the capacity to adequately monitor and evaluate the implementation of the intended curriculum and student performance. The absence of proper internal and external evaluations in Chile has contributed to the reduction or dilution of educational content, and has deprived the system of key self-correction and monitoring mechanisms, with serious implications for the quality of teaching and student results. Teachers tend to evaluate students mainly by their memorization of fragmented information taught by them. Up to 1992, there was no cognitive achievement measuring system for secondary education. The Bank-financed MECE project laid the groundwork for establishing one, which led to a pilot test in 1992.

2.32 **Inequities.** Inequities in the delivery and quality of secondary school services are reflected by disparities in: (i) participation rates; (ii) type of schools attended; (iii) standardized academic achievement; and (iv) access to higher education and employment outcomes.

2.33 **Participation Rates.** Only 73 percent of the lowest-income quintile individuals of secondary school age have access to the system. When they do, they usually attend lower-quality municipal secondary schools. Meanwhile, 96 percent of the higher-income quintile individuals participate, most by attending the better-equipped private-paid schools (Annex C, Table C-14). Nearly 52 percent of the rural 14 to 17 year-old cohort does not attend secondary school (Annex C, Table C-15). Distribution of secondary educational coverage by region reveals differences of up to 25 percentage points - the first region has the highest coverage (92 percent) while the VII, IX and X regions have less than 67 percent (Annex C, Table C-15). Only 59 percent of municipal schools students finish the full cycle in comparison to 88 percent of students attending private-paid secondary schools. It takes municipal secondary students an average of 1.3 more years to graduate from the four-year cycle than private-paid students.

2.34 **Type of School Attended.** There is a clear relation between a student's socio-economic status and the type of school attended: 82 percent of municipal school enrollments come from low-income households, compared to only 58 percent from private-subsidized schools. Conversely, private-paid school enrollments are almost solely made up of students from upper-

income households (Annex C, Table C-16). Not surprisingly, students from private-paid elite schools are vastly over-represented in the university system, and hold some of the best positions in the labor market. Among the publicly funded schools, municipal schools are clearly the most disadvantaged in preparing students for insertion to the labor market and the higher education system, followed by private-subsidized schools and then by the Corporations, which are almost an elite among this latter group of schools.

2.35 **Standardized Academic Achievement.** A test administered in 1992 shows that for Spanish skills, about one-fourth of the municipal S-H schools and more than half of the T-VOC secondary schools, which are almost solely attended by low-income students, ranked at the lowest levels. With regards to math skills, nearly 40 percent of all municipal S-H and T-VOC schools ranked at the lowest end of the spectrum. By contrast, over half the private-paid schools ranked at the upper level in both Spanish and math (Annex C, Table C-17).

2.36 **Higher Education and Employment Outcomes.** Nowhere are the secondary school system's inequalities more evident than in students' access to tertiary education and employment opportunities. Only five percent of those belonging to the lowest-income households continue onto tertiary education, compared to 45 percent of those belonging to higher-income households. About 18 percent of low-income household graduates would be unemployed after graduating from secondary school, compared to two percent of student coming from higher-income households (Annex C, Table C-18). For a society like the Chilean, which states its adherence to principles of equality of opportunity and social mobility, the inequality of the secondary school system is a worrisome issue. Similarly, for a society that is increasingly aware of the value of its human resources, the costs of wasting the talent of the majority is also a major issue.

2.37 **Weak Sectoral Institutional Capability.** Since early 1993, the Bank-assisted MECE project (Ln. 3410-CH) has been financing several activities to strengthen managerial skills at all levels of the education system (central, regional, provincial, municipal, and school level). These activities have involved: (i) staff training; (ii) development and delivery of operational manuals; (iii) provision of office and communication equipment (vehicles, photocopiers, computers and peripheral equipment and software, fax machines, and office furniture); and (iv) strengthening of the management information system (MIS). Nevertheless, due to initial implementation delays, institutional weaknesses persist. Consequently, many reforms and interventions which had been programmed in order to address problems of efficiency, quality, and equity at the primary level are still pending.

2.38 Weak institutional capacity stems primarily from the limited ability of: (a) MINEDUC to effectively translate educational policies and strategies into concrete programs, target resources to deprived schools through the municipalities, and periodically monitor sector achievements; (b) the municipalities to execute educational programs derived from sector policies, and administer the resources of municipal schools in an efficient manner; and (c) school administrators to adequately implement technical-pedagogical supervision and school management programs. Of the activities programmed to date, MINEDUC has effectively supplied all administrative offices at the central and decentralized levels with office and

telecommunication equipment and vehicles. Meanwhile, the activities which are behind schedule are: (i) strengthening managerial skills at all levels of decision-making through training; (ii) developing practical manuals for planning, programming, and monitoring; and (iii) strengthening of the sector's MIS.

2.39 **Financing and Expenditure Issues.** Chile's public spending on education (from both, central and municipal own-generated resources) declined significantly from 5.5 percent of GDP in 1982 to 2.8 percent in 1990 before increasing slightly to 3.0 percent in 1992. As a share of total public expenditures, public education spending decreased from 12.3 percent in 1982 to 9.1 in 1988 and then increased to 11.2 percent in 1992 (Annex D, Table D-1). The increments registered in public education spending since 1992 are largely a result of the: (i) increases in school subsidies; (ii) increases in teachers salaries due to the enactment of the Teachers Statute Law (1991); and (iii) Bank-financed MECE project (Ln 3410-CH). Despite this slight recovery, public financing of education is still characterized by a general level of underinvestment, limited funding sources, and the concentration of expenditures on recurrent salaries.

2.40 **Underinvestment in Education.** Public education sector spending in Chile, at 3.2 percent of GDP, is still low compared to the 4 percent of GDP spent in Latin America as a whole, 4.4 percent in Latin America's middle-income countries, and 6.4 in the OECD countries (Annex D, Table D-2). Chile devotes only 11.2 percent of its budget to education, which also is small relative to the LAC average of 16.6 percent, yet only slightly below the share assigned by OECD countries (12.8 percent). Chile's per-student spending on pre-university education was about US$320 in 1992[8/], about twice the average of US$171 for upper middle-income countries worldwide, yet only one-tenth the approximate OECD average of US$3,500 per year.

2.41 **Sources of Funding.** Almost 52 percent of spending in education in 1992, including funds from the Fondo Nacional de Desarrollo Regional (FNDR) and the subsidy transfers to the municipal and the private-subsidized schools, came from the federal budget. Overall, the share of private contribution to education has kept pace with increases in public financing. The greatest increase in private financing has been at the university level, where payments grew in the 1989-92 period from 19 percent of total educational spending to over 21 percent (or roughly 40 percent of total private funding). The pre-university level private funding experienced a slight decrease from 31 percent in 1989 to 29 percent in 1992 (Annex D, Table D-3).

2.42 **Recurrent Salary Expenditures.** According to 1992 data, nearly 80 percent of all public educational expenditure is allocated to teachers' salaries and social benefits, somewhat below the Latin America average of about 85 percent. Meanwhile, the remaining is used as follows: 16.8 percent is transferred to 20 public and private universities; 2.6 percent for recurrent operating costs; 0.8 percent for school construction and maintenance; and 0.3 percent for textbook provision (Annex D, Table D-4). The 1992 outlays for textbooks and teaching materials increased 275 percent compared to 1990, as a consequence of implementing MECE.

8/ This increases to about US$367 per student for all educational levels if subsidies to higher education are also included.

2.43 **Distribution of Expenditures.** Public expenditure on education has increased by 0.4 percent per annum in real terms since 1980. This trend is observable across most educational levels, albeit at different annual rates: preschool education 3.1 percent; basic education 2.9 percent; and T-VOC secondary education 3.2 percent. The exceptions are in the S-H secondary education track and the transfers to higher education, which have decreased by 0.1 and 4.3 percent respectively (Annex D, Table D-5). Noteworthy are the following trends observed during the 1980-92 period: preschool expenditures, as a proportion of total educational expenditures, rose from 6.1 percent to 8.4 percent; primary education expenditures rose from 39.6 to 53.1 percent; expenditures on T-VOC secondary education track climbed from 5.3 percent to 7.4 percent; while spending in the S-H secondary track and higher education transfers decreased from 8.8 to 8.3 percent and 35.2 to 19.8 percent, respectively (Annex D, Table D-6). The increases in preschool and primary education are a consequence of MECE, increases in teachers' salaries and school subsidies.

D. Government Sectoral Objectives and Strategy

2.44 In contrast to primary education, where extensive research and policy proposals laid the groundwork for MECE, secondary education lacked an analytical base to guide any interventions. The Aylwin Government assigned its educational spending priority to preschool and primary education, since it was acutely aware of the need to start from the lower levels upwards. Concurrently with implementing the MECE project, the Aylwin Government initiated activities aimed at developing a strategy for improving secondary education. For instance, with financing from the MECE project, MINEDUC carried out 13 studies in 1992-93 (para. 2.13). Additionally, a public consultative process which included more than 35,000 educational system stakeholders was carried out during 1992 to inform and raise the level of awareness regarding issues facing the subsector, and to gather stakeholder's views on these issues. Furthermore, a workshop was held in Santiago in November 1992, attended by international scholars in the field, to review the worldwide experience in dealing with secondary education issues and to propose possible solutions. Finally, a study tour was carried out in 1992 by key sectoral actors in charge of policy design, in conjunction with Bank staff assisting project preparation, to observe the secondary education systems in Korea, Singapore, and Malaysia.

2.45 The Frei Government has built on this work and raised education to a new order of priority. The Minister of Finance announced on August of 1994, that education would top the Government's priority list during its 6-year term. By acknowledging the importance of education in achieving sustained economic growth, the Government will significantly increase the percent of GDP devoted to education, with a target of 7 percent to be reached in the next 8 years. This increase would have to be assumed and shared by both the public and private sectors. Some of the future investments outlined by the Minister for the education sector include: (i) modernization of the curriculum; (ii) improved school effectiveness and efficiency; and (iii) improved management of the sector. The Government also made public the results of an Advisory Committee on the Modernization of the Education Sector, specially commissioned by

the President, titled "*Los Desafíos de la Educación Chilena Frente al Siglo 21*". This document recommends: (i) enhancing the quality of basic and secondary education; (ii) reforming secondary education; (iii) strengthening the teaching profession; (iv) providing more flexibility to sector management; and (v) increasing public and private sector financing of the sector. This document will serve as the groundwork for forging a consensus regarding a future "Structural Reform" envisioned for Chile's education system.

2.46 With inputs from the studies, the workshop and public consultation, the Government has devised a working strategy to improve secondary education in three sequential, and complementary, steps. The first step involved the implementation of a "Pilot Program" during the second semester of 1994, comprising limited targeted activities for approximately 100,000 students in 124 secondary schools throughout the country. Second, starting in January 1995, the Government initiated the execution of a more comprehensive "Quality Improvement Program (MECE-EM)" comprising a wide range of activities which address the system's overall low quality, internal and external inefficiencies, and inequities in all publicly financed secondary schools. The Pilot Program was utilized as a testing ground for the design and implementation of certain activities included in MECE-EM. The third phase, to be carried out by the end of the decade, consists of the implementation of a "Structural Reform" for the secondary education system, based on the results of MECE-EM and the consensus which is expected to emerge from the work of the Presidential Advisory Committee.

2.47 **Pilot Program.** This program has channeled US$5.4 million towards the: (a) acquisition of books for school libraries and teaching materials; (b) provision of computer equipment; (c) provision of essential school infrastructure to house the library, computer equipment, and teacher's rooms; (d) implementation of alternative curricular activities for at-risk students; and (e) provision of in-service teacher training. The 124 participating schools were selected on the basis of vulnerability[9/], low scores in academic achievement tests, a minimum enrollment of 500 students per school, and low mobility of its teaching personnel. The pilot program has been absorbed by the larger MECE-EM project (para. 2.48).

2.48 **Quality Improvement Project (MECE-EM).** The Government is financing the execution of MECE-EM in CY95 with counterpart funds amounting to US$13.4 million. The activities included under this project rest upon three sets of actions, and are aimed at the publicly financed secondary schools. First, actions to: (i) enhance the teaching and learning of higher-order thinking and problem-solving skills; (ii) develop evaluation capacity; (iii) establish alternative curricular activities to address students' expectations and demands in their supplementary time; and (iv) develop new links between the secondary school system and the private productive sector. Second, actions to: (v) change teaching and school practices;

9/ Using the vulnerability methodology designed and implemented by the Junta Nacional de Auxilio Escolar y Becas (JUNAEB). This methodology comprises: the student's socio-economic and nutritional status; the school's repetition and dropout rates; and the school classification as determined by a nation-wide poverty map.

(vi) promote grassroots (teachers, directors and supervisors) participation in designing and implementing school-based quality development projects; and (vii) provide learning inputs comprising textbooks, teaching materials, school libraries, computing equipment and software, infrastructure and technical assistance. Third, actions to continue strengthening sectoral management. The Bank has been requested to assist in the financing of some of the above-mentioned components.

2.49 **Structural Reform**. The Government recognizes that the present basic eight-grade compulsory education system is obsolete, since the majority of its graduates go on to a secondary education system that is outdated from the standpoint of its social, educational, and skill contents. There is clearly a need to redefine the length of compulsory education in the context of the modernization trends currently shaping the Chilean society. According to the available evidence, this plan is consistent with changes that other secondary education structures (in more developed economies, and the Pacific Rim countries) have made to their curricula, teaching methods and school practices. Based on the evaluated results of the Pilot Program and the Bank-financed MECE-EM, as well as the consensus which emerges from the forthcoming national debate, reforms could be structured along the following lines: (a) extension of the length of compulsory education from 8 to 10 years; (b) postponement of the decision period for choosing between the S-H and T-VOC track until the end of the 10th grade (at the age of 16) rather than at the current 8th grade (at the age of 14); (c) enhancement of the teaching and learning of higher-order thinking and problem-solving skills in the newly defined subject-based curriculum to be provided in the compulsory secondary cycle (9th and 10th grades); and (d) more differentiation in the non-compulsory secondary cycle (11th and 12th grades), with connecting channels allowing for second choices, so that the S-H track would not be exclusively oriented towards university studies, and the T-VOC track would stop being conceived as dead-end and specialized in terms of specific job positions, and thus become more attuned to changeable occupational markets.

E. Bank Role and Strategy

2.50 To date, the Bank has supported four projects in Chile's education sector. The first two (Vocational Training Project, Ln. 0431-CH for US$2.7 million, and Second Vocational Training Project, Ln. 0666-CH for US$1.5 million, approved in 1965 and 1970, respectively) were aimed at expanding the training capacity of the National Institute for Vocational Training (INACAP). The projects were successfully implemented, and assisted in making INACAP an outstanding training institution. The third project (Third Education Project, Ln. 0668-CH for US$7.0 million, approved in 1970) supported the MINEDUC in its efforts to expand and improve primary teacher training colleges and technical agricultural secondary schools. This project was implemented prematurely since the country's policies in this area were only in their formative stage at the time. Furthermore, project implementation coincided with a period of political turmoil, which contributed to many project objectives not being achieved.

2.51 The fourth project (MECE, Ln. 3410-CH for US$170 million, approved in 1991), currently under execution, aims to assist the Government in: (a) enhancing the efficiency, quality, and equity of primary education in selected schools in targeted rural and urban areas; (b) expanding coverage and enhancing the quality of preschool education to increase primary school preparedness and reduce late entry, repetition, and dropout rates, especially targeted to 5-year-old children living in poverty conditions; (c) strengthening the institutional capacity of MINEDUC, its regional and provincial educational departments, and the municipalities, as well as the managerial skills of principals in municipal and private subsidized preschool and primary school; and (d) assessing alternative cost-effective approaches to meet the secondary education needs of primary graduates. Project execution is progressing satisfactorily. Many components (school-based quality improvement projects-PMEs; the school computer network; rural micro-centers; distribution of textbooks, reading resource centers and teaching materials; health screening and referral; civil works; and the distribution of office equipment, vehicles, computers, and supplies to MINEDUC's decentralized offices) have exceeded expected targets. As of December 31, 1994, the project has disbursed over 35 percent of the total loan. In addition to these projects, the Bank has assisted the Government during the past decade with 23 projects, amounting to approximately US$2.4 billion, in the following sectors: infrastructure (eight projects), housing (two projects), health (two projects), public sector enterprise (one project), technical assistance (four projects), and structural adjustment (six projects). These projects have helped the Government to attain macroeconomic stability, adopt a market economy, liberalize trade, and promote private sector participation.

2.52 The Government of Chile and the Bank have recently agreed upon a new assistance modality that reflects Chile's continued desire for the Bank's technical assistance and advisory services along with its reduced need for resource transfers in view of its strong external position. The first Country Assistance Strategy document for Chile, which reflects this new assistance modality, is being prepared for Board consideration in May 1994. A fundamental feature of the Bank's strategy is the emphasis on selectivity, focussing both sector work and limited new lending exclusively on key areas identified by the Government as priorities in its development agenda. One of these determinant areas in which the Government has requested Bank assistance is the education sector. The education sector has been singled out as this Administration's highest priority, both to increase productivity and to improve further social conditions. The Government looks for the Bank's assistance in this project in view of our already close involvement under previous and ongoing operations in the sector. The Government also seeks to benefit from the Bank's international experience in the field of secondary education, considered of fundamental importance towards improving the country's international competitiveness and meeting its future economic growth objectives. The project is consequently fully consistent with the country assistance strategy for Chile.

2.53 **Inter-American Development Bank (IDB).** The IDB approved in 1994 a US$60 million Training Program Loan for Chile aimed at assisting SENCE to provide non-formal training to unskilled workers from all sectors of the economy in order to increase their productivity.

F. Lessons Learned[10/]

2.54 **Sustainability.** To ensure that Bank-financed education projects will continue to produce benefits beyond their completion, countries need to develop or maintain a sense of project ownership. Involving policy-makers and technical staff from the early stages of project identification and design is one of the best strategies to achieve this goal. Also, local involvement in project preparation helps to ensure that project goals are in agreement with national goals. Other elements of project sustainability are: (i) defining both long- and short-term project objectives so as to facilitate implementation, monitoring, and evaluation; (ii) addressing from the very beginning the issue of counterpart funding; and (iii) addressing the issue of institutional strengthening for project implementation, monitoring, and evaluation. During preparation of the MECE-EM project, MINEDUC, through the Project Preparation Unit (PPU) of MECE, has taken an active role in defining the project. Project implementation is envisaged through the Project Coordination Unit (PCU) of MECE, modified to allow simultaneous coordination of the Bank-financed secondary education project (MECE-EM) and transferring of the day to day coordination of MECE to MINEDUC. The PCU would be part of MINEDUC's organizational structure. Furthermore, the Government has allocated counterpart funds in its Budget Law of CY95 for MECE-EM amounting to US$ 13.4 million equivalent. During appraisal the Government made available the necessary counterpart funding information required for project execution for 1996 through 2000 (para. 7.2(d)).

2.55 **Textbooks, School-Libraries, and Teaching Materials.** The success of a textbook, school library and teaching material component is directly related to the extent to which the project design addresses all aspects of their selection, publication or procurement, distribution, storage, usage, and financing. The key problems encountered in this component are: (i) incapacity to supply books and teaching materials continuously due to lack of funding,

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10/ This section is based on: (i) a review of 24 Project Performance Audit Reports (PPAR), project completion Reports, and Staff Appraisal Reports from the LAC, Asia, and Africa regions, as well as the Form 590-Supervision Reports for MECE (Loan 3410-Ch); (ii) recommendations from the following Bank documents and reports: **The Sustainability of Investment Projects in Education**, Report No. 9225, OED, 1991; **Lending for Learning: Twenty Years of World Bank Support for Basic Education**, Report WPS 686, PHR, 1991; **Effective Implementation: Key to Development Impact**, Report of the World Bank's Portfolio Management Task Force, 1992; **Textbooks in the Developing World: Economic and Educational Choices, EDI, 1989; Education Decentralization in Latin America: Lessons Learned**, Report No. 27, LATHR, 1992; **Developing Educational Assessment Systems in Latin America**, Report No. 9, LATHR, 1991; and, **Decentralization in Education: An Economic Perspective**, Report WPS 143, PHR, 1989; (iii) Discussion Papers from the Education and Training Series (EDT Reports) No. 20 (1985), No. 21 (1985), No. 50 (1986), and No. 53 (1987); (iv) annual review of the education sector in the Operations and Evaluation Department Annual Reviews from 1984 to 1988; and (v) **A World Bank Policy Paper: Primary Education**, 1990.

inadequate institutional arrangements, and poor distribution and coordination; (ii) inadequate attention to the selection of book and teaching material and evaluation of their use by the teachers and students; (iii) neglect of aspects related to book and teaching material utilization, such as teacher and parents' training; and (iv) conflicts between government and local publishers and teaching material manufacturers. MECE-EM will address these issues by: (i) establishing a policy on the use of quality textbooks and instructional materials; (ii) sending signals to manufacturers of textbooks and instructional materials to guide their supply; and (iii) developing institutional capacity to choose learning materials available in the market, involving teachers in the selection and evaluation of learning materials. MECE-EM has incorporated the experience gained in the execution of MECE's textbook componente since 1992.

2.56 **In-service Teacher Training.** Support for in-service teacher training should distinguish activities designed to certify untrained teachers from activities geared to upgrading the skills and knowledge of current teachers. In the latter case a distinction should be made between improving general subject matter knowledge and improving teaching skills, especially with the use of textbooks and reading materials. The latter programs are generally successful when they are designed and implemented in the teacher's work environment. MECE-EM builds upon three years experience derived from the execution of MECE's in-service teacher training component. MECE-EM will include an intensive, locally initiated and implemented teacher training component to upgrade teachers' skills in the use of textbooks, school libraries, teaching materials, and computers, as well as in the design and implementation of school-based quality development subprojects.

2.57 **Evaluation.** To develop the country's assessment capabilities it is necessary to: (i) define assessment policies and objectives, and disseminate results; and (ii) incorporate trained psychometricians and statisticians as part of the required staff. Moreover, it is desirable to: (i) operate the system outside the government, maintaining in the latter only the formulation of assessment policies, test development and monitoring, and dissemination of results; and (ii) allocate funds to research the assessment information being collected. Chile has developed a reliable standardized measuring system for cognitive achievement in basic education. This experience is being incorporated into the evaluation component of MECE-EM.

2.58 **Institutional Development.** For central and decentralized management to be effective it is essential to have: (i) a political commitment to implement the changes advocated; (ii) a rational distribution of responsibilities between central and regional authorities, in which the former provides direction, formulates policy, monitors achievement, and performs evaluations, and the latter operates and manages the day-to-day activities of the sector; (iii) accountability of authorities; (iv) adequate resources; and (v) an implementation strategy. MECE-EM builds upon the institutional strengthening activities implemented by MECE to strengthen the decentralization process and sectoral managerial capability.

2.59 All of these lessons, as well as the Bank's worldwide experience, have been taken into account in the design of the project.

3. PROJECT OBJECTIVES AND DESCRIPTION

A. Project Objectives

3.1 The project (MECE-EM) seeks to improve the internal and external efficiency, quality, and equity of all the municipal and government-subsidized private secondary schools (about 1,600), and to strengthen sectoral managerial capacity.

B. Project Description

3.2 MECE-EM would **improve external efficiency** by: (a) establishing a Curriculum Planning and Evaluation Unit (CPEU) to reformulate the subject-based curriculum, for both the scientific-humanistic (S-H) and technical-vocational (T-VOC) secondary schools, to enhance the teaching and learning of higher-order thinking and problem-solving skills; (b) developing evaluation capacity to monitor the consistency between the recommended (official) and the learned curriculum; (c) establishing alternative curricular activities for socially and educationally at-risk secondary students; and (d) providing incentives to strengthen the linkages between targeted T-VOC secondary schools and the private sector in curriculum development, skill certification, in-service teacher training, and the use of physical facilities. MECE-EM would **improve quality, equity, and internal efficiency** by: (e) providing in-service teacher training to change the predominantly one-dimensional teaching format based mainly on rote learning and dictation, to more interactive methods; (f) establishing a fund to promote the design and implementation of school-based educational development projects (PDEs); and (g) providing educational resources (textbooks, school libraries, teaching materials, computers, and infrastructure) in a targeted manner. MECE-EM would **strengthen sectoral managerial capacity** by: (h) building upon existing institutional strengthening activities financed by the Bank-assisted Primary Education Loan (Ln 3410-CH, MECE) within the current administrative structure of the Ministry of Education (MINEDUC) and the municipalities; (i) strengthening the managerial and leadership capacity of principals and the heads of school-curricular subject areas; and (j) establishing and maintaining a technical support network (TSN) consisting of universities, professional institutes, local and international experts, the private sector, and NGOs which would provide technical assistance to participating secondary schools in training, development of learning materials and curricular needs.

3.3 MECE-EM would provide school libraries, teaching materials and textbooks to all participating schools during the first three years of the project. The remaining components of MECE-EM would be implemented during the project's six year life and would cover schools based on their demand for services offered and their fulfillment of the following criteria: (a) implementation of in-service teacher training activities; (b) qualification as determined by

indicators which measure the schools' vulnerability[11/] relative to other schools; and (c) unavailability of educational inputs similar to those allocated by the project as determined by an inventory which would be carried out during the first year of project execution.

3.4 **Reformulation of Curriculum and Development of Evaluation Capacity (US$ 5.2 million; 3.0 percent of total baseline cost).** This component comprises the: (i) reformulation of curriculum; and (ii) development of evaluation capacity. Curriculum reformulation would aim to enhance the teaching and learning of higher-order thinking and problem-solving skills in a subject-based curriculum, better address the heterogeneous characteristics of the secondary education population, and assist MINEDUC fulfill its legal responsibility to implement the LOCE Law. The development of evaluation capacity would help achieve consistency between the intended (official) and the learned curriculum in both tracks of all the publicly financed secondary schools.

3.5 **Reformulation of Curriculum.** The project would finance the: (a) establishment of a small, well qualified Curriculum Planning and Evaluation Unit (CPEU) within MINEDUC; (b) reformulation of the subject-based core curriculum; (c) development of 40 teaching and learning material prototypes with the new curricular contents (curricular products including educational videos, didactic materials, and teaching methodologies) to be procured and disseminated to interested schools; (d) provision of technical assistance to interested secondary schools through the TSN during the implementation of their corresponding syllabus; (e) dissemination of curriculum innovations through bulletins, and other fora; (f) provision of local and international technical assistance to help the CPEU carry out its functions; and (g) study tours to observe curriculum reformulation and development of evaluation capacity in other countries.

3.6 The CPEU would comprise a central team of six full-time senior experts in the areas of curriculum development and evaluation. The CPEU would be assisted by about 31 curricular specialists and 23 evaluation specialists working under short-term contracts not exceeding six months. The CPEU would design and implement a core curriculum and corresponding syllabus for both tracks of secondary education during the first two years of the project by: (a) analyzing and selecting curricular areas requiring reformulation; (b) defining terms of reference to select short-term consulting services to elaborate curricular proposals and syllabus on the selected areas; (c) organizing expert discussions; (d) testing, validating and approving curricular proposals; and (e) disseminating approved curricular proposals to all schools. The CPEU would be responsible for elaborating, validating, producing, distributing, and administering external evaluation and student certification instruments. With regard to external evaluation, the CPEU would coordinate its activities with the Chilean Student Assessment System (SIMCE), which currently mainly covers the primary level. The CPEU would ensure that assessment results are analyzed, and that feedback is provided to educational policy makers and stakeholders. The

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11/ JUNAEB's vulnerability criteria is a composite function measuring poverty (see footnote 9). JUNAEB has been utilizing this criteria to target its ongoing feeding and scholarship programs.

CPEU would ensure that interested teachers effectively implement internal testing instruments for the subjects being taught.

3.7 For those schools not willing to implement the MINEDUC's syllabus, the project would support their own initiatives of syllabus design, following the framework of the approved core curriculum. These schools would identify their curricular areas requiring reformulation and then could prepare a PDE project proposal aimed at reformulating their curriculum. PDEs would compete for available grants to finance their implementation. Selected PDEs could access the TSN for required technical assistance. The reformulation of school syllabus would be carried out in the context of non-residential in-service teaching training sessions, which have borne positive results for MECE in rural areas since 1992. This in-service teacher training strategy has been adapted to secondary education under the Pilot Program. MECE-EM would finance the design, reproduction and distribution of 30,000 dissemination bulletins.

3.8 **Development of Evaluation Capacity**. The project would finance computer hardware and software, technical assistance, training, tests printing and distribution, scholarships, and study tours to carry out periodic external and internal[12/] assessment measurements as well as general and specific certifications. External evaluations would be targeted to a sample of about 80,000 senior students (12th grade) from 200 schools in both tracks in 1998 and the year 2000. The CPEU, in conjunction with SIMCE, would ensure that: (a) information on progress by secondary education students towards nationally established educational goals is available to policy makers, teachers, and parents; and (b) tests meet stringent psychometric standards of reliability and validity so that the information can be used to identify at-risk students, schools, and municipalities. Internal evaluations would be developed by individual schools with the appropriate technical assistance of the CPEU and the TSN. Teachers interested in implementing internal testing instruments for the subjects and competencies being taught would access the TSN through the in-service teacher training. The in-service teacher training would be carried out in conjunction with the implementation of the core curriculum and syllabus reformulation, the provision of the learning inputs, and other related actions to be provided by the project.

3.9 The project would finance the printing of 9,600 certification sets and 2,300 certification manuals to carry out the general certification of all 10th grade students in both tracks, as well as the specific certification of all 12th grade students from T-VOC schools. This latter certification would be undertaken in the workplace where students could practice their acquired skills. The general certification process would begin in 1998 (once the LOCE has been implemented in all the secondary schools), and the specific certification process would start in 1996.

12/ External evaluations are performed by MINEDUC at the national level to measure core-curriculum goal achievements. The unit of measurement is the school and the instrument is a standardized cognitive achievement test. Internal evaluations are performed by teachers to measure student cognitive achievement in specific modules of the core curriculum. The unit of measurement is the student and the instrument is a test designed by the teacher.

3.10 **Alternative Curricular Activities for at-Risk Secondary Students. (US$ 13.1 million; 7.6 percent of total baseline cost).** To address relevant societal issues emanating from secondary education students, especially those at-risk of dropping out of school, and to foster a more constructive use of student's supplementary time, the project would: (i) establish extra-curricular alternatives in the arts, environment, sports, preventive health (specially concerning AIDS, teenage pregnancy, and drugs), video-clubs, student leadership development, and communication; and (ii) improve inter-school and inter-student relations through participatory activities. This component was implemented under the Pilot Program in 124 schools in 1994, and was modeled after an existing extra-curricular program administered by MINEDUC. MECE-EM would expand this component to about 1,500 schools, at an average rate of about 320 per year. Interested schools would provide their facilities on Saturdays and during the entire month of January, and would nominate two teachers, one paid by the project and the other by the school proprietor, to monitor the implementation of these extra-curricular activities.

3.11 The project would finance the: (a) annual marginal cost of 320 teachers, and of 256 teachers during one month in the summer; (b) reproduction of about 3,000 sets of teacher training materials; (c) implementation of 21 training events for 3,000 teachers; (d) acquisition of nearly 27,000 sets of extra-curricular teaching materials and required equipment, especially for the arts and sports; (e) provision of technical assistance; (f) distribution of 600,000 dissemination bulletins; (g) implementation of national, regional, and local dissemination events; and (h) execution of one impact evaluation study. MINEDUC would provide the necessary support to teachers in implementing specific extra-curricular activities. Schools would be incorporated in a demand-driven fashion, and would be entitled to remain in the program for a maximum of three years, after which the extra-curricular activities would be financed by the school.

3.12 **Linkages with the Private Productive Sector (US$ 0.7 million; 0.4 percent of total baseline cost).** This component would strengthen the linkage between the private sector and T-VOC secondary schools by: (a) providing in-service teacher training fellowships for T-VOC teachers in a private sector working environment; (b) establishing mechanisms to foster the participation of the private sector in the design of a core curriculum and the specifications of skill certification of T-VOC students; and (c) implementing a dissemination campaign to inform the private sector about the benefits of the Law 19,247 of September 15, 1993, which is geared toward increasing private sector contributions to education.

3.13 The project would finance a two-week residential in-service teacher training fellowship for 1,500 teachers (two teachers per interested T-VOC secondary schools) in selected private firms attuned to the specifics of the participating school. The project would also assist participating private firms in designing, implementing, and monitoring the in-service teacher training which would take place in their own facilities. Participating firms would design the training modules for groups comprising about 20 teachers from 10 T-VOC schools.

3.14 The project would finance 32 staff-months of local consultants to elaborate and validate: (i) occupational profiles in 15 agricultural, industrial, commercial and mining professional clusters; and (ii) a manual explaining norms and procedures for evaluating students' occupational

proficiency after having graduated from their senior year and completed their compulsory work periods in the firms. To this end, the project would also finance the training of the T-VOC school supervisors and the publication of 2,300 manuals.

3.15 The project would finance the: (a) organization of eight seminars to inform school principals and private firms about the regulations and mechanisms for using the fiscal incentives provided by the Law 19.247; and (b) production of dissemination brochures illustrating, with concrete examples, how to apply the incentives.

3.16 The project would encourage interested T-VOC secondary schools to prepare school-based initiatives (PDEs) to promote the participation of private firms in the delivery of technical-vocational education[13/].

3.17 **In-service Teacher Training (US$ 3.2 million; 1.9 percent of total baseline cost).** The project would help modify teaching practices and support an improved teaching force capable of: (a) using appropriately the newly defined subject-based core curriculum, corresponding syllabus, and curricular products to enhance the teaching and learning of higher-order thinking and problem-solving skills; (b) applying testing instruments to periodically monitor the progress of individual students; (c) using effectively the instructional resources financed by the project; (d) designing and implementing PDEs; and (e) participating in the alternative curricular activities for at-risk secondary students.

3.18 The proposed in-service teacher training methodology was developed by MECE, and was utilized by the Pilot Program in 124 secondary schools during 1994. This strategy departs from the traditional, residential training programs aimed at improving general teacher subject-knowledge, which have been proven ineffective worldwide. The proposed training is provided in the teacher's own work environment (the school), and consists of intensive on-site, locally initiated workshops (School Professional Groups - SPG) of interested teachers, school principals and supervisors working on specific teaching themes selected by the participants (for example, use of instructional resources, and use of internal evaluation instruments). Each SPG would consist of about 15 participants. The project would finance the: (a) implementation of 20 training workshops for 150 supervisors to implement approximately 3,000 working SPGs in 1,600 schools; (b) production of training materials including 3,200 videos, 521,000 pedagogical modules for teachers, 120,000 teacher manuals and monitoring guidelines, and 600 supervisory guidelines; (c) monitoring of the SPGs; (d) technical assistance for the SPGs; and (e) evaluation of the SPGs' impact.

3.19 **School-based Quality Educational Development Projects (PDEs). (US$ 20.5 million; 11.9 percent of total baseline cost).** In accordance with the general decentralizing principles

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13/ Several development financing agencies, such as ORT, USAID, and the Ministry of Economic Development of the German Government (GTZ), have manifested an interest in supporting school-firm projects in Chile.

framing the government's sectoral objectives, and the experience of MECE[14/], the project would support secondary school-based initiatives (PDEs) focused on quality improvement and institutional development. Grants would be provided on a competitive basis to locally designed PDEs aiming to promote increased school participation and autonomy by allowing them to decide *how, where*, and *when* to spend additional non-personnel, non-recurrent financial resources[15/]. Grants would be targeted to subsidized secondary schools from both tracks, which would participate individually or in clusters of schools behind a common project theme. Schools would be eligible to receive a grant ranging between US$2,500 and US$15,000 equivalent per school, depending on the enrollment and the merits of the proposed PDE.

3.20 The project would finance the: (a) design and implementation of approximately 2,000 PDEs (each Bank-financed grant would fund up to 80 percent of the cost of each eligible PDE); (b) training of supervisors responsible for assisting secondary school teachers and principals in preparing their PDEs; (c) development of approximately 18,500 sets of training materials, 8,100 manuals, 1,600 training videos, 1,000 evaluation guidelines, 30,000 information brochures, 2,700 dissemination posters, and 4,300 applications to participate in the program; (d) monitoring of PDEs in execution; (e) carrying out of about 160 regional and provincial PDE exchange workshops to inform school stakeholders of successful subprojects, and foster cross-fertilization among teachers, school principals and students from different schools; and (f) carrying out of a longitudinal evaluation to describe PDE's processes and measure their impact.

3.21 This component would be implemented gradually to allow the system to obtain feedback, learn from experience, and adjust itself by introducing appropriate changes based on close monitoring. Accordingly, during 1995 the project would finance the preparation of the required training and dissemination materials, as well as undertaking the first training workshops for supervisors. During 1996, 120 PDEs would be funded on a competitive basis. The following four years, 360, 620, 560, and 340 PDEs would be included, respectively. Interested schools could be granted up to a maximum of two PDEs during the entire life of the project. Schools wishing to prepare two PDEs would be encouraged to do so sequentially rather than concurrently, at least during the first three years of project execution. The execution of PDEs would not exceed three years. To qualify for project financing, eligible schools would enter into an agreement with MINEDUC under terms and conditions agreed with the Bank prior to the disbursements of Loan proceeds. Eligible PDEs would receive financing through three payments

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14/ Nearly 2,000 school-based quality improvement grants have been funded by MECE since 1992.

15/ PDEs will be reviewed and ranked by trained secondary school supervisors from a DEPROV different to the one having jurisdiction over the school. The supervisors will be trained by MECE-EM to rank projects based on the following criteria: relevance in addressing quality, efficiency, and/or equity school issues; project formulation consistency and cohesiveness; population to be benefitted; sustainability; and replicability. Evaluation guidelines and procedures will be developed by MECE-EM.

representing 40, 30, and 30 percent of total PDE cost, respectively. The first payment would be made by MINEDUC to the eligible school through the corresponding SEREMI with counterpart funding from MINEDUC at the signing of the agreement, which would then be reimbursed by the Loan when the SEREMI has documented this expenditure. Further payments by MINEDUC to the eligible schools, through the SEREMI, would be made when the eligible schools have issued their statement of expenditures. Supporting expenditure documentation would be available in the elegible school for the duration of the PDE. It is expected that through dissemination of good subprojects, monitoring, and evaluation, generalized principles kindled by the PDEs can become policy as the system assimilates what works.

3.22 Schools interested in establishing links with, inter-alia, private sector firms or academic institutions, could include these objectives in their PDEs. Additionally, interested schools could compete for technical and financial assistance to be provided by financial development agencies interested in assisting them, such as GTZ, ORT, USAID, or any other donor agency operating in Chile. The possible assistance to be provided by any of the above-mentioned development agencies would be implemented outside the Bank Loan.

3.23 **Provision of Educational Resources (US$ 116 million; 67.3 percent of total baseline cost).** The project would finance the provision of the following resources, which have proven effective in raising the quality of secondary schools[16/]: (a) textbooks (US$20.4 million; 11.6 percent of total baseline cost); (b) school libraries (US$22.7 million; 13.2 percent of total baseline cost); (c) teaching materials (US$7.7 million; 4.4 percent of total baseline cost); (d) computers (US$26.2 million; 15.2 percent of total baseline cost); and (e) infrastructure (US$39.3 million; 22.8 percent of total baseline cost). This component would aim to: (a) improve student access to these resources in the context of new curricular and teaching orientations; (b) guide and stimulate the national and international markets for secondary school educational resources by sending appropriate signals about their demand and content; and (c) establish a long-term system of acquisition, distribution, storage, effective use, and evaluation of these resources by closely coordinating it with the curricular, teaching process, and evaluation components of this project.

3.24 Textbooks. The project would supply textbooks to all publicly subsidized secondary school students (nearly 590,000) in grades 9 through 12, in language, mathematics, social and natural sciences, and technology. Textbooks would be designed to cover the material of two consecutive grades -9th and 10th, and 11th and 12th- and to have a lifetime of two years. Each student would receive a set comprising between three to five books, encompassing, inter-alia, the subject matters mentioned-above. At least, one book would be allocated through the school library at a ratio of one book per three students.

16/ Fuller, B., and Clarke, P., "Raising School Effects While Ignoring Culture? Local Conditions and the Influence of Classroom Tools, Rules, and Pedagogy". *Review of Educational Research*, Vol 64, No. 1 pp 119-157, Spring 1994.

3.25 The project would finance the purchase of about 1.5 million sets of textbooks to be delivered directly to students, and approximately 300,000 textbooks to be allocated through school libraries during the project's implementation. The project would acquire about 1,200,000 textbooks per year during project execution, starting in 1996. Textbook selection and procurement would be done through a two-step process, in line with Government's procedures (100 percent of this subcomponent is being financed with counterpart funding). The CPEU, in conjunction with MINEDUC's existing textbook unit, would establish the specifications for the textbooks. Textbooks and manuscripts would then be selected on the basis of quality standards, from samples made available from national and international publishers. Second, approved texts and manuscripts would be invited for bid, at prices based on a curve of estimated sales. A short list (of four titles maximum) would then be approved for each subject and grade in line with the new curricular orientation. The titles of the selected books, together with a technical description, would be sent to the secondary schools so that teachers can choose those which best correspond to their needs as determined by the SPGs. After the results of this consultation are compiled, orders would be placed if a minimum of about 7,500 copies of a title have been requested by the teachers. At the end of each school year, MINEDUC, through the SPGs, would survey teachers' opinions on the textbooks in order to upgrade the terms of reference of future procurement bidding documents. Teachers would be trained on textbook selection criteria and their appropriate and creative use.

3.26 School Libraries. The project would promote the use of printed, audiovisual and multimedia materials through the development of school libraries in all publicly funded schools. Three different types of libraries would be established by the project: local libraries, collective libraries and system libraries. Local libraries would serve individual schools and would consist of either 1,200, 1,700 or 2,100 books depending on the number of students in the school and its availability of books. Collective libraries, holding a collection of an additional 2,500 books, would be established in 200 local libraries selected according to the following criteria: (i) expressed desire to house the library; (ii) capacity to do so; (iii) availability of personnel to administer the library; and (iv) location relative to other schools that would use the library. System libraries would connect approximately 3 collective libraries with their respective local libraries through an automated networking system that would ensure the instant availability of information. The libraries would consists of reference materials, youth and adult collections, contemporary literature, recreational materials, and specialized educational and curricular materials. The implementation of this subcomponent was initiated in 1994 under the Pilot Program in 124 secondary schools.

3.27 The project would finance: (i) 2.8 million books; (ii) cataloguing and processing materials; (iii) technical assistance; (iv) production of printed and audiovisual training materials; (v) training; and (vi) dissemination materials. About 30 percent of the stock for the local libraries would be delivered during 1995 and 1996; 35 percent would be acquired in 1997 and 1998; and the remaining 35 percent would be purchased in 1999 and 2000. The collective and system libraries would be established during the fourth year and fifth years of the project, respectively. The first purchase of library materials would include basic titles selected by MINEDUC with the assistance of specialists. This initial collection would be selected and

procured in a two-step procedure (para. 3.25) in line with the Government's procedures (100 percent of this subcomponent is being financed with counterpart funding). The second and third purchases would be selected by teachers from a pre-approved list compiled by MINEDUC. After the results of this consultation are compiled in the PCU, orders would be placed by MINEDUC. To replenish the libraries and ensure their sustainability, the project would inform schools of various existing agencies and Laws (setting the fiscal basis for private contribution to education) which could provide schools with books.

3.28 Teachers would be trained in evaluation and selection criteria for the libraries' contents, and in the development of reading and general language skills by students through activities which may include research and homework assignments requiring consultation or reference library materials. The management and organization of the library would be key in ensuring the fluid and efficient use of resources and time available to teachers. Libraries would be staffed by current school personnel (librarians, teachers, and support staff) and parents who would receive special training. All libraries would receive manuals (with instructions on services offered by the library, its organization, processing of bibliographical material, lists of available library materials, staffing requirements, and user education) and a Directory of the library network. In cases in which school's installed infrastructure is not deemed adequate to house the library's contents, the project's infrastructure component would provide schools with essential infrastructure needed to house the libraries and computer multi-use rooms.

3.29 Teaching Materials. This subcomponent would: (i) increase the supply of both non-curricular and curricular teaching materials[17/] through demand and non-demand mechanisms; (ii) establish and update, with the input of teachers and students, a Secondary Education Teaching Materials Catalogue (SETMC) which would assist them in selecting, applying and evaluating such materials; and (iii) orient and stimulate the national and international markets for secondary education teaching materials by sending signals about demand through orchestrated seminars and procurement processes. The implementation of this subcomponent was initiated in 1994 under the Pilot Program in 124 secondary schools.

3.30 The project would finance: (i) approximately 930 packages of non-curricular materials consisting of a television, two video recorders, one slide projector, a slide projector, a stock of video and audio cassettes, and a cassette player targeted to the neediest schools; (ii) curricular materials such as educational software, natural science kits, and chemistry sets; (iii) manuals for the instructional use of these materials; (iv) technical assistance to establish the specifications of the materials to be included in the SETMC; (v) training; (vi) publications, dissemination activities, and information workshops with suppliers of these teaching materials; and (vii) study tours abroad to analyze the market of teaching materials of other countries.

17/ Non-curricular materials provide support for teaching and learning which offer neither a specific pedagogical nor a methodological application. Curricular materials seek to develop specific themes, concepts or skills in a specific context.

3.31 During the project's first year, the CPEU would hire five specialists in language, mathematics, natural and social sciences, and technology to provide the specifications of the curricular materials. Selection and procurement of non-curricular materials would be done through price bids (para. 3.25) in line with Government's procedures (100 percent of this subcomponent is being financed with counterpart funding). Curricular materials would be selected on the basis of their quality and conformity with the new curricular orientation, from samples made available from local and international manufacturers. Selected teaching materials would be included in the SETMC. The SETMC would include, besides the pre-approved materials, an explanation of concepts and skills developed by each material; guidelines for selection; a methodological guide for classroom application; a description of additional equipment required; and an evaluation survey to later determine the effectiveness of the materials. The SETMC would be sent to schools from which teachers and students would choose materials with a pre-specified budget. After the results of this consultation are compiled in the CPEU, orders would be placed by MINEDUC for the curriculum materials requested by the schools. The SETMC would be updated three times during project execution.

3.32 Schools would acquire the selected material from the SETMC through a non-monetary voucher (NMV) of US$1,500, US$1,800 or US$2,200, depending on the size of the school (below 300 students, the school would receive NMVs of US$1,500; between 301 and 900 students, the school would receive NMVs of US$1,800; and above 901 students, the school would receive an NMV of US$2,200). Some schools would be entitled to the basic package of non-curricular materials during the first year of project execution. During the second and fourth years of the project, additional materials would be allocated through the voucher system based on the school's teaching needs. Teachers would be trained (para. 3.17) to: (i) identify pedagogical priorities requiring teaching materials; (ii) evaluate and select curricular materials according to their proposed cost, content, and methodology; (iii) effectively apply the materials in the classroom; and (iv) effectively incorporate them into the up-dated curricular study plans.

3.33 Computer Network. This subcomponent will provide multimedia and information technology and equipment to secondary schools to foster student acquisition of higher-order thinking and problem-solving skills. There is emerging evidence that computer software, in conjunction with the use of simple everyday equipment and materials and teaching methods, is a cost-effective alternative to laboratories in the teaching of science[18/]. This subcomponent has been designed on the basis of experience gained from the computer network established under the MECE project in 150 rural and urban primary schools. The computer network implementation in secondary education was initiated under the Pilot Project covering 62 schools across the country.

3.34 The project would finance the equipment of a multimedia room in each participating secondary school. Each multimedia room would provide computing services for classes of up to 20 students. The equipment in each room would include about 11 computers, three printers,

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18/ Walberg, H.J., "Improving School Science in Advanced and Developing Countries", *Review of Educational Research*, Vol 61, No. 1, (Spring 1991), pp. 25-69.

multimedia accessories, and general software (word processing, data base, spreadsheets, desk-top publishing, drawing) and more pedagogical software for students and teachers. The project would incorporate into the network existing computers currently available in some secondary schools. The project would finance technical assistance and training provided by higher education institutions in the country. The project would also finance the interconnection with other national and international communication networks. Computers would be interconnected by telephone, occupying phone lines mostly at night when telephone rates are lower. Finally, the project would finance the establishment of a monitoring and impact evaluation system to measure creativity and innovation displayed by students, evolution of student's cognitive skills, and interpersonal relations induced through the network.

3.35 All publicly financed secondary schools would be brought into the network following a demand-driven approach based on the school's capacity to integrate its activities with other elements of MECE-EM through the SPGs. MECE has shown that participating schools would probably undergo a process of gradual technological assimilation, beginning with an initial acceptance of the technology, followed by an adaptation phase and finally, the emergence of locally designed innovations. Because this process is slow, implementation would proceed gradually. The training to be provided, replicated from MECE, would consist of workshops to familiarize teachers and students with the multimedia equipment, technology, and software, and to disseminate the uses of the network in other schools.

3.36 School Infrastructure. This subcomponent aims to: (i) provide the essential infrastructure and furniture needed to successfully implement the school libraries, the computer network technological rooms, and the teaching methods transformation components; and (ii) improve the image and identity of the secondary schools. Regarding essential infrastructure, the project would finance approximately 890 infrastructure projects to: remodel libraries, computer facilities, and teacher meeting facilities; construct new libraries and computer facilities; and improve bathrooms, electrical installations, and roofs. The project would also finance furniture for about 1,500 libraries, computer facilities, and teacher meeting rooms. The implementation of this subcomponent was initiated in 1994 under the Pilot Program in 124 secondary schools.

3.37 Regarding improvement of the image and identity of secondary schools, the project would finance the acquisition and distribution of about 1,500 flags, emblems, and signs, and school-based refurbishing initiatives. Additionally, the project would finance technical assistance, transportation and subsistence to supervise the implementation of this component at the national level. The experience gained from the infrastructure remodelling, maintenance, and construction of primary schools under MECE and the Pilot Program would be applied in this project.

3.38 **Enhancing Sectoral Managerial Capacity (US$ 7.6 million; 4.4 percent of total baseline cost).** In order to address the sectoral management issues at all levels of decision making, the project would finance the implementation of leadership and management training programs for school principals and heads of disciplinary areas, and the establishment, updating, and maintenance of a Technical Support Network (TSN). Additionally, the project would build

upon MECE's institutional strengthening activities in execution since 1992, which include the enhancement of sectoral planning, monitoring and management capacities.

3.39 The leadership and management training programs for school principals and heads of disciplinary areas aims to: (a) improve their capacity to manage secondary schools in a decentralized framework; and (b) provide the necessary leadership to promote the improvement of curricular, pedagogical, and evaluation practices in their schools. The project would finance the provision of local and international technical assistance to develop the training workshops and materials, and also to train approximately 1,600 school principals and 1,600 heads of disciplinary areas in communication, leadership, strategic planning, problem solving, and appropriate use of educational resources.

3.40 To assist interested schools with the implementation of different project components, as well as municipalities with enhancement of management capacity, the project would finance: (i) the creation, maintenance, and dissemination of a TSN Directory, which would be made available to all 1,600 publicly subsidized secondary schools, as well as to the 334 municipalities; and (ii) the design and implementation of administrative and financial mechanisms to enable interested secondary schools use the services provided by the TSN. The TSN Directory would be updated annually by the Project Coordination Unit (PCU). Technical assistance provided by the network members (para. 3.2 (j)) would be evaluated by the PCU based on stringent quality control criteria. Network members which do not satisfy this criteria would be removed from the roster. The project would finance the printing and distribution of 8,500 Directories.

3.41 MECE has allocated about US$16.4 million to: (a) acquire computers and peripheral equipment, vehicles, office furniture, communication and reproduction equipment tailored to the specific needs of the central, regional, and provincial offices of MINEDUC; (b) develop training materials and manuals needed to carry out training programs for the SEREMIS, DEPROV, municipalities, and participating schools which aim to strengthen the skills of managers; (c) strengthen MINEDUC's management information system to provide timely and reliable data for program formulation, implementation, and evaluation; and (d) support the implementation of educational programs at all levels of decision making. MECE-EM would provide additional resources to continue institutional strengthening activities up to the year 2000. Specifically, the project would finance technical assistance, equipment, and studies to: (i) reinforce MINEDUC's analytical capacity in the areas of analysis of benefits and costs of alternative policies, including those related to tertiary education; (ii) implement strategic planning; (iii) complement the SEREMIS, DEPROV, and the municipalities with information and communication equipment to improve their efficiency in dealing with secondary education; (iv) enhance the Secondary Education Academic Achievement Assessment (SIMCE-Media); and (v) improve management capacity at all levels of decision-making.

4. PROJECT COST AND FINANCING PLAN

A. Cost of the Project

4.1 The total cost of the project is estimated at US$207 million based on estimated prices as of September 1994. The foreign exchange cost is estimated at US$37.5 million, or 18 percent of the total cost. Costs of each component, subcomponent, and expenditure category, were derived from detailed surveys, using schools, students, and teachers as the units of analysis. Table 4.1 summarizes the estimated project costs by component and main intervention categories. Detailed project costs are shown in Annex E.

4.2 **Contingency Allowances.** Physical contingencies amount to 15 percent of base costs for civil works, 10 percent for textbooks and libraries, 5 percent for other educational resources and operating costs, and 3 percent of base costs for goods and equipment for all components. No physical contingencies were applied to consultant services. Price contingencies for foreign costs are based on a projected international inflation rate of 2.2 percent per year for the 1995-2000 period.

4.3 **Duties and Taxes.** Locally procured goods are subject to a value added tax (VAT) of 18 percent. Imported goods are subject to a customs tax (11 percent) and the 18 percent VAT. The estimated base cost of the project includes these local taxes, which amount to approximately US$30.2 million. Local tax expenditures would be totally financed with counterpart funds.

B. Financing Plan

4.4 The project would be financed by a Bank loan of US$35 million, or 16.9 percent of total project cost net of duties and taxes. It would cover 45 percent of foreign exchange expenditures and 13 percent of the estimated local costs. The government of Chile would finance the remaining US$172 million, including duties and taxes. Table 4.2 shows the project financing plan, with a breakdown by project categories, while Annex E, Table E-5 shows the project yearly financing by source and category of expenditure.

C. Education Sector Budget for FY95

4.5 The Chilean government will have the capability to sustain the project financially, given the increases in public financing of the education sector expected to result from the high priority assigned to the sector by the current administration. One illustration of the sector's importance is the FY95 Budget Law submitted by the Ministry of Finance to the Congress, which provides

Table 4:1 Summary Cost Table
(US$'000)

	Local	Foreign	Total	Percent of Base	Percent of Foreign
Reform. of Curriculum & Develop. of Eval. Capacity					
Curriculum & Evaluation Unit	717	0	717	0.4	0
Curricular Products	2,469	0	2,469	1.4	0
Evaluation & Certification	1,581	0	1,581	0.9	0
Dissemination	180	0	180	0.1	0
Technical Assistance	103	158	261	0.2	61
Equipment	4	14	18	0.0	76
SUB-TOTAL	5,054	172	5,226	3.0	3
Alternative Curricular Activ. for At-Risk Sec. Students					
Training	1,705	0	1,705	1.0	0
Workshop Materials	4,581	10	4,591	2.7	0
Personnel	6,213	0	6,213	3.6	0
Monitoring	556	0	556	0.3	0
SUB-TOTAL	13,056	10	13,065	7.6	0
Linkage with the Private Productive Sector					
In-Service Teacher Training	645	0	645	0.4	0
Certification	7	0	7	0.0	0
Dissemination	40	0	40	0.0	0
SUB-TOTAL	693	0	693	0.4	0
In-Service Teacher Training					
Technical Assistance	950	0	950	0.6	0
Training Materials	1,036	0	1,036	0.6	0
Training Events	450	0	450	0.3	0
Monitoring	791	0	791	0.5	0
SUB-TOTAL	3,227	0	3,227	1.9	0
PDEs					
Training	267	0	267	0.2	0
Training Materials	86	0	86	0.0	0
Grant Fund	20,054	0	20,054	11.6	0
Dissemination	28	0	28	0.0	0
Monitoring	23	0	23	0.0	0
SUB-TOTAL	20,457	0	20,457	11.9	0

	Local	Foreign	Total	Percent of Base	Percent of Foreign
Educational Resources					
Technical Assistance	58	0	58	0.0	0
Textbooks	12,390	7,650	20,040	11.6	38
School Libraries	15,404	7,342	22,748	13.2	32
Teaching Materials	4,836	2,818	7,653	4.4	37
School Computer Network	10,713	15,537	26,250	15.2	59
SUB-TOTAL	43,401	33,347	76,748	44.5	43
Infrastructure					
Construction & Refurbishing	20,916	0	20,916	12.1	0
Equipment & Materials	18,412	0	18,412	10.7	0
SUB-TOTAL	39,328	0	39,328	22.8	0
Institutional Strengthening					
Studies	300	0	300	0.2	0
Training	4,843	0	4,843	2.8	0
Technical Support Network	2,479	0	2,479	1.4	0
SUB-TOTAL	7,622	0	7,622	4.4	0
Project Coordination Unit					
Personnel	2,121	0	2,121	1.2	0
Monitoring	55	0	55	0.0	0
Project Dissemination	2,932	16	2,948	1.7	1
Evaluation Studies	1,100	0	1,100	0.6	0
SUB-TOTAL	6,209	16	6,225	3.6	0
TOTAL BASE COST	139,046	33,545	172,590	100.0	19
PHYSICAL CONTINGENCIES	7,763	1,879	9,642	5.6	
PRICE CONTINGENCIES	22,668	2,099	24,767	14.4	
TOTAL PROJECT COST	169,477	37,523	207,000		

US$1.41 billion for the Ministry of Education (Annex F, Table F-1). This budget reflects a 5.8 percent real increase in education spending compared with the FY94 budget. The government recognizes that sector recurrent spending cannot grow more than proportionately to the overall growth of public revenues and spending. Furthermore, under a framework of budgetary constraints, spending within the sector has to be carefully targeted to accomplish its quality and equity objectives. The project, with its emphasis on improving quality, external and internal efficiency, and equity through targeting of schools in low-income communities, is fully consistent with sectoral

Table 4:2 Financing Plan by Expenditure Category
(US$'000)

CATEGORY	TOTAL	BANK	GOVERNMENT
Civil Works	25,974	0	25,974
Computing Equipment	17,057	16,852	205
Textbooks and Manuals	23,119	0	23,119
Libraries and Teaching Aids	31,980	0	31,980
PDEs	24,093	15,835	8,258
Consultant Services	24,084	0	24,084
Salaries	753	0	753
Furniture and Equipment	15,058	0	15,058
Transportation and Per-Diem	5,424	0	5,424
Operating Costs	6,672	0	6,672
PCU	2,604	2,313	291
Subtotal[1/]	176,818	35,000	141,818
Taxes	30,182	0	30,182
Total Project Cost	207,000	35,000	172,000

1/ Net of Taxes

spending targets. Moreover, the project would take place within a context of fiscal surpluses which is favorable to spending in the social sector, especially in education.

D. Recurrent Costs Arising from the Project

4.6 The project has a high content of expenditures on educational resources (textbooks, school libraries, teaching materials, and computers) which represent 44.5 percent of total baseline cost, and on infrastructure, representing another 22.8 percent of total baseline cost. The only incremental recurrent cost introduced by the project is salaries[19/], which represent less than 0.4 percent of total project cost. These salaries (excluding those for the PCU personnel) would be 100 percent financed with counterpart funding throughout the execution of the project.

4.7 The Bank loan would finance (Table 4.2): (a) 99 percent of computer equipment expenditures; (b) 89 percent of the PCU expenditures; and (c) 66 percent of the school-based quality development subprojects (PDEs) expenditures. The Borrower would finance (Table 4.2): (a) 100 percent of taxes, civil works, textbooks and manuals, libraries and teaching aids, consultant services, salaries, furniture

19/ Salaries for PCU personnel is not a recurrent cost as the PCU is dissolved at project completion.

and equipment, transportation and per diem, and operating costs; (b) 34 percent of the PDEs expenditures; (c) 12 percent of the PCU expenditures; and (d) one percent of computer equipment expenditures. The bulk of the project costs financed by the Government would occur during the 1996-1998 period, representing an average of US$43 million per year (Annex E, Table E-5), or about 2.7 percent of the expected sector budget for 1997 (Annex F, Table F-1).

E. Project Sustainability

4.8 The effect of the project on total sector costs and the ability of the government to sustain the expenditures that will result from project implementation are important questions. Annex F, Table F-1, derived from a recent study commissioned by the Bank (Riveros, 1994, reference C.16), shows actual and projected recurrent spending for education that would result from the project for the period 2001 through 2010, estimated at US$9.4 million per year, under an education sector budget growth assumption of 5.8 percent per annum. From the point of view of sustainability, these data show that additional recurrent expenditures would represent on the average 0.5 percent of the estimated sector budget projected for the year, equivalent to 3.0 percent of MINEDUC's forecast secondary education budget. This increase is affordable by the Borrower, especially considering that the Government has assigned the highest priority to this sector.

5. PROJECT IMPLEMENTATION

A. Status of Preparation

5.1 Project preparation was financed by the Government with resources from MECE's secondary assessment component. Each project component and subcomponent presented to the Bank is consistent with the Government's sector policies, objectives, and strategies. Moreover, since the project preparation coordinator reports directly, and on an ongoing basis, to the Minister and Undersecretary of Education, the project enjoys substantial support. The counterpart funds required by MECE-EM for 1995, amounting to US$13.4 million, have been approved by the Congress in the FY95 Budget Law.

B. Implementation Schedule

5.2 The project is expected to be implemented over a six-year period, from January 1995 to December 2000. The completion date would be December 31, 2000 and the closing date would be June 30, 2001. Project activities started after appraisal (January 10, 1995), would be recognized by the Bank as part of the Government's counterpart funding. The yearly physical targets and implementation schedule are shown in Annex G, Tables G-1 and G-2.

C. Project Management

5.3 Project execution would be coordinated by a Project Coordination Unit (PCU), herein referred to as MECE-EM PCU. A National Coordinator would be in charge of the PCU, and assited by a Secondary Education Project Coordinator and Deputy Coordinator. The MECE-EM PCU reports to the Minister and Undersecretary of Education through the National Coordinator, which also is in charge of managing the Bank-financed Primary Education (MECE) Project. The MECE-EM PCU would assist MINEDUC in overseeing the project's implementation and general coordination, and ensuring that the project's execution is carried out according to established guidelines, procedures, and agreed targets. The MECE-EM PCU consists of a small matrix-type managerial organization with six program units (reformulation of curriculum and development of evaluation capacity; alternative curricular activities for socially and educationally at-risk students; in-service teacher training; school-based quality development projects; educational resources; and infrastructure) and four support units (project planning, programming and monitoring; procurement, technical assistance, and personnel; budgeting, financing, disbursement, accounting, and auditing; and legal affairs) as shown in Annex H. No new support units would be established for this project. Instead, the project would utilize MECE's four existing support units. The program units would coordinate and monitor the implementation of their respective project components through MINEDUC's central, regional, and provincial structures.

5.4 The PCU National Coordinator would be assisted by an Ad-Hoc Overseeing Committee presided by the Minister of Education and comprised by the Undersecretary of Education, the Director General of MINEDUC's Education Division, the Director of MINEDUC's Planning and Programming Division, and the Director of the Teacher Training and Educational Research Center (CPEIP). The Ad-Hoc Oversight Committee would meet about every three months to review project implementation, address policy, strategy, and organizational problems that could affect project execution, and review project monitoring indicators.

5.5 During project implementation, the PCU would employ 12 senior level professional consultants, eight technical staff, and up to eight support staff. **During negotiations, the Bank obtained the Borrower's agreement that a PCU, under terms of reference satisfactory to the Bank, would be established and staffed as a condition of Loan effectiveness, and that prior review by the Bank would be required for the appointments of the PCU's National Coordinator, and the MECE-EM PCU's Coordinator and Deputy Coordinator.** Annex H describes in more detail the functions and responsibilities of each MECE-EM PCU unit. **During negotiations, the Bank obtained the Borrower's agreement that the adoption of MECE-EM's Operational Manual by MINEDUC, satisfactory to the Bank, would be a condition of Loan effectiveness.**

5.6 As a condition for disbursement of PDE's subprojects, selected schools would enter into an agreement (already agreed with the Bank) with MINEDUC through the SEREMIs. Such an agreement would be a prerequisite to Bank financing of any such subproject.

D. Procurement

5.7 The categories of expenditures subject to Bank financing, under the project, are: (a) computer equipment; (b) school-based quality development subprojects (PDEs); and (c) PCU personnel. All other expenditure categories would be financed entirely with counterpart funding throughout the project implementation period.

5.8 Procurement methods would require documents and procedures as follows:

(a) International competitive bidding (ICB) would be carried following Bank procurement guidelines, and would require the use of Bank issued standard bidding documents, which are mandatory. Under ICB, domestic preference may be applied, in accordance with Bank guidelines for the procurement of goods. **During negotiations, the Borrower agreed that standard ICB bidding documents for the acquisition of computer equipment, acceptable to the Bank, adopted by MINEDUC be made a condition for Loan effectiveness;**

(b) Local competitive bidding (LCB) would be carried out under procedures to be agreed with the Bank using approved standard bidding documents. **During negotiations, the Borrower agreed that standard LCB bidding documents, acceptable to the Bank, adopted by MINEDUC would be a condition for Loan effectiveness;**

(c) Local and international shopping would be carried out according to procedures acceptable to the Bank which will require a minimum of three price quotations obtained from eligible suppliers; and

(d) Selection and appointment of consultants for the PCU would be done in accordance with World Bank Guidelines for the Use of Consultants (August 1981).

5.9 Table 5.1 summarizes procurement under the Bank loan. In addition to the requirements described in para. 5.8, procurement of categories subject to Bank financing would comply with the following procedures:

a) **Computer equipment (computers, peripheral equipment, and computer software)** would be procured on the basis of: (i) ICB procedures for packages of US$350,000 equivalent, or more; (ii) LCB procedures for packages valued above US$100,000 and below US$350,000 equivalent; and (iii) local or international shopping for packages valued at US$100,000 equivalent or less. Aggregate totals to be procured under these methods are: US$20.2 million, US$1.8 million, and US$0.8 million, respectively;

b) **PDE** funds to be allocated to eligible schools would range from a minimum of US$2,500 to a maximum of US$15,000 per school per PDE. Procurement may include goods (paper, utensils, and materials), technical assistance, and services

Table 5:1 Procurement Arrangements a/
(US$ Million)

CATEGORIES	ICB	LCB	OTHER	N.B.F. f/	TOTAL
Civil Works				30.65 (0.00)	30.65 (0.00)
Computing Equipment	20.25 (14.93)	1.83 (1.35)	0.78b/ (0.57)		22.86 (16.85)
Textbooks and Manuals d/				28.73 (0.00)	28.73 (0.00)
Libraries and Teaching Aids d/				39.47 (0.00)	39.47 (0.00)
PDEs			24.09c/ (15.83)		24.09 (15.83)
Consultant Services				25.95 (0.00)	25.95 (0.00)
Salaries				0.75 (0.00)	0.75 (0.00)
Furniture and Equipment				17.77 (0.00)	17.77 (0.00)
Transportation and Per-Diem				6.25 (0.00)	6.25 (0.00)
Operating Costs				7.87 (0.00)	7.87 (0.00)
PCU Personnel			2.60 (2.31)		2.60 (2.31)
Total e/	20.25 (14.93)	1.83 (1.35)	27.47 (18.72)	157.45 (0.00)	207.00 (35.00)

a/ Totals include taxes and contingencies. Amounts in parentheses show allocations from Loan proceeds.
b/ Local/international shopping.
c/ Local shopping, or by direct contracting where price quotations cannot be obtained.
d/ Although Bank financing would not apply, procurement under these categories would follow local procurement procedures described in paras. 3.25, 3.27, and 3.31.
e/ Total may not add due to rounding.
f/ N.B.F.= Not Bank financed.

(transportation, rental of conference rooms, meetings, etc.). Given the nature of the PDEs, procurement of goods, with an aggregate total of about US$24.1 million, would be done preferably through local shopping. Direct contracting may apply when price quotations cannot be obtained up to an overall aggregate amount of US$8.0 million

equivalent. Grant requests and procurement procedures to be agreed upon would be reviewed by the DEPROVs;

c) **PCU Personnel (consulting services)** would be appointed through procedures stated in para. 5.8(d); and

d) **Civil works; textbooks and manuals; libraries and teaching materials; consultant services (other than PCU personnel); salaries; furniture and equipment; transportation and per-diems; operating costs; and taxes** would be financed entirely from counterpart funds.

5.10 **Prior Review.** Prior review by the Bank would be required for all documentation concerning the: (i) ICB procurement of computer equipment; (ii) procurement of computer equipment for the first LCB contract awarded each year of project implementation; and (iii) terms of reference of all the higher-level positions in the PCU (Annex H) and the qualifications and employment conditions for the PCU National Coordinator, and the MECE-EM PCU Coordinator and Deputy Coordinator. All other documentation for contracts related to categories subject to Bank financing would be reviewed by sampling on an ex-post basis during Bank supervision missions. If it were determined that procurement was not made in accordance with agreed procedures, then no expenditures for such items would be financed with proceeds from the Loan and the Special Account would have to be reimbursed accordingly by the Borrower. The proposed review procedures would cover about 46 percent of the total value of Bank financed contracts and expenditures under the project. This percentage may appear to be low, but the Bank is financing only 17 percent of total project cost, and as explained in para. 5.9(b), procurement related to the PDEs totalling US$24.1 million would not be subject to prior review procedures. However, ex-post review of the PDE grant-fund award process would be conducted during project supervision, on a sample basis, covering not less than five percent of the PDEs implemented. MECE's three years of experience in carrying out procurement procedures under Bank guidelines, and the fact that MECE-EM's procurement will be carried out by the same MECE team, would facilitate effective procurement operations.

E. Disbursement and Accounts

5.11 The proceeds of the Loan are expected to be disbursed in accordance with the schedule shown in Annex I, Table I-1 over a period of six years, which is about the average country profile for Chile (5.5 years), but shorter than the profile for the LAC region (7 years). The disbursement period was determined after taking into account the advanced status of project design, MINEDUC's execution capacity, and the yearly budget amounts approved by the Ministry of Finance. The allocation and disbursement of the Bank loan are summarized in Table 5.2.[20/]

20/ This loan disbursement arrangement, tailored to the expected pace of project execution, conforms to the recently amended Operational Directive (OD) 12.00, Disbursements, para. 26.

Table 5:2 Allocation and Disbursement of IBRD Loan

CATEGORIES	AMOUNT OF THE LOAN ALLOCATED (US DOLLAR EQUIVALENT)	PERCENT OF EXPENDITURES TO BE FINANCED BY IBRD
Computing Equipment	15,000,000	100 a/
PDEs	14,000,000	100 b/
PCU Personnel	2,000,000	90
Unallocated	4,000,000	NA
Total	35,000,000	NA

a/ 100 percent of foreign expenditure and 80 percent of all other goods procured locally.
b/ See para. 3.20(a).

NA = Not applicable.

5.12 Disbursements would be made against certified Statements of Expenditures (SOE) for: (a) computer equipment contracts below US$350,000 except for the first LCB computer equipment contract each year; (b) each PDE subproject, under such terms and conditions as the Bank shall specify by notice to the Borrower; and (c) higher-level personnel in the PCU (Annex H) estimated to cost US$50,000 equivalent or less, except the PCU manager, the MECE-EM's coordinator and deputy coordinator. Disbursements for contracts requiring prior review would be fully documented. Relevant documentation in support of SOEs and of consultant contracts not subject to prior review would not be submitted to the Bank, but would be retained by the PCU and made available to the Bank during supervision missions.

5.13 **Special Account**. The Borrower would establish a Special Account in the Central Bank of Chile, under terms and conditions satisfactory to the Bank. The Special Account would be denominated in US dollars and would be established with an authorized allocation of US$2.2 million (the estimated four-month disbursement requirement for the expenditure categories) after loan effectiveness. The initial deposit of up to US$1.5 million will be made, and the full amount of the authorized allocation will be released when disbursements reach a level of US$6 million equivalent. Withdrawals from the Special Account would be made by MINEDUC as needed and the Account would be replenished by the Bank periodically at the request of MINEDUC on the basis of standard disbursement procedures. Project expenditures would be monitored by the PCU on behalf of MINEDUC. Records of the Special Account deposits would be available for review by Bank supervision missions, and would be audited annually by an independent auditor satisfactory to the Bank.

F. Audits

5.14 The Bank would require that an independent auditor acceptable to the Bank: (a) audit all accounts, SOEs, and Special Accounts; (b) apply auditing standards and procedures satisfactory to the Bank and conforming to generally accepted auditing practices; (c) carry out its auditing work in a timely manner so that an annual report would be presented no later than six months after the end of each fiscal year; and (d) render an audit opinion or the reasons why such an opinion cannot be rendered. Given the expected geographical dispersion of PDEs under execution, the Bank would require that basic elements of conventional financial management, accounting and auditing be included specifically for the PDE project component in the auditing procedures of the project, and that the procurement process of between 5 to 10 percent of the PDEs in execution be audited on annual basis.

G. Project Monitoring, Evaluation and Supervision

5.15 Key efficiency, quality, and equity indicators (Annex J, Table J-1) would be monitored to track improvements in the overall effectiveness of secondary education. To support spot-checking of any of the project's subcomponents, a target matrix has been prepared (Annex G, Table G-1). **During negotiations, the Borrower agreed that a final version of monitoring indicators concerning equity improvements between socially and educationally high, medium, and low risk secondary education students, satisfactory to the Bank, would be included in the Operational Manual (paras 5.5 and 7.2(b)).**

5.16 Overall monitoring and evaluation of the project would be the responsibility of the PCU. Specific tasks include: (a) preparing annual progress reports on project implementation, which would be submitted to the Bank by June 30 of each year starting in 1996; (b) measuring quantitative and qualitative objectives achieved against the monitoring indicators shown in the implementation matrix; (c) annually updating project implementation schedules and action plans; (d) selecting consultants to carry out the impact evaluation studies included in the components of MECE-EM; and (e) preparing a Project Completion Report that would be submitted to the Bank no later than six months after the closing date of the Loan (on or about December 31, 2001). Annex J, Table J-2 delineates the Bank's supervision plan, including: (i) frequency of missions; (ii) skill mix needed in each supervision mission; (iii) project launch seminar; (iv) mid-term review; (v) regular Bank and specific supervision schedules; and (vi) local and international consultants. Supervision arrangements are expected to require a total of about 53 staffweeks during project execution. Given the good experience under the previous Bank-financed project (MECE), this project would require less supervision resources from the Bank and, instead, rely more on the Government's close supervision in the field.

5.17 **Mid-Term Review.** A project Mid-Term Review would be held in the thirtieth month after the date of project effectiveness. The Mid-Term Review would focus on project implementation,

management, and impact on the project's objectives concerning the enhancement of secondary education: (a) external and internal efficiency; (b) quality; (c) equity; (d) strengthening of institutional management; and (e) institutionalization of MECE-EM within the MINEDUC existing structure. The Mid-Term Review would also include the lessons learned during project implementation to be incorporated into a Government's action plan for structural reform (para. 2.49). **During negotiations, the Borrower: (i) confirmed the date, scope and content of the Mid-Term Review agreed with the Bank during appraisal; and (ii) agreed that the Mid-Term Review performance and impact indicators would be included in the Operational Manual** (see paras. 5.5, 7.1(b), 7.2(b), and Annex J, Table J-3).

6. EXPECTED BENEFITS AND RISKS

A. Expected Benefits

6.1 The project would lead to cost savings and efficiency gains as a result of reducing the number of secondary education students repeating grades and/or dropping out of school. Similarly, the project would generate economic benefits accruing to students who do not repeat or become dropouts as a result of the project, and whose labor market performance would improve. Other benefits include: (a) increased productivity stemming from a more educated and trainable labor force with higher-order thinking and problem-solving skills; (b) increased social mobility, especially for low-income secondary education students; and (c) reduced social inequality stemming from targeted project interventions. Finally, the project would further strengthen managerial capacity in the MINEDUC, municipalities, and secondary schools.

B. Expected Risks

6.2 The major risks associated with project implementation are: (a) possible distortions in targeting project interventions; (b) possible difficulties by some secondary schools, especially those serving socially and educationally at-risk students, in integrating the different lines of action of the project; and (c) possible development of non-practical learning materials prototypes (with new curricular content) by the project that would not easily be used by the teachers. These risks would be minimized by: (a) defining precise targeting criteria to benefit schools located in poor urban and rural areas; (b) the gradual implementation of project components through a school demand-driven approach, and by scheduling time for learning by doing; and (c) soliciting from the TSN learning material prototypes (with new curricular content), including concrete and simple teaching examples which highlight the competencies they intend to promote.

7. AGREEMENTS REACHED AND RECOMMENDATION

A. Agreements Reached

7.1 During **negotiations, the Borrower confirmed:**

(a) the date, scope and content of the Mid-Term Review agreed during the appraisal mission (para. 5.17);

(b) that the project's performance and impact indicators would be included in the Operational Manual (paras. 5.5 and 5.17); and

(c) that an annual progress report on project implementation would be submitted to the Bank for its review not later than June 30 of each year, starting in 1996.

7.2 For Loan **effectiveness, the Bank would require that:**

(a) a PCU, under terms of reference satisfactory to the Bank, be established and staffed by MINEDUC under qualifications agreed with the Bank (paras. 5.3, 5.4, 5.5, and 5.10);

(b) an Operational Manual of MECE-EM, satisfactory to the Bank, be adopted by MINEDUC (para. 5.5);

(c) standard bidding documents, acceptable to the Bank, for the ICB and LCB procurement of computer equipment be adopted by MINEDUC (paras. 5.8(a) and (b));

(d) FY96 counterpart funding for MECE-EM be submitted to Congress for its approval (paras. 2.54 and 4.4); and

(e) a legal opinion on behalf of the Borrower, satisfactory to the Bank, by a counsel acceptable to the Bank, with respect to the validity and execution of the Loan Agreement, be furnished to the Bank.

7.3 As a condition for **disbursement of PDE subprojects**, selected schools would enter into an agreement with MINEDUC, satisfactory to the Bank, through the SEREMIs. Such an agreement would be a prerequisite to Bank financing of any subproject.

B. Recommendation

7.4 Subject to the above assurance and conditions, the project would constitute a suitable basis for a Bank loan of US$35 million equivalent for the Republic of Chile, repayable in 15 years, including five years of grace, at the Bank's standard variable interest rate.

ANNEXES

CHILE
SOCIAL EXPENDITURES AND INDICATORS

Table A:1 Chile - Poverty Indicators

Year	1987	1990	1992
Per Capita GNP (US$)	1,445	2,144	2,726
Income Received by the Poorest 20 percent (percent)		6.0	6.5
Income Received by the Richest 20 percent (percent)		52.2	51.8
Gini Coefficient	51.1	50.7	50.4
Indigent (percent of total)	16.8	13.8	9.0
Poor but not Indigent (percent of Total)	27.8	26.3	23.7

Source: CASEN 1987, 1990, and 1992.
Note: Gini coefficient, based on monetary income (including subsidies), is calculated by the program Poverty Calculation (POVCAL).

Table A:2 Chile - Public Expenditures 1990-1993
(percent of Total Government Expenditures)

Year	Education	Health	Housing	Social Security	Other Subsidies	Total
1989	11.7	9.2	4.7	27.7	0.2	53.5
1990	11.8	9.3	4.9	29.7	0.1	55.8
1991	12.0	9.9	5.3	28.0	0.1	55.3
1992	12.7	10.6	5.3	27.3	0.1	56.0

Source: Ministerio de Hacienda, "Estadística de las Finanzas Públicas, 1989-92", Santiago, Chile

Table A:3 Chile - Public Expenditures 1990-1993
(percent of GDP)

Year	Education	Health	Housing	Social Security	Other Subsidies	Total
1989	2.8	2.2	1.1	6.7	1.2	14.0
1990	2.7	2.1	1.1	6.9	1.1	13.9
1991	2.9	2.4	1.3	6.7	1.2	14.5
1992	3.0	2.6	1.3	6.6	1.3	14.8
1993	3.0	2.7	1.3	6.9	1.4	15.3

Source: Ministerio de Hacienda, Dirección de Presupuesto, 1993. Santiago, Chile

Table A:4 Chile - Public Social Expenditures 1990-1993
(percent of Total Social Expenditures)

Social Sector	1990	1991	1992	1993
Education	19.5	20.0	29.7	19.5
Health	15.3	16.4	17.4	17.8
Housing	8.0	8.7	8.7	8.7
Social Security	49.0	46.6	44.7	44.8
Other Subsidies	8.2	8.3	8.5	9.2
Total	100.0	100.0	100.0	100.0

Source: Ministerio de Hacienda, Dirección de Presupuesto, 1993. Santiago, Chile

Table A:5 Chile - Social Indicators of Development

Indicator	Unit Measure	Latest Single Year		Same Region/Income Group			
		1970-75	1980-85	Most Recent Estimate 1987-1992	Latin America Caribbean	Lower-Middle Income	Next Higher Income Group
RESOURCES AND EXPENDITURES							
HUMAN RESOURCES							
Pop.(Mre=1992)	thousands	10,350	12,122	13,599	453,294	942,547	477,960
Age Dep. Ratio	ratio	0.73	0.59	0.58	0.67	0.66	0.64
Urban	% of pop.	78.4	83.2	85.1	72.9	57.0	71.7
Pop. Growth Rate	annual %	1.6	1.7	1.6	1.7	1.4	1.6
Urban	"	2.4	2.2	1.9	2.6	4.8	2.5
Labor Force(15-64)	thousands	3,322	4,276	4,922	166,091		181,414
Agriculture	% of lab.force	20	16				
Industry	"	27	25				
Female	"	25	28	29	27	36	29
Urban	number	115	108				
Rural	"	84	78				
NATURAL RESOURCES							
Area	thou.sq.km.	756.95	756.95	756.95	20,507.48	40,697.37	21,836.02
Density	pop.per.sq.km.	13.7	16.0	17.7	21.7	22.8	21.5
Agricultural Land	% of land area	21.8	23.5	24.0	40.2		41.7
Change in Agric. Land	annual%	2.0	0.4	0.8	0.5		0.3
Agric.Land under Irrig.	%	7.6	7.1	7.1	3.2		9.3
Forests & Woodland	thou.sq.km.	87	88	88			
INCOME							
Share of top 20% of Households	% of income			52			
Share of Bottom 40% of " "	""			17			
Share " " 20% of " "	" "			7			
EXPENDITURE							
Food	% of GDP		21.4				
Staples			5.3				
Meat, Fish, Milk, Cheese, Eggs			8.1				
Cereal Imports	thou. m.t.	716	486	1,095	25,032	74,924	49,174
Food Aid in Cereals "	"	323	10	13	1,779	4,054	282

Indicator	Unit Measure	Latest Single Year 1970-75	Latest Single Year 1980-85	Most Recent Estimate 1987-92	Same Region/Income Group: Latin America Caribbean	Same Region/Income Group: Lower Middle Income	Same Region/Income Group: Next Higher Income Group
RESOURCES AND EXPENDITURES							
EXPENDITURE (Cont.)							
Food Production per capita	1987=100	94	97	119	104		109
Fertilizer Consumption	kg/ha	5.6	11.6	17.3	15.5		68.8
Share of Agric. in GDP	% of GDP	6.6	7.4	8.5	8.9		8.1
Housing	% of GDP		10.0				
Average household size	pers.per Hshold	5.0					
Urban	"	5.0					
Fixed Investing Housing	% of GPD	4.5	4.2				
Fuel & Power	% of GDP		1.6				
Energy Consump. per Capita	kg. of oil equiv.	567	570	837	912	1,882	1,649
Transport and Communication	% of GDP		8.0				
Fixed Invest. Trans. Equipment	" "	2.8	2.9				
Total Road Length	thou.km.	75	79	80			
INVESTMENT IN HUMAN CAPITAL							
Pop. per Physician	persons	2,160	1,231	2,152			
Pop. per nurse	"	459	371	335			
Pop. per Hospital Bed	"	265	294	320	508	516	385
Oral Rehyd. Therapy (under 5)	% of cases			1	62		54
GROSS ENROLLMENT RATIO							
Secondary	%of schl.age pop.	48	67	72	47		53
Female	"	52	70	75			
Pupil Teacher Ratio Primary	pupils per teacher	35	33	25	25	26	25
Pupil Teacher Ratio Secondary	"	16					
Pupils Reaching Grade 4	% of Cohort	84	96				71
Repeater Rate Primary	% of total Enroll	12	7		14		11
Illiteracy	% of pop.(age15+)	11	8	7	15		14
Female	% of fem.(age15+)		8	7	17		17
Newspaper Circulation	per thou. pop.	90	94	455	99	100	117

World Bank International Economics Department, April 1994

CHILE
EDUCATION SYSTEM ORGANIZATION

Chart B:1 Chile - Organizational Chart for MINEDUC, SEREMIS, and DEPROV

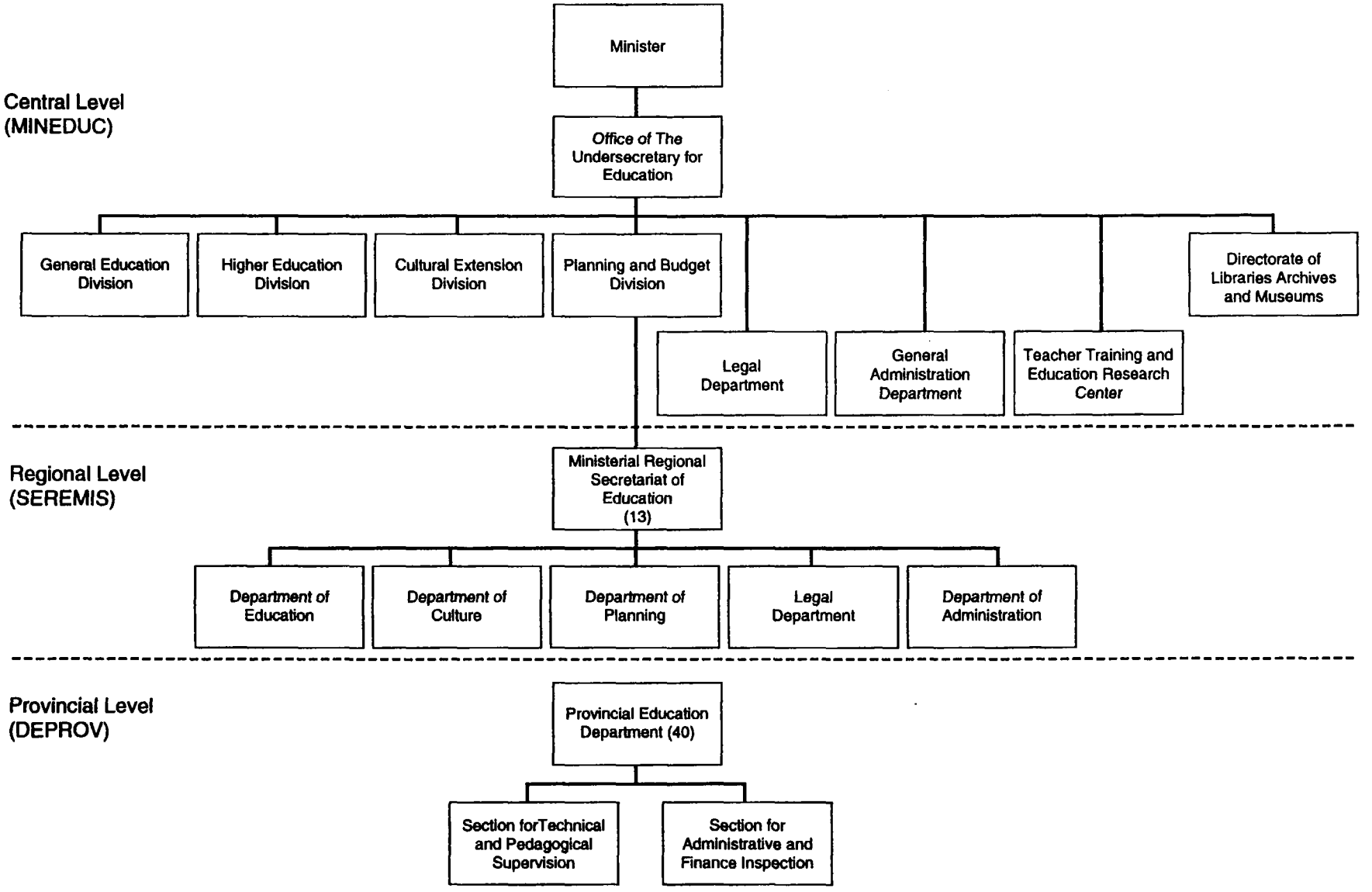
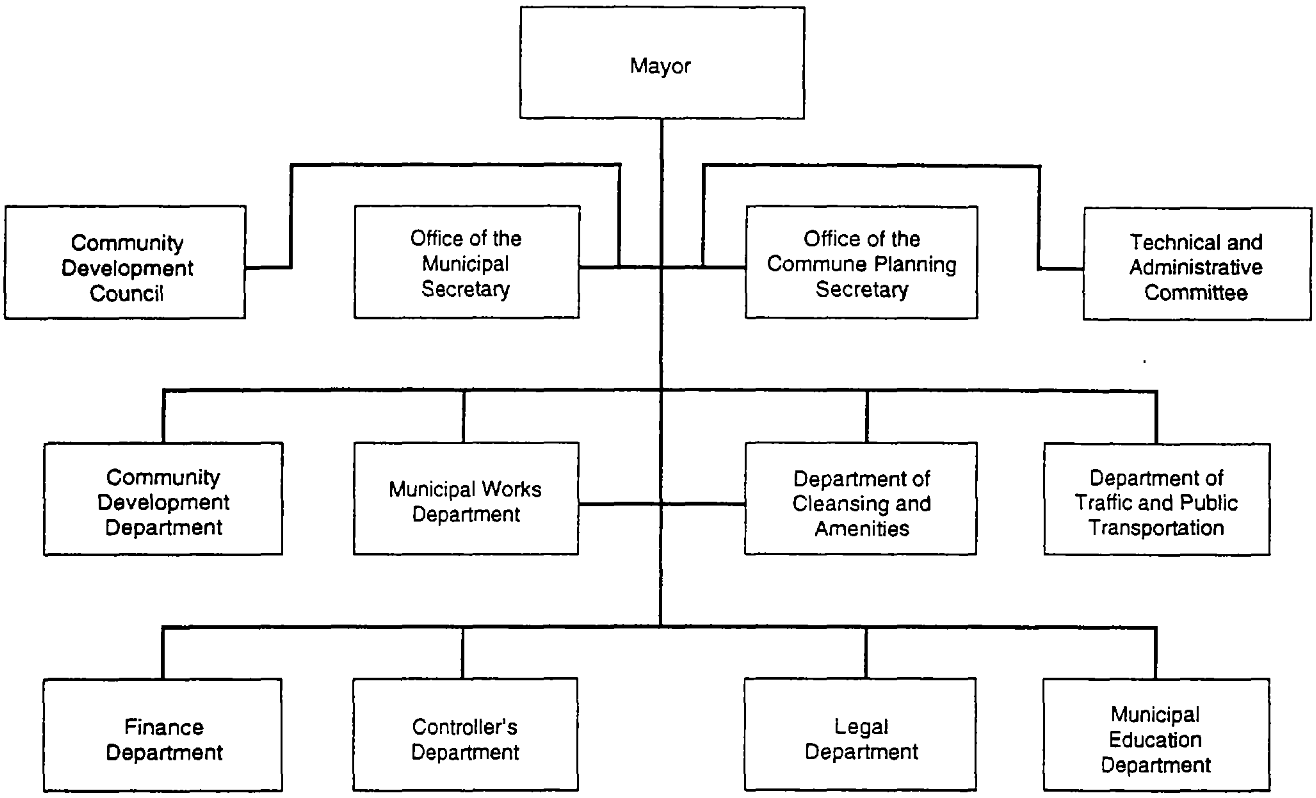


Chart B:2 Chile - Organizational Chart for Municipal Administration



CHILE

EDUCATION STATISTICS

Table C:1 Chile - Schools by Levels and Type of School in 1993

Level	Municipal	Private Subsidized	Private Paid	Corporations	Total
Preschool	2,361	1,289	683	2	4,335
Primary	5,888	2,166	556	3	8,613
Special	212	167	4	0	383
Scientific-Humanistic Secondary	711	456	396	12	1,575
Technical-Vocational Secondary	398	294	8	85	785
Total	9,570	4,372	1,647	102	15,691

Source: MINEDUC, División de Planificación y Presupuesto, 1993. Santiago, Chile
Note: "Other" comprise artistic and sport schools.

Table C:2 Chile - Total Enrollment by Levels and Type of School in 1993

Level	Municipal	Private Subsidized	Private Paid	Corporations	Total
Preschool	134,370	86,315	35,596	67	256,348
Primary	1,239,000	669,200	155,824	1,081	2,066,046
Special	16,763	15,535	121	0	32,419
Scientific-Humanistic Secondary	218,920	104,094	64,072	4,371	391,457
Technical-Vocational Secondary	115,626	98,371	1,087	46,274	261,358
Total	1,725,620	973,515	256,700	51,793	3,007,628

Source: MINEDUC, División de Planificación y Presupuesto, 1993. Santiago, Chile

Table C:3 Chile - Teacher and School Principals by Levels and Type of School in 1993

Level	Municipal	Private Subsidized	Private Paid	Corporations	Total
Preschool	4,494	2,443	2,473	4	9,415
Primary	53,821	18,382	6,564	38	78,813
Special	2,629	1,325	241	0	4,228
Scientific-Humanistic and Technical-Vocational Secondary	22,474	14,365	10,228	3,107	50,187
Total	83,418	36,515	19,506	3,149	142,643

Source: MINEDUC, División de Planificación y Presupuesto, 1993. Santiago, Chile

Table C:4 Chile - Secondary Enrollment by Track, Region and Rural Areas in 1993

Region	Scientific-Humanistic Track	Technical-Vocational Track	Total	% Rural	% of Total
I	11,661	8,525	20,186	2.5	3.1
II	16,292	7,908	24,200	0.0	3.7
III	7,101	5,427	12,528	1.8	1.9
IV	16,525	9,902	26,427	1.0	4.0
V	50,879	21,311	72,190	2.4	11.0
VI	23,767	9,105	32,872	2.5	5.0
VII	21,961	14,441	36,402	3.9	5.5
VIII	54,099	29,903	84,002	2.7	12.4
IX	18,326	18,857	37,183	2.7	5.7
X	25,991	14,981	40,972	3.6	6.1
XI	2,714	1,296	4,010	3.8	0.6
XII	4,379	3,323	7,702	0.0	1.2
Metropolitan	137,762	116,379	254,141	1.8	39.8
Total	391,457	261,358	652,815	2.2	100.0

Source: MINEDUC, División de Planificación y Presupuesto, 1993. Santiago, Chile

Table C:5 Chile - Secondary Gross Enrollment: 1970-1992 Rate Trend

Year	Percentage
1970	49.7
1982	65.0
1984	73.3
1986	77.3
1988	81.8
1990	80.0
1992	76.2

Source: MINEDUC, División de Planificación y Presupuesto, 1992. Santiago, Chile

Table C:6 Latin America - Comparative Education Indicators

	Illiterate Popul. as % of 15+		Educational Expenditures as Percent of		Pre-School Ed.**	Enrollment Ratios: Primary Ed.		Secondary Ed.		Higher Ed.
	Total	Female	GNP	Gov. Exp.	Net	Gross	Net	Gross	Net	Gross
ARGENTINA										
1975	NA	NA	2.5	9.5	N/A	106	96	54	42	27.2
1980	6.1	NA	3.6	15.1	28	106	90	56	38	21.6
1992*	4.5	5.0	4.0	8.9	39	115	90	74	56	40.8
BRAZIL										
1975	24.3	NA	3.0	NA	NA	88	71	26	9	10.7
1980	25.5	NA	3.5	NA	14	99	81	34	14	11.9
1992*	22.3	23.5	4.5	17.7	27	95	84	38	15	10.9
CHILE										
1975	NA	NA	4.1	12.0	NA	112	94	50	34	15.6
1980	8.9	NA	4.6	11.9	24	112	98	55		13.2
1992*	5.6	NA	3.2	11.2	32	98	87	76	55	17.8
COLOMBIA										
1975	NA	NA	2.2	16.4	NA	118		39		8.0
1980	14.8	NA	1.9	14.3	10	128	75	44		10.6
1992*	11.9	12.9	2.7	22.4	14	122	73	56		13.6
PERU										
1975	27.5	38.2	3.5	17.5	NA	113		46		14.6
1980	18.1	26.1	3.2	12.8	25	114	86	59		19.4
1992*	13.0	20.1	2.4	16.4	29	118	87	64		25.5
URUGUAY										
1975	6.1	NA	2.2	10.0	NA	107		60		16.0
1980	NA	NA	2.6	9.3	26	106		60		17.3
1992*	4.6	4.1	3.1	15.1	23	109	91	77		47.8

Sources: UNESCO Statistical Yearbook, 1990; World Bank, Social Indicators Data Base
(*) 1992 or latest
(**) Enrollment as a percentage of children aged 3-5.

Table C:7 Selected Asian and OECD Countries Comparative Education Indicators, 1992

	Illiterate Popul. as percent of		Educational Expenditures as Percent of		Enrollment Ratios			
					Primary Ed.		Secondary Ed.	
	Total	15+ Female	GNP	Gov. Exp.	Gross	Net	Gross	Net
Asia								
Hong Kong	...	...	2.3	15.9	108	...	75	...
Indonesia	18.4	24.7	3.0	9.8	117	98	45	38
Korea, Republic of	3.7	6.5	7.9	16.2	107	100	87	79
Malaysia	21.6	29.6	5.0	16.9	93	...	58	...
Singapore	...	...	3.2	11.5	108	100	70	...
Thailand	7.0	10.1	2.6	21.1	90	...	33	...
OECD								
United States	**	**	5.3	14.7	104	...	...	88
France	**	**	5.2	10.6	109	...	...	83
United Kingdom	**	**	5.2	12.5	105	...	...	79

Sources: UNESCO World Education Report, 1993; World Bank, Social Indicators Data Base; Education at a Glance, OECD Indicators, 1993.
(*) 1992 or latest available
(**) According to UNESCO, illiteracy is less than 5 percent

Table C:8 Chile - Rates of Return to Investments in Secondary Education a/
(in percent)

Year	Private	Social
1960	12.5	10.6
1965	10.6	8.8
1968	12.3	10.0
1972	10.1	7.7
1976	12.2	9.7
1978	11.1	8.8
1982	11.2	9.0
1985	11.0	9.2
1990	10.7	8.5

a/: Estimated with the net present value of the direct and indirect educational costs and benefits valued at prices prevailing in the private sector.

Source: Riveros, L. "The Economic Return to Schooling in Chile. An Analysis of its Long-term Fluctuation", *Economic of Education Review*, Vol. 9, No. 2, pp. 111-121, 1990.

Table C:9 Chile - Repetition and Dropout Rates by Type of School in 1993
(in percent)

Type of School	Repetition S-H	Dropout S-H	Repetition T-VOC	Dropout T-VOC	Repetition Both	Dropout Both
Municipal	13.9	8.8	15.2	7.8	14.4	8.4
Private Subsidized	9.1	4.5	13.1	7.1	11.0	5.8
Private Paid	4.0	2.4	9.4	4.4	4.0	2.5
Corporations	8.4	5.3	10.0	5.5	9.8	5.4
Total	11.0	6.6	13.5	7.1	12.0	6.7

Source: MINEDUC, División de Planificación y Presupuesto, 1993. Santiago, Chile

Table C:10 Chile - Repetition and Dropout Rates by Region in 1993
(in percent)

Region	Repetition S-H	Dropout S-H	Repetition T-VOC	Dropout T-VOC	Repetition Both	Dropout Both
I	11.7	8.4	12.5	7.6	12.0	8.1
II	12.7	6.6	18.1	5.2	14.4	6.2
III	15.4	8.4	13.3	7.8	14.5	8.1
IV	11.5	6.3	13.4	8.1	13.3	7.0
V	10.5	6.9	12.1	6.1	11.0	6.7
VI	10.4	6.6	8.0	4.5	9.7	6.0
VII	11.6	7.9	13.6	7.1	12.4	7.5
VIII	13.2	7.4	12.1	6.1	12.8	7.0
IX	12.6	7.5	16.4	8.2	14.5	7.8
X	12.3	8.3	13.7	6.4	12.8	7.7
XI	16.9	8.8	20.8	5.6	18.0	7.9
XII	12.1	5.0	11.5	4.6	11.8	4.8
Metropolitan	9.1	5.2	13.4	7.7	11.0	6.3
Total	11.0	6.6	13.5	7.1	12.0	6.8

Source: MINEDUC, División de Planificación y Presupuesto, 1993. Santiago, Chile

Table C:11 Chile - Cohort Average Length of Study: 1975-92 Trend by Type of School and Track
(in years)

Cohort	Secondary	Municipal	Private-Subsidized	Private-Paid
1975-1980	5.7	6.1	5.4	4.6
1977-1982	5.6	5.9	5.3	4.5
1980-1985	5.4	5.6	5.0	4.4
1985-1990	5.2	5.6	5.0	4.4
1987-1992	5.3	5.7	5.0	4.4

Source: MINEDUC, División de Planificación y Presupuesto, 1992. Santiago, Chile

Table C:12 Chile - Secondary Enrollment Lagging Behind Standard Age
(in percent of total enrollment)

Grade	Percentage
1st	30.9
2nd	32.1
3rd	30.5
4th	26.8

Source: Source : Jarufe T., et al., "Indicadores de Cobertura en la Educación Media" Pontificia Universidad Católica de Chile, Santiago, 1993.

Table C:13 Chile - Cognitive Achievement in Spanish and Mathematics by Type of School and Track
(in percent of correct answers)

	S-H Track									T-VOC Track		
	Private-Paid			Private-Subsidized			Municipal					
Grade	1st	2nd	4th	1st	2nd	4th	1st	2nd	4th	1st	2nd	4th
Spanish	60	56	55	48	47	47	40	41	43	43	38	39
Math	42	37	30	29	26	22	26	24	20	25	22	20

Source: Jarufe, T., and Himmel, E., "Determinación de la Calidad de la Educación Media Chilena". Pontificia Universidad Católica de Chile, Santiago, 1993

Table C:14 Chile - Secondary Enrollment Trend by Income Quintile
(in percent of total enrollment)

Income Quintile	Enrollment		
	1987	1990	1992
1	70.4	71.4	73.4
2	77.1	79.6	77.5
3	85.4	77.8	81.8
4	88.4	86.1	87.7
5	96.1	96.2	96.9
Total	80.9	80.2	81.9

Source: ODEPLAN, Encuesta CASEN 1987, Departamento de Planificación y Estudios. MIDEPLAN, Encuesta CASEN 1990 y 1992, Santiago, 1993.

Table C:15 Chile - Secondary Enrollment Rate by Region and Urban-Rural Areas in 1990 (in percent)

Region	Urban	Rural	Total
I	93.4	60.4	92.4
II	90.1	42.6	89.6
III	84.0	68.2	83.1
IV	86.0	49.6	73.3
V	86.4	62.0	83.4
VI	82.3	58.0	73.7
VII	88.1	38.8	66.8
VIII	83.6	49.7	75.6
IX	84.4	40.5	66.6
X	82.1	40.1	63.4
XI	78.7	62.2	75.5
XII	87.2	64.5	86.3
Metrop	84.8	67.2	84.2
Total	85.3	48.7	79.0

Source: CASEN Survey, Departamento de Planificación y Estudios Sociales, MIDEPLAN, 1990.

Table C:16 Chile - Secondary Enrollment by Income and Type of School
(in percent of total enrollment)

Type of School	Upper-middle and Upper Income Household	Lower-middle and Lower Income Households
Private-Paid	100	0
Private-Subsidized	42	58
Municipal	18	82

Source: MINEDUC, SIMCE-Secondary, 1993.

Table C:17 Chile - Secondary Schools Ranked by Achievement Results
(in percent of total schools)

Type of School	School Ranking					
	Lower		Middle		Upper	
	Spanish	Math	Spanish	Math	Spanish	Math
S-H Track						
Private-Paid	3.5	0.0	7.9	10.2	53.5	61.3
Private-Subsidized	15.8	21.1	23.7	23.9	32.6	22.6
Municipal	28.1	42.1	39.5	28.4	11.6	9.7
T-VOC Schools	52.6	36.8	28.9	37.5	2.3	6.5

Source: Jarufe, T., and Himmel, E., "Determinación de la Calidad de la Educación Media Chilena". Pontificia Universidad Católica de Chile, Santiago, 1993.
Note: Given X the mean score and S the standard deviation, then:
Lower ranking (LR) schools if school score is below (X-0.5S)
Upper ranking (UR) schools if school score is above (X+0.5S)
Middle ranking (MR) schools if school score is above LR but below UR.

Table C:18 Chile - Destiny of Secondary School Graduates by Socioeconomic Status
(in percent of total graduates)

Destination of Secondary Graduates	Income Quintile					
	I	II	III	IV	V	Total
Higher Education	4.8	8.7	9.7	23.5	45.0	15.4
Employed	25.5	42.1	49.9	43.9	29.3	38.9
Unemployed	18.4	7.2	6.0	4.7	1.7	8.2
Inactive	40.1	34.3	28.1	13.4	14.7	27.8
Other Studies	11.2	7.7	6.3	14.5	9.3	9.7
Total	100.0	100.0	100.0	100.0	100.0	100.0

Source: Larrañaga J.O., "Financiamiento Universitario y Equidad: Chile 1990" Cuadernos de Economía, Vol 29, No 88, December 1992.

CHILE
EDUCATIONAL EXPENDITURES

Table D:1 Public Educational Expenditures as Percent of GDP and Total Public Expenditures (TPE)
(in percent)

Year	Percent of GDP	Percent of TPE
1980	4.1	11.3
1982	5.5	12.3
1984	4.7	12.6
1986	4.0	10.9
1988	3.4	9.1
1990	2.8	9.7
1992	3.0	11.2

Source: MINEDUC, División de Planificación y Presupuesto, 1992. Santiago, Chile

Table D:2 Selected Developed Countries - Public Educational Expenditures as Percent of GDP and Total Public Expenditures (TPE)
(in percent)

Country	Percent of GDP	Percent of TPE
USA	7.4	13.8
Japan	5.0	11.4
France	6.0	8.0
Germany	5.4	na
Spain	5.6	na
Av.OECD	6.4	12.8
Hungary	6.7	na
Chile	3.0	11.2

Source: MINEDUC, División de Planificación y Presupuesto, 1992. Santiago, OECD,"Education at a Glance: OECD Indicators". Paris 1993.

Table D:3 Total Educational Expenditures by Source
(in percent)

	Public Funding			Private Funding		
Year	MINEDUC	FNDR	Municipal	University	Non-University	Total
1989	47	1	3	19	31	100
1990	45	1	2	20	32	100
1991	46	1	2	19	31	100
1992	47	2	3	21	29	100

Source: MINEDUC, División de Planificación y Presupuesto, 1992. Santiago, Chile
Notes: MINEDUC includes all educational costs, including higher education subsidies.
Municipal includes own-generated resources from contributions and income other than the federal subsidy payment.
University spending has been estimated by the Bank on the basis of enrollment, unit costs, and share of unit costs in public and private universities.
Non-university private expenditures includes preschool, primary, and secondary paid private schools. Does not include estimate of parents' contributions to private-subsidized schools.

Table D:4 Educational Expenditures by Category of Expense
(in percent)

	Operational Expenditures			Subsidies				
Year	Personal	Services	Texts	Subvention	Higher Education	Other	Invest.	Total
1970	47.6	5.7	0.0	3.4	29.4	3.4	10.5	100.0
1980	50.3	3.2	0.3	7.3	37.5	0.4	1.0	100.0
1985	12.9	1.6	0.2	45.2	27.6	12.4	0.2	100.0
1990	5.3	1.2	0.1	63.8	18.8	10.5	0.2	100.0
1992	5.5	2.6	0.3	56.9	16.8	17.1	0.8	100.0

Source: MINEDUC, División de Planificación y Presupuesto, 1992. Santiago, Chile.

Table D:5 Annual Growth of Educational Expenditures by Educational Level (in million constant pesos of December 1992)

Year	Preschool	Basic	S-H Secondary	T-VOC Secondary	Subsidies to Higher Education	Total Public Educat. Spending
1980	25,354.8	165,697.1	36,755.9	22,136.0	147,103.5	418,027.4
1992	36,594.6	232,591.8	36,353.5	32,337.7	86,620.7	438,122.9
Growth (percent)	3.1	2.9	-0.1	3.2	-4.3	0.4

Source: MINEDUC, División de Planificación y Presupuesto, 1992. Santiago, Chile.

Table D:6 Distribution of Educational Expenditures by Educational Level (in percent)

Year	Preschool	Basic	S-H Secondary	T-VOC Secondary	Subsidies to Higher Education	Total Public Educat. Spending
1980	6.1	39.6	8.8	5.3	35.2	100.0
1985	6.2	47.0	11.0	4.6	27.3	100.0
1990	7.9	52.4	10.2	7.2	19.6	100.0
1992	8.4	53.1	8.3	7.4	19.8	100.0

Source: MINEDUC, División de Planificación y Presupuesto, 1992. Santiago, Chile.

CHILE SECONDARY EDUCATION QUALITY IMPROVEMENT PROJECT
PROJECT COST TABLES AND FINANCING

Table E:1 Project Cost by Component and Main Expenditure Category (US$'000)

	Civil Works	Comput. Equip.	Textbooks Manuals Libraries Teaching Materials	PDEs (Fund)	Cons. Services	Salaries	Furniture Equip.	Trans. Per Diem Oper. Costs	PCU Personnel	TOTAL
Reformulation of Curriculum and Development of Evaluation Capacity		19	2,358	218	2,771	753		142		6,260
Alternative Curricular Activities for at Risk Secondary Students			4,532		7,791		13	3,420		15,756
Linkage with the Private Productive Sector			13		4			823		840
Pedagogical Process Transformation			1,205		1,167			1,484		3,856
PDEs			74	23,875	360			105		24,414
Educational Resources		22,810	59,864		7,446			544		90,664
Infrastructure	30,649				102		17,757	165		48,672
Institutional Strengthening			160		5,020			3,992		9,172
Project Coordination Unit		21			1,286			3,452	2,604	7,364
Total Project cost a/	30,649	22,850	68,207	24,093	25,948	753	17,770	14,126	2,604	207,000

a/ Totals may not add due to rounding. Totals include taxes and contingencies.

Table E:2 Project Cost by Component and Year of Implementation (US$'000)

	1995	1996	1997	1998	1999	2000	Total
Reformulation of Curriculum and Development of Evaluation Capacity	460	1,579	1,653	1,244	580	744	6,260
Alternative Curricular Activities for at Risk Secondary Students	1,247	2,600	3,696	4,398	2,497	1,318	15,756
Linkage with the Private Productive Sector	61	105	286	372	11	4	840
Pedagogical Process Transformation	594	875	1,052	494	474	367	3,856
PDEs	64	1,462	4,276	7,452	6,859	4,302	24,414
Educational Resources	5,179	26,066	23,192	22,373	7,450	6,404	90,664
Infrastructure	4,518	23,915	18,288	1,952	0	0	48,672
Institutional Strengthening	377	1,163	1,755	2,669	1,915	1,293	9,172
Project Coordination Unit	728	1,660	1,255	1,655	1,027	1,040	7,364
Total Project Cost a/	13,228	59,423	55,454	42,609	20,813	15,473	207,000

a/ Totals may not add due to rounding

Table E:3 Project Cost by Main Category of Expenditure and Year of Implementation (US$'000)

	1995	1996	1997	1998	1999	2000	Total
Civil Works	2,740	15,859	12,051	0	0	0	30,649
Computing Equipment	267	6,625	7,853	7,960	145	0	22,850
Textbooks and Manuals	270	5,623	6,184	5,574	5,497	5,586	28,735
Libraries and Teaching Aids	4,566	14,649	10,305	9,024	663	265	39,472
PDEs	31	1,395	4,214	7,390	6,814	4,248	24,093
Consultant Services	1,383	4,020	4,873	6,766	5,528	3,379	25,948
Salaries	75	129	133	136	138	142	753
Furniture and Equipment	1,740	7,953	6,132	1,946	0	0	17,770
Transportation and Per Diem	953	1,395	1,413	1,290	624	579	6,253
Operating Costs	913	1,442	1,954	1,990	859	716	7,873
PCU Personnel	291	334	343	534	545	558	2,606
TOTAL a/	13,228	59,423	55,454	42,609	20,813	15,473	207,000

a/ Totals may not add due to rounding

Table E:4 Detailed Project Cost by Component and Subcomponent and Year of Implementation (US$'000)

	1995	1996	1997	1998	1999	2000	Total
Reform. of Curriculum and Develop. of Eval. Capacity							
Curriculum and Evaluation Unit	85	143	146	150	153	156	832
Curricular Product	216	1,035	831	616	0	186	2,884
Evaluation and Certification	45	317	569	402	329	358	2,019
Dissemination	31	36	37	37	38	39	218
Technical Assistance	65	49	71	39	61	5	289
Equipment	19	0	0	0	0	0	19
Sub-Total	460	1,579	1,653	1,244	580	744	6,260
Alternative Curricular Activ. for at Risk Secondary Students							
Training	240	498	645	660	0	0	2,043
Workshop Materials	509	974	1,356	1,585	895	457	5,776
Personnel	445	1,029	1,556	1,981	1,468	779	7,258
Monitoring	52	99	140	172	134	82	680
Sub-Total	1,247	2,600	3,696	4,398	2,497	1,318	15,756
Linkage with the Priv. Prod. Sector							
In Service Teacher Training	50	96	275	361	0	0	783
Certification	0	0	1	5	3	0	9
Dissemination	11	9	10	6	8	4	48
Sub-Total	61	105	286	372	11	4	840
Pedagogical Process Transform.							
Technical Assistance	156	179	184	188	192	196	1,095
Training Materials	208	432	598	30	0	0	1,268
Training Events	93	107	110	112	114	0	537
Monitoring	136	157	161	164	167	171	957
Sub-Total	594	875	1,052	494	474	367	3,856
PDEs							
Training	44	50	52	53	54	55	307
Training Materials	7	33	14	18	12	20	105
Grant Fund	4	1,363	4,193	7,372	6,788	4,221	23,942
Dissemination	4	11	12	4	0	1	33
Monitoring	4	4	5	5	5	5	27
Sub-Total	64	1,462	4,276	7,452	6,859	4,302	24,414

	1995	1996	1997	1998	1999	2000	Total
Educational Resources							
Technical Assistance	10	11	11	12	12	12	68
Textbook	0	4,828	4,941	5,050	5,156	5,274	25,248
School Libraries	4,404	9,108	9,117	3,493	190	33	26,345
Teaching Materials	306	4,913	99	3,970	68	0	9,355
School Computer Network	460	7,206	9,023	9,848	2,024	1,085	29,647
Sub-Total	5,179	26,066	23,192	22,373	7,450	6,404	90,664
Infrastructure							
Construction and Refurbishing	2,792	11,838	12,157	6	0	0	26,793
Equipment and Materials	1,726	12,076	6,132	1,946	0	0	21,880
Sub-Total	4,518	23,915	18,288	1,952	0	0	48,672
Institutional Strengthening							
Studies	0	0	0	119	121	124	363
Training	373	868	966	1,388	1,128	1,156	5,879
Technical Support Network	4	295	789	1,162	666	13	2,930
Sub-Total	377	1,163	1,755	2,669	1,915	1,293	9,172
Project Coordination Unit							
Personnel	272	313	320	511	522	534	2,471
Monitoring	10	11	11	11	12	12	67
Project Dissemination	446	789	808	826	342	329	3,540
Evaluation Studies	0	548	116	306	151	165	1,286
Sub-Total	728	1,660	1,255	1,655	1,027	1,040	7,364
TOTAL PROJECT COST a/	13,228	59,423	55,454	42,609	20,813	15,473	207,000

a/ Totals may not add due to rounding

Table E:5 Project Annual Financing by Source and Category of Expenditure (US$'000)

	1995	1996	1997	1998	1999	2000	Total
Bank Financing							
Computing Equipment	0	4,944	5,860	5,940	108	0	16,852
PDEs	0	918	2,773	4,863	4,484	2,796	15,835
PCU Personnel	0	334	343	534	545	558	2,313
TOTAL a/	0	6,196	8,976	11,337	5,138	3,353	35,000
Government Financing							
Civil Works	2,740	15,859	12,051	0	0	0	30,649
Computing Equipment	267	1,681	1,993	2,020	37	0	5,998
Textbooks and Manuals	270	5,623	6,184	5,574	5,497	5,586	28,735
Libraries and Teaching Aids	4,566	14,649	10,305	9,024	663	265	39,472
PDEs	31	477	1,441	2,527	2,330	1,453	8,258
Consultant Services	1,383	4,020	4,873	6,766	5,528	3,379	25,948
Salaries	75	129	133	136	138	142	753
Furniture and Equipment	1,740	7,953	6,132	1,946	0	0	17,770
Transportation and Per Diem	953	1,395	1,413	1,290	624	579	6,253
Operating Costs	913	1,442	1,954	1,990	859	716	7,873
PCU Personnel	291	0	0	0	0	0	291
TOTAL a/	13,228	53,227	46,479	31,272	15,675	12,119	172,000

a/ Totals may not add due to rounding

CHILE: FORECAST SECTOR BUDGET

Table F:1 Expected Impact of Project as Percent of MINEDUC's Forecast Education Budget (in US$ million)

Year	Education Sector Budget 1/	Secondary Sub-Sector Budget		Budget Increase by Project 3/	% Secondary Budget	Total IBRD	% Total Project Cost	Impact of Project on Education Budget
		No Project 2/	Project					
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
			(3) = (2) + (4)		(5) = (4)/(3)		(7) = (6)/(4)	(8) = (4)/(1)
1994	1334.3	208.3						
1995	1411.7	220.4	233.6	13.2	5.7%	0.0	0.0%	0.9%
1996	1493.6	233.2	292.6	59.4	20.3%	6.2	10.5%	4.0%
1997	1580.2	246.7	302.2	55.5	18.4%	9.0	16.3%	3.5%
1998	1671.8	261.0	303.6	42.6	14.0%	11.3	26.6%	2.5%
1999	1768.8	276.2	297.0	20.8	7.0%	5.1	24.6%	1.2%
2000	1871.4	292.2	307.7	15.5	5.0%	3.4	22.0%	0.8%
2002	2094.8	327.0	336.4	9.4	2.8%			0.4%
2004	2344.8	366.1	375.5	9.4	2.5%			0.4%
2006	2624.7	409.8	419.2	9.4	2.2%			0.4%
2008	2938.0	458.7	468.1	9.4	2.0%			0.3%
2010	3288.7	513.4	522.8	9.4	1.8%			0.3%

Note 1/: Budget 1 assumes growth at 5.8% per annum.
Note 2/: Assumes growth at 5.8% per annum.
Note 3/: Includes recurrent costs arising from project as of year 2,000.
Source: Riveros, L., "Economic Return of a Quality-Improving Project in the Secondary Education in Chile," Department of Economics, University of Chile, Santiago, Chile, 1994.

CHILE - YEARLY PROJECT PHYSICAL TARGETS AND IMPLEMENTATION SCHEDULE

Table G:1 Yearly Project Component Targets

ACTION PLAN	OVERALL TARGET	1995	1996	1997	1998	1999	2000
1.REFORMULATION OF CURRICULUM AND DEVELOPMENT OF EVALUATION CAPACITY							
(A) Reformulation of Curriculum							
Learning Materials:							
Design of curriculum material prototypes	40		15	25			
Reproduction of curriculum material prototypes	16,000			4,800	11,200		
Training and Dissemination:							
Seminars	10	6	4				
Sets of materials	500	300	200				
Competitive Fund for activities by Professional Associations	6	1	1	1	1	1	1
Study Tours	10	2	2	2	2	2	
(B) Evaluation Capacity							
External Evaluation Sample Test:							
12th graders	80,000				40,000		40,000
Internal Evaluation:							
Evaluation sets	78,400	960	12,240	26,800	19,200	9,600	9,600
Evaluation guidelines	120,000	24,000	42,000	54,000			
Certification:							
Certification sets for 10th grade students	9,600					4,800	4,800
Certification sets for 12th grade students from T-VOC	2,304	312	270	753	969		

ACTION PLAN	OVERALL TARGET	1995	1996	1997	1998	1999	2000
2. ALTERNATIVE CURRICULAR ACTIVITIES FOR AT-RISK SECONDARY STUDENTS							
Training:							
Schools trained on local teams	1,480	200	360	460	460		
School training sets on local teams	2,960	400	720	920	920		
Work modules on local teams	11,840	1,600	2,880	3,680	3,680		
Schools trained on leadership	1,480	200	360	460	460		
School training sets on leadership	4,400	600	1,080	1,380	1,380		
Work modules on leadership	17,760	2,400	4,320	5,520	5,520		
Training Workshops:							
Work modules	9,360	640	1,360	2,040	2,560	1,840	920
Schools with youth workshops	1,480	320	680	1,020	1,280	920	460
Training sets	27,144	1,856	3,944	5,916	7,424	5,336	2,668
National Events:	6	1	1	1	1	1	1
Student Network:							
Daily Bulletin	600,000	100,000	100,000	100,000	10,000	100,000	100,000
Videos	10,360	1,400	2,520	3,220	3,200	0	0
3. LINKAGES WITH THE PRIVATE PRODUCTIVE SECTOR							
Training:							
Fellowships in private sector	1,434	108	179	502	645	0	0
Dissemination:							
Brochures	4,965	1,655		1,655		1,655	
Funds for regional meetings	48	8	8	8	8	8	8

ACTION PLAN	OVERALL TARGET	1995	1996	1997	1998	1999	2000
4. IN-SERVICE TEACHER TRAINING							
Training:							
Workshops for supervisors	20	4	4	4	4	4	
Materials:							
Instructional videos	3,200	3,200					
Pedagogical Modules for teachers	520,500	24,200	176,150	320,150			
Videos for teachers	6,400	3,200	3,200				
Teaching manuals for teachers	40,150	8,150	14,000	18,000			
Guide for supervisors	600	200	200	200			
Monitoring instruments	80,600	8,150	22,150	32,150	18,150		
Training for educational management:							
School directors	2,560	1,120	1,440				
Organizational management I	4,800	960	1,680	2,160			
Organizational management II	4,800		960	1,680	2,160		
Training for heads of Professional Technical Units:							
Participants	4,400			320	880	1,600	1,600
Training for self-evaluation by teachers:							
Participants	1,600				320	560	720

ACTION PLAN	OVERALL TARGET	1995	1996	1997	1998	1999	2000
5. SCHOOL-BASED QUALITY EDUCATIONAL DEVELOPMENT PROJECTS (PDEs)							
Educational Development Projects	2,000		120	360	620	560	340
Manuals	8,100		900	2,400	4,800		
Training:							
Guide	18,520		1,350	2,870	4,230	3,670	6,400
Video	1,600		1,600				
Dissemination:							
Information brochures	30,000	6,000	10,000	14,000			
Posters	2,700		1,100		1,600		
Fairs for interchange of experiences	160			40	40	40	40
6. PROVISION OF EDUCATIONAL RESOURCES							
(A) TEXTBOOKS							
Sets of textbooks	1,500,000		300,000	300,000	300,000	300,000	300,000
(B) LIBRARIES							
Local libraries:							
Textbooks for local libraries	2,281,600	456,320	912,640	912,640			
Training materials	15,500	15,000					
Training video	1,600		1,600				
Dissemination seminars	52			13	13	13	13
Schools trained	1,600	1,600					

ACTION PLAN	OVERALL TARGET	1995	1996	1997	1998	1999	2000
(B) LIBRARIES (cont.)							
Collective libraries:							
Textbooks for collective libraries	500,000				500,000		
Materials for managing libraries	500,000				500,000		
Schools trained	200				200		
System libraries:							
Sets of software	25					25	
Schools trained	25					25	
Information brochures	11,400	4,900	1,300	1,300	1,300	1,300	1,300
(C) DIDACTIC MATERIAL							
Sets of non-curricular materials	930	180	750				
Training manual	4,900	4,900					
Teaching Materials Catalogue	5,400	1,800		1,800	1,800		
Sets of didactic materials	3,200		1,600		1,600		
(D) COMPUTER NETWORK							
Sets of equipment	1,373	100	320	476	477		
Hardware	9	3	3	3			
Software	9	3	3	3			

ACTION PLAN	OVERALL TARGET	1995	1996	1997	1998	1999	2000
(E) SCHOOL INFRASTRUCTURE							
Projects	891	114	388	389			
Symbols:							
Basic symbols	1,473		1,473				
Equipment:							
Sets of equipment for libraries	1,473	1,473					
Sets of equipment for computer rooms	1,373	100	320	476	477		
Sets of equipment for teachers	1,597		855	742			
Sets of equipment for teaching materials	1,597		1,597				
7. ENHANCING SECTORAL MANAGEMENT CAPACITY							
Technical Support Network:							
Directories	8,500		1,700	1,700	1,700	1,700	1,700

Table G:2 Project Implementation Schedule

	1995	1996	1997	1998	1999	2000
Reform. of Curriculum & Develop. of Eval. Capacity						
Curriculum & Evaluation Unit	10%	17%	18%	18%	18%	19%
Curricular Products	7%	36%	29%	21%	0%	6%
Evaluation & Certification	2%	16%	28%	20%	16%	18%
Dissemination	14%	16%	17%	17%	18%	18%
Technical Assistance	22%	17%	25%	13%	21%	2%
Equipment	100%	0%	0%	0%	0%	0%
SUB-TOTAL	7%	25%	26%	20%	9%	12%
Alternative Curricular Activ. for at Risk Sec. Students						
Training	12%	24%	32%	32%	0%	0%
Workshop Materials	9	17%	23%	27%	15%	8%
Personnel	6%	14%	21%	27%	20%	11%
Monitoring	8%	15%	21%	25%	20%	12%
SUB-TOTAL	8%	17%	23%	28%	16%	8%
Linkage with the Private Productive Sector						
In-Service Teacher Training	6%	12%	35%	46%	0%	0%
Certification	3%	3%	9%	51%	35%	0%
Dissemination	22%	18%	22%	13%	16%	9%
SUB-TOTAL	7%	12%	34%	44%	1%	0%
In-Service Teacher Training						
Technical Assistance	14%	16%	17%	17%	18%	18%
Training Materials	16%	34%	47%	2%	0%	0%
Training Events	17%	20%	20%	21%	21%	0%
Monitoring	14%	16%	17%	17%	18%	18%
SUB-TOTAL	15%	23%	27%	13%	12%	10%
PDEs						
Training	14%	16%	17%	17%	18%	18%
Training Materials	7%	32%	14%	17%	11%	19%
Grant Fund	0%	6%	18%	31%	28%	18%
Dissemination	13%	34%	37%	12%	1%	3%
Monitoring	14%	16%	17%	17%	18%	18%
SUB-TOTAL	0%	6%	18%	31%	28%	18%

	1995	1996	1997	1998	1999	2000
Educational Resources						
Technical Assistance	14%	16%	17%	17%	18%	18%
Textbooks	0%	19%	20%	20%	20%	21%
School Libraries	17%	35%	35%	13%	1%	0%
Teaching Materials	3%	53%	1%	42%	1%	0%
School Computer Network	2%	24%	30%	33%	7%	4%
SUB-TOTAL	6%	29%	26%	25%	8%	7%
Infrastructure						
Construction & Refurbishing	10%	44%	45%	0%	0%	0%
Equipment & Materials	8%	55%	28%	9%	0%	0%
SUB-TOTAL	9%	49%	38%	4%	0%	0%
Institutional Strengthening						
Studies	0%	0%	0%	33%	33%	34%
Training	6%	15%	16%	24%	19%	20%
Technical Support Network	0%	10%	27%	40%	23%	0%
SUB-TOTAL	4%	13%	19%	29%	21%	14%
Project Coordination Unit						
Personnel	11%	13%	13%	21%	21%	22%
Monitoring	14%	16%	17%	17%	18%	18%
Project Dissemination	13%	22%	23%	23%	10%	9%
Evaluation Studies	0%	43%	9%	24%	12%	13%
SUB-TOTAL	10%	23%	17%	22%	14%	14%
TOTAL PROJECT	6%	29%	27%	21%	10%	7%

CHILE - PROJECT COORDINATION UNIT (PCU)

A. Objectives and Structure of the PCU

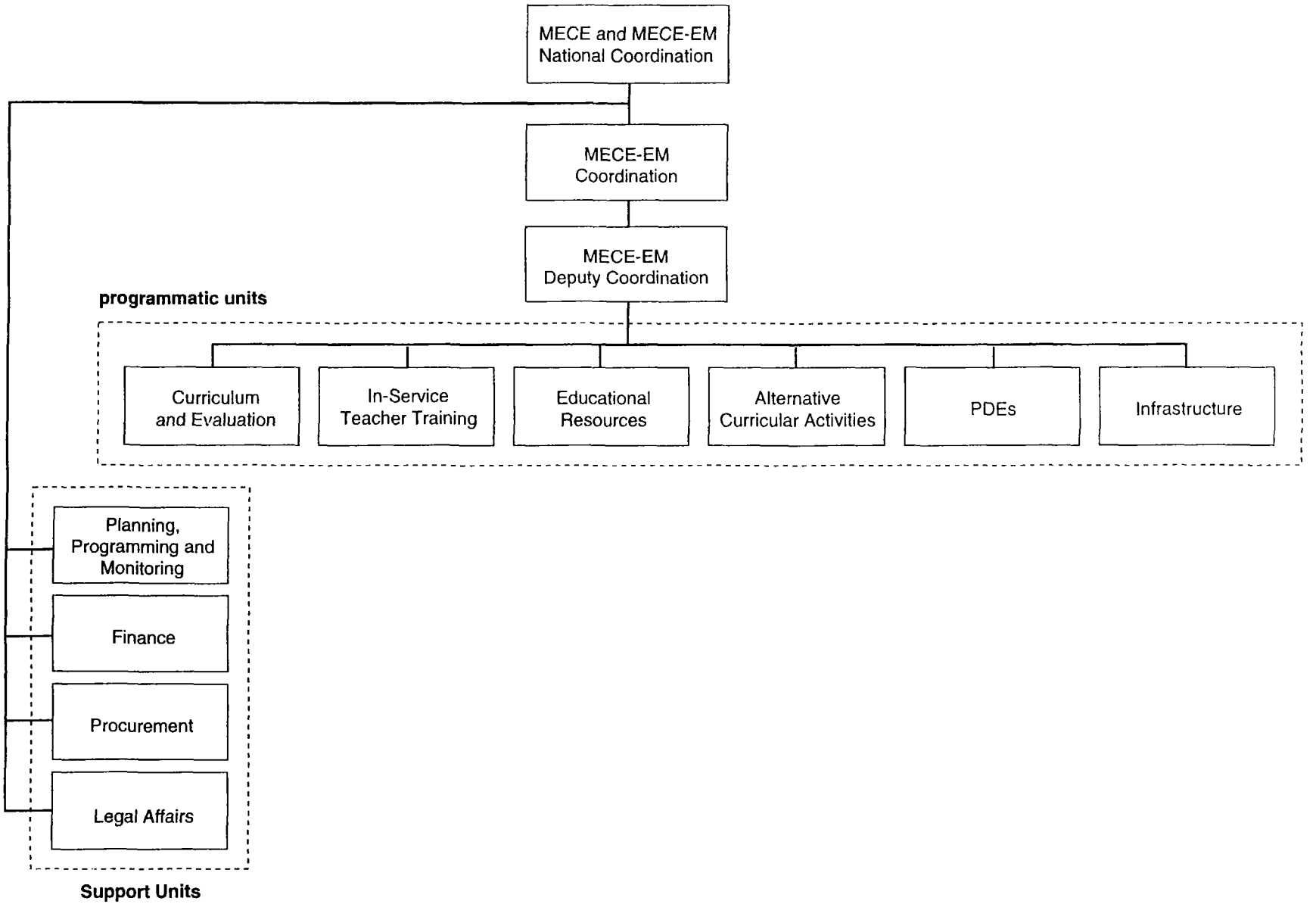
1. Project execution would be coordinated by a Project Coordination Unit (PCU), herein referred to as MECE-EM PCU. A National Coordinator would be in charge of the PCU, and assisted by a Secondary Education Project Coordinator and Deputy Coordinator. The MECE-EM PCU reports to the Minister and Undersecretary of Education through the National Coordinator, which also is in charge of managing the Bank-financed Primary Education (MECE) Project. The MECE-EM PCU would assist MINEDUC in overseeing the project's implementation and general coordination, and ensure that the project's execution is carried out according to established guidelines, procedures, and agreed targets.

2. The MECE-EM PCU would consist of a small matrix-type managerial organization[21/] with six *program* units (reformulation of curriculum and development of evaluation capacity; alternative curricular activities for socially and educationally at-risk students; in-service teacher training; school-based quality development projects; educational resources; and infrastructure) and four *support* units as shown in Chart H-1. No support units would be established for this project. Instead, the proposed project would utilize MECE's four existing support units which comprise the following areas: (i) project planning, programming and monitoring; (ii) procurement, technical assistance, and personnel; (iii) budgeting, financing, disbursement, accounting, and auditing; and (iv) legal affairs. These support units would be strengthened to meet the demands concerning the execution of both MECE and MECE-EM. The program units of MECE-EM would coordinate and monitor the implementation of their respective project components through MINEDUC's central, regional, and provincial structures.

3. The heads of the six program units would report directly to the MECE-EM Coordinator (through the Deputy Coordinator), who in turn would report to the PCU National Coordinator (the same person managing the MECE project). Following the structure established by MECE, the four support units would also report directly to the PCU National Coordinator. The PCU National Coordinator would be assisted by an Ad-Hoc Overseeing Committee presided by the Minister of Education and comprised by the Undersecretary of Education, the Director General of MINEDUC's Education Division, the Director of MINEDUC's Planning and Programming Division, and the Director of the CPEIP. The Ad-Hoc Overseeing Committee would meet about every three months to review project implementation, address policy, strategy, and organizational problems that could affect project execution, and review project monitoring indicators.

21/ In matrix organization theory, a *program* unit is responsible for attaining the organization's objectives (*ends*), whereas a *support* unit is responsible for providing the services (*means*) necessary to accomplish the organization's goals. The performance of the programmatic units measures the *effectiveness* of the organization (*attainment of goals*), whereas the performance of the supportive units measures the *efficiency* of the organization *(resource consumption)*.

Project Coordination Unit (PCU) Organizational Chart
Chart H-1



B. Functions and Responsibilities

4. The specific functions and responsibilities of the PCU and its staff would be to:

(a) **PCU National Coordinator:** (i) direct and supervise the overall execution of both the Bank-financed MECE project and the proposed MECE-EM project; (ii) serve as the technical, administrative, and operational counterpart of the World Bank for both projects (MECE and MECE-EM); (iii) serve as the official liaison to maintain communication between both projects and the different levels of authority within MINEDUC, and between other Ministries, Government agencies, and NGOs; and (iv) periodically report to the Minister and Undersecretary of MINEDUC, as well as to the Bank, on the progress of both projects.

(b) **MECE-EM PCU Coordinator:** (i) coordinate the execution of all the activities included in MECE-EM; (ii) prepare administrative and technical guidelines and procedures required for project coordination; (iii) coordinate and administer the bidding procedures for civil works, local and international consultants, goods, and services required for the project's coordination; (iv) submit to the Bank on a timely basis the disbursement applications for civil works, consultants, and goods and services payments; and (v) periodically report to the PCU National Coordinator on the progress of the MECE-EM project.

(c) **MECE-EM PCU Deputy Coordinator:** (i) coordinate the *substantive* activities of all six *program* units of the PCU; (ii) establish the appropriate coordination for the execution of all the activities included under the linkage with the private sector and institutional strengthening components of MECE-EM; (iii) monitor the execution of the project according to the project monitoring matrix explained in Annex G, Table G-1 and the project key performance indicators shown in Annex J, Table J-1 (also incorporated in the Operational Manual); and (iv) report to the PCU National Coordinator and the MECE-EM Coordinator on the progress achieved.

(d) **Coordinator for Reformulation of Curriculum and Development of Evaluation Capacity:** (i) establish in conjunction with MINEDUC authorities in general, and with the CPEU and SIMCE in particular, the required plan of action to implement the secondary education curriculum reformulation and development of evaluation capacity; (ii) transform, in conjunction with the PCU's Planning, Programming, and Monitoring Coordination, the action plan into specific programs, procedures, schedules, budgets, and disbursement outflows, required by the coordination of this component; (iii) monitor the coordination of all subcomponents contained in this project's component; (iv) report to the MECE-EM PCU Coordinator and Deputy Coordinator on any significant deviations of project targets and procedures related to this component according to prescribed standards; (v) establish, in conjunction with MINEDUC's authorities, the strategy and timing to devolve total execution of this component to MINEDUC's existing structure and implement the agreed action plan; and (vi) coordinate, in conjunction with MINEDUC authorities, all evaluation activities required by this component during the life of the project.

(e) **Coordinator for Alternative Curricular Activities for Socially and Educationally At-Risk Students:** (i) establish, in conjunction with MINEDUC authorities (Department of Extra Curricular Activities of the General Education Division of MINEDUC), the required plan of action to provide alternative curricular activities for at-risk secondary students; (ii) transform, in conjunction with the PCU's Planning, Programming, and Monitoring Coordination, the action plan into specific programs, procedures, schedules, budgets, and disbursement outflows, required by the coordination of this component; (iii) monitor the coordination of all subcomponents contained in this project's component; (iv) report to the MECE-EM PCU Coordinator and Deputy Coordinator on any significant deviations of project targets and procedures related to this component according to prescribed standards; (v) establish, in conjunction with MINEDUC authorities, the strategy and timing to devolve total execution of this component to MINEDUC's existing structure and implement the agreed action plan; and (vi) coordinate, with MINEDUC authorities, all evaluation activities required by this component during the life of the project.

(f) **Coordinator for In-Service Teacher Training:** (i) establish, in conjunction with MINEDUC authorities, the required plan of action to induce the pedagogical and school practices transformation envisaged under the project; (ii) transform, in conjunction with the PCU's Planning, Programming, and Monitoring Area, the action plan into specific programs, procedures, schedules, budgets, and disbursement outflows, required by the coordination of this component; (iii) monitor the coordination of all subcomponents contained in this project's component; (iv) report to the MECE-EM PCU Coordinator and Deputy Coordinator on any significant deviations of project targets and procedures related to this component according to prescribed standards; (v) establish, in conjunction with MINEDUC authorities, the strategy and timing to devolve total execution of this component to MINEDUC's existing structure and implement the agreed action plan; and (vi) coordinate, with MINEDUC authorities, all evaluation activities required by this component during the life of the project.

(g) **Coordinator for School-Based Quality Development Projects (PDEs):** (i) establish, in conjunction with MINEDUC authorities, the required plan of action to induce the participation of supervisors, school principals, ad secondary education teachers in the design and implementation of school-based quality development projects; (ii) transform, in conjunction with the PCU's Planning, Programming, and Monitoring Area, the action plan into specific programs, procedures, schedules, budgets, and disbursement outflows, required by the coordination of this component; (iii) monitor the coordination of all subcomponents contained in this project's component; (iv) report to the MECE-EM PCU Coordinator and Deputy Coordinator on any significant deviations of project targets and procedures related to this component according to prescribed standards; (v) establish, in conjunction with MINEDUC authorities, the strategy and timing to devolve total execution of this component to MINEDUC's existing structure and implement the agreed action plan; and (vi) coordinate, with MINEDUC authorities, all evaluation activities required by this component during the life of the project.

(h) **Coordinator for Educational Resources:** (i) establish, in conjunction with MINEDUC authorities, the required plan of action to provide all the publicly financed secondary schools with textbooks, school libraries, teaching materials, and computer network and multi-media classrooms; (ii) transform, in conjunction with the PCU's Planning, Programming, and Monitoring Area, the action plan into specific programs, procedures, schedules, budgets, and disbursement outflows, required by the coordination of this component; (iii) monitor the coordination of all subcomponents contained in this project's component; (iv) report to the MECE-EM PCU Coordinator and Deputy Coordinator on any significant deviations of project targets and procedures related to this component according to prescribed standards; (v) establish, in conjunction with MINEDUC authorities, the strategy and timing to devolve total execution of this component to MINEDUC's existing structure and implement the agreed action plan; and (vi) coordinate, with MINEDUC authorities, all evaluation activities required by this component during the life of the project.

(i) **Coordinator for Infrastructure:** (i) establish, in conjunction with MINEDUC's Infrastructure Unit, the appropriate plan of action to carry out the required construction and equipping provided by the project; (ii) transform, in conjunction with the PCU's Planning, Programming, and Monitoring Area, the action plan into specific programs, procedures, schedules, budgets, and disbursement outflows, required by the coordination of this component; (iii) monitor the coordination of all subcomponents contained in this project's component; (iv) report to the MECE-EM PCU Coordinator and Deputy Coordinator on any significant deviations of project targets and procedures related to this component according to prescribed standards; (v) establish, in conjunction with MINEDUC authorities, the strategy and timing to devolve total execution of this component to MINEDUC's existing structure and implement the agreed action plan; and (vi) coordinate, with MINEDUC authorities, all evaluation activities required by this component during the life of the project.

(j) **Coordinator for Planning, Programming, Monitoring, and Evaluation:** assist the substantive program units of the PCU to: (i) implement the action plans established for each project component and subcomponent through the respective programs, procedures, schedules, budgets, and disbursement outflows; (ii) assist the MECE-EM PCU Coordinator and Deputy Coordinator to monitor the coordination of all components and subcomponents of the project; and (iii) evaluate the project's impact on the quality, efficiency, and equity of education.

(k) **Coordinator for Procurement, Civil Works, and Technical Assistance:** assist the substantive program units of the PCU to: (i) prepare the procurement documents in accordance with Bank specifications in each bidding procedure required by project coordination; (ii) coordinate the bidding process, which includes calling for bids, evaluating bidding proposals, timely reporting to the Bank, acquiring the required authorization from the Contraloría General de la República, signing contracts, and coordinating the execution of specific contracts; (iii) prepare the bidding documents in accordance with Bank procedures as required by project coordination; (iv) coordinate the hiring of local and foreign consultants required during project execution, which

includes calling for consulting bids, evaluating bidding proposals, timely reporting to the Bank, signing consulting contracts, and coordinating the execution of specific contracts; and (v) maintain effective coordination with the MECE-EM PCU Coordinator and Deputy Coordinator and the specialized counterparts within MINEDUC.

(l) **Coordinator for Finance, Accounting, and Auditing:** assist the substantive program units of the PCU to: (i) disburse funds according to approved budget and procedures; (ii) prepare the disbursement applications in accordance with Bank procedures and guidelines; (iii) carry out the project coordination accounting; (iv) carry out auditing with the Contraloría General de la República following the Bank's guidelines and procedures; and (v) maintain effective coordination with the MECE-EM PCU Coordinator and Deputy Coordinator and the specialized counterparts within MINEDUC.

(m) **Coordinator for Legal Affairs:** assist the MECE-EM PCU Coordinator and Deputy Coordinator in all legal aspects of project coordination and execution.

5. The functions and responsibilities of the **Ad-Hoc Overseeing Committee** would be to: (i) provide guidance in policy and strategy during project execution; (ii) ensure the correct application by PCU's management of targeting criteria during the life of the project; (iii) ensure project sustainability by confirming that counterpart funding required during project execution have been requested by MINEDUC to the Ministry of Finance on a timely fashion; (iv) recommend to the Minister and Undersecretary of MINEDUC actions to be taken to resolve any conflict or dispute arising during project execution; and (v) analyze the accomplishments of project-executed targets. The Overseeing Committee will meet about once every three months to review project coordination, address policy, strategy, and organizational problems that could affect project execution, and review project monitoring indicators.

C. Staffing Requirements

6. During project implementation, the PCU would employ: (i) 12 full-time senior level professionals with experience in their respective professional fields, preferably with background in project coordination of a similar nature; (ii) eight technical staff; and (iii) up to eight support staff (five secretaries and three auxiliary staff) as shown in Table H-1.

D. Financial Administration

7. PCU personnel will be financed 100 percent by the Loan proceeds. The PCU recurrent operation (other than personnel) and investment expenditures would be 100 percent financed by counterpart funding.

8. The Bank will approve the terms of reference for each higher-level coordination position as explained in paras. 4(a) to (m) of Annex H, and qualifications, employment conditions and selection process for the PCU National Coordinator (para. 4(a), Annex H), MECE-EM PCU

Coordinator (para. 4(b), Annex H), and the MECE-EM PCU Deputy Coordinator (para. 4(c), Annex H) (also see paras. 5.5 and 5.10).

Table H:1 Staffing Requirements for the Project Coordination Unit (PCU)

AREAS	PROFESSIONAL	TECHNICAL	SUPPORT 1/	TOTAL
PCU General Coordination	1 2/	1	2	3
MECE-EM Sub-coordination	1	1	1	3
MECE-EM Deputy Sub-coordination	1	1	1	3
Reformulation of Curriculum and Evaluation and Development of Evaluation Capacity	1	0	0	1
Alternative Curricular Activities for At-Risk Students	1	0	0	1
In-Service Teacher Training	1	0	0	1
School-Based Quality Development Projects (PDEs)	1	0	0	1
Educational Resources	1	0	0	1
Infrastructure	1	0	0	1
Planning, Programming, Monitoring and Evaluation	1	1	1	3
Procurement, Civil Works and Technical Assistance	1	1	1	3
Finance, Accounting and Auditing	1	2	1	4
Legal Affairs	1	1	1	3
TOTAL	12	8	8 3/	28

1/ Support staff is expected to work on a pooled basis.
2/ Already employed as General Coordinator of the Bank-financed MECE project (Ln 3410-CH).
3/ Five are support staff and three are auxiliary staff.

CHILE DISBURSEMENTS
Table I:1 Quarterly Disbursement Profile a/
(US$Million)

Quarter Ending	Appraisal Estimate	Cumulative %
FY96		
March	1.6	4.6
June	3.1	8.9
FY97		
September	5.3	15.1
December	7.7	22.0
March	9.2	26.3
June	10.7	30.6
FY98		
September	14.2	40.6
December	18.7	53.4
March	19.8	56.6
June	20.8	59.4
FY99		
September	23.3	66.6
December	26.9	76.9
March	28.1	80.3
June	29.1	83.1
FY00		
September	30.1	86.0
December	31.9	91.1
March	32.7	93.4
June	33.3	95.1
FY01		
September	34.0	97.1
December	35.0	100.0

a/ Loan assumed to become effective October 1995.

CHILE - MONITORING AND SUPERVISION

A. Project Performance Indicators[22/]

The key project performance indicators, to be incorporated in the Operational Manual, are listed below. With regard to this table, it is important to note that in the education sector it is unrealistic to set hard and fast targets on quality, equity, and efficiency for the short and medium term. This is largely due to the slow and sometimes unpredictable response of the education system to change, and to the fact that changes in the educational sector are also dependent on variables outside the control of the proposed project. It is nevertheless advisable to monitor the change of the indicators mentioned below over time, expecting improvements when compared with the base information.

Table J:1 Key Project Performance Indicators

1. Indicators of Internal Efficiency			
Indicator	Base 1993	Mid-Term Review 1998	Target 2001
(a) Repetition at 9th grade	15.03%	12.27%	9.72%
(b) Drop-out at 10th grade	6.34%	5.56%	4.56%
(c) Average secondary school drop-out	32.07%	26.45%	21.55%
(d) Average number of years to complete secondary cycle	5.35 years	5.10 years	4.84 years

2. Indicators of Education Quality			
Indicator	Base[23/] 1993	Mid-Term Review 1998	Target 2001
(a) ANCR[24/] in mathematics for 10th grade	47.16%	49.34%	53.60%
(b) ANCR in language for 10th grade	57.13%	60.26%	64.94%

22/ Unless otherwise stated, data include municipal, private subsidized, private-paid, and corporation schools from both the Scientific-Humanistic and Technical-Vocational tracks. Also, the source of the information is the División de Planificación y Presupuesto, MINEDUC, and the base year is 1993 or the latest available year.

23/ Includes only Scientific-Humanistic schools. Source is SIMCE.

24/ Average Number of Correct Responses (ANCR).

3. Indicators of Equity
(by type of school ownership)

Area: Internal Efficiency

(a) Repetition for 9th grade	% Repetition	Base Ratio[25/] 1993	Mid-Term Review 1998	Target 2001
•Paid-Private Schools	5.29	1.00/1.00	1.00/1.00	1.00/1.00
•Municipal Schools	17.65	1.00/3.34	1.00/2.84	1.00/2.10
•Private-Subsidized Schools	11.79	1.00/2.23	1.00/1.90	1.00/1.70

(b) Drop-out for 10th grade	% Drop-Out	Base Ratio 1993	Mid-Term Review 1998	Target 2001
•Paid-Private Schools	2.41	1.00/1.00	1.00/1.00	1.00/1.00
•Municipal Schools	7.71	1.00/3.20	1.00/2.70	1.00/2.10
•Private-Subsidized Schools	5.55	1.00/2.30	1.00/2.10	1.00/1.90

(c) Average secondary School drop-out	% Drop-Out	Base Ratio 1993	Mid-Term Review 1998	Target 2001
•Paid-Private Schools	11.63	1.00/1.00	1.00/1.00	1.00/1.00
•Municipal Schools	40.87	1.00/3.51	1.00/2.75	1.00/2.15
•Private-Subsidized Schools	26.80	1.00/2.30	1.00/1.90	1.00/1.63

(d) Average number of years to complete secondary cycle	Years to Graduate	Base Ratio 1993	Mid-Term Review 1998	Target 2001
•Paid-Private Schools	4.41	1.00/1.00	1.00/1.00	1.00/1.00
•Municipal Schools	5.73	1.00/1.30	1.00/1.22	1.00/1.13
•Private-Subsidized Schools	5.00	1.00/1.13	1.00/1.10	1.00/1.07

25/ Corresponds to the ratio between paid-private schools and municipal schools or private-subsidized schools.

3. Indicators of Equity (continued)
(by type of school ownership)

Area: Education Quality

(a) Average Number of Correct Responses in mathematics for 10th grade (in percents)[26/]	ANCR 1993	Base Ratio 1993	Mid-Term Review 1998	Target 2001
•Paid-Private Schools	63.51	1.00/1.00	1.00/1.00	1.00/1.00
•Municipal Schools	39.92	1.00/0.63	1.00/0.70	1.00/0.79
•Private-Subsidized Schools	47.04	1.00/0.74	1.00/0.82	1.00/0.89

(b) Average Number of Correct Responses in language for 10th grade (in percents)[27/]	ANCR 1993	Base Ratio 1993	Mid-Term Review 1998	Target 2001
•Paid-Private Schools	69.56	1.00/1.00	1.00/1.00	1.00/1.00
•Municipal Schools	50.72	1.00/0.73	1.00/0.82	1.00/0.91
•Private-Subsidized Schools	58.27	1.00/0.84	1.00/0.90	1.00/0.95

(c) Average Number of Correct Responses in mathematics for 12th grade (in percents)[28/]	ANCR 1989	Base Ratio 1989	Mid-Term Review 1998	Target 2001
•Paid-Private Schools	58.50	1.00/1.00	1.00/1.00	1.00/1.00
•Municipal Schools	34.10	1.00/0.58	1.00/0.66	1.00/0.70
•Private-Subsidized Schools	37.70	1.00/0.64	1.00/0.70	1.00/0.75

(d) Average Number of Correct Responses in language for 12th grade (in percents)	ANCR 1989	Base Ratio 1989	Mid-Term Review 1998	Target 2001
•Paid-Private Schools	54.80	1.00/1.00	1.00/1.00	1.00/1.00
•Municipal Schools	39.00	1.00/0.71	1.00/0.80	1.00/0.86
•Private-Subsidized Schools	41.70	1.00/0.76	1.00/0.82	1.00/0.88

26/ See footnote 23.

27/ See footnote 23.

28/ Includes students from Scientific-Humanistic and Technical-Vocational schools. Source is the Prueba de Aptitud Academica, the college entrance exam for 1989.

The Borrower agreed during negotiations to include the following equity impact indicators in the Operational Manual (paras. 5.5, 5.17, 7.1(b), and 7.2(b)). These additional equity impact indicators classify secondary schools according to their location and social and educational risk factors associated with their student population, such as, repetition and dropout rates, and cognitive achievement scores.

4. Indicators of Equity
(by type of social and educational risks attached to the secondary education student population)

Area: Internal Efficiency

(a) Repetition for 9th grade	% Repetition	Base Ratio 1993[29/]	Mid-Term Review 1998	Target 2001
•High-risk schools				
•Medium-risk schools				
•Low-risk schools				
(b) Drop-out for 10th grade	% Drop-Out	Base Ratio 1993	Mid-Term Review 1998	Target 2001
•High-risk schools				
•Medium-risk schools				
•Low-risk schools				
(c) Average secondary School drop-out	% Drop-Out	Base Ratio 1993	Mid-Term Review 1998	Target 2001
•High-risk schools				
•Medium-risk schools				
•Low-risk schools				
(d) Average number of years to complete secondary cycle	Years to Graduate	Base Ratio 1993	Mid-Term Review 1998	Target 2001
•High-risk schools				
•Medium-risk schools				
•Low-risk schools				

29/ Corresponds to the ratio between low-risk schools and medium or high-risk schools.

4. Indicators of Equity (continued)
(by type of social and educational risks attached to the secondary education student population)

Area: Education Quality

(a) Average Number of Correct Responses in mathematics for 10th grade (in percents)[30/]	ANCR 1993	Base Ratio 1993	Mid-Term Review 1998	Target 2001
•High-risk schools				
•Medium-risk schools				
•Low-risk schools				
(b) Average Number of Correct Responses in language for 10th grade (in percents)[31/]	ANCR 1993	Base Ratio 1993	Mid-Term Review 1998	Target 2001
•High-risk schools				
•Medium-risk schools				
•Low-risk schools				
(c) Average Number of Correct Responses in mathematics for 12th grade (in percents)[32/]	ANCR 1989	Base Ratio 1989	Mid-Term Review 1998	Target 2001
•High-risk schools				
•Medium-risk schools				
•Low-risk schools				
(d) Average Number of Correct Responses in language for 12th grade (in percents)	ANCR 1989	Base Ratio 1989	Mid-Term Review 1998	Target 2001
•High-risk schools				
•Medium-risk schools				
•Low-risk schools				

30/ See footnote 23.

31/ See footnote 23.

32/ See footnote 28.

Table J:2 Supervision Arrangements

PROJECT COMPONENT	NUMBER OF SUPERVISIONS						MISSION COMPOSITION	TOTAL (SW)
	FY96	FY97	FY98	FY99	FY00	FY01		
1. MECE-ME's General Coordination	1	2	2	2	2	1	TM_1	10
2. Curriculum and Evaluation	1	2	2	2	2	1	CE	10
3. Alternative Curricular Activities							CE	
4. Linkages with the Private Sector							TM_1	
5. In-Service Teacher Training							CE	
6. PDEs							TM_1	
7. Educational Resources (Texts, Libraries, Teaching Materials, Computer Network, and Infraestructure)	1	2	2	2	2	1	TM_2	10
8. Institutional Strengthening	1	2	1	1	1	1	OD	7
9. Procurement		1	1	1	1	1	PS	5
10. Disbursement and Auditing							TM_1	
11. Slack to prepare supervision missions and prepare 590 reports (25 percent of total sws)	1	2	2	2	2	2		11
TOTAL	5	11	10	10	10	7		53

TM_1 = Task manager
TM_2 = Assistant to task manager
CE = Expert in curriculum, evaluation and in-service teacher training
OD = Expert in organizational development
PS = Procurement specialist

B. Scope and Content of the Mid-Term Review

1. **During negotiations, the Government: (i) confirmed the following scope and content of the Mid-Term Review agreed during the appraisal mission; and (ii) agreed that the Mid-Term Review performance and impact indicators explained below be included in the Operational Manual** (paras. 5.5, 7.1(b), and 7.2(b)).

2. The Mid-Term Review would be used as an occasion to assess: (i) the impact of the project on internal efficiency, quality, and equity, with a special focus on the Key Project Performance Indicators (Annex J, Table J-1); (ii) completion of the Yearly Project Physical Targets (Annex G, Table G-1); (iii) the project's coordination, especially in the area of disbursements, procurement, and annual audits; (iv) progress of the action plan to institutionalize the coordination of the day-to-day activities of MECE-EM within MINEDUC's existing structure; and (v) fulfillment of the loan covenants. In addition, the Mid-Term Review would also include the lessons learned during project implementation to be incorporated into a Government's action plan for structural reform (para. 2.49).

3. Specifically, the Mid-Term Review would analyze the extent to which the following will have occurred:

(a) **Reformulation of curriculum and development of evaluation capacity.** To have (by the time of the Mid-Term Review):

- established the Curriculum Planning and Evaluation Unit (CPEU);
- designed 40 curriculum material prototypes and reproduced 4,800 copies;
- carried-out consultation seminars with representatives from the education sector, government and the private sector on new curricular contents;
- launched an annual contest for Professional Associations;
- distributed about 40,000 internal evaluation sets and 120,000 evaluation guidelines; and
- distributed about 1,300 certification sets to the supervisors of T-VOC students.

(b) **Alternative curricular activities for socially and educationally at-risk secondary students.** To have:

- trained teacher representatives from about 1,000 schools on local teams and leadership;
- implemented youth workshops in about 1,000 secondary schools;
- distributed about 11,000 training sets in 4,000 training workshops;
- implemented 3 national dissemination events;
- distributed around 300,000 daily bulletins; and
- delivered 7,000 videos.

(c) **Linkages with the private productive sector.** To have:

- assigned about 700 fellowships for teachers to be trained in the private sector;
- disseminated about 3,300 copies of brochures on fiscal incentives for providing donations to schools; and
- financed 24 regional meetings.

(d) **In-service teacher training.** To have:

- carried-out 12 workshops for supervisors;
- delivered 3,200 instructional videos;
- distributed about 520,000 teaching modules, 6,400 training videos, and 40,000 manuals for teachers;
- delivered about 62,000 monitoring instruments;
- trained 2,560 school principals;
- trained about 4,800 school personnel in organizational management; and
- trained 4,400 heads of Professional Technical Units and 1,600 teachers in self-evaluation.

(e) **School-based quality educational development projects (PDEs).** To have:

- executed about 480 PDEs;
- initiated the process to select 620 new PDEs;
- designed and distributed over 4,000 training guides and 1,600 training videos;
- distributed about 3,000 information brochures and 1,100 posters; and
- implemented the first set of 40 dissemination fairs.

(f) **Provision of educational resources (textbooks, libraries, computer network, and infrastructure).** To have:

- distributed about 600,000 sets of textbooks;
- distributed about 2,300,000 books to local libraries in 1,600 schools;
- designed and distributed about 15,000 training guides and 1,600 training videos;
- selected schools to hold collective libraries and initiated the selection process to acquire books for these libraries;
- prepared the design of the training seminars to manage the collective libraries;
- delivered 930 sets of non-curricular teaching materials and about 4,900 training manuals;
- selected the contents of the Teaching Materials Catalogue and sent 1,800 copies to the schools;
- selected 1,600 sets of teaching materials to be delivered to the schools;
- incorporated about 900 secondary schools into the computer network;
- completed about 900 infrastructure projects to provide secondary schools with libraries, multi-media rooms, and teacher rooms; and
- provided 1,500 secondary schools with basic symbols.

(g) **Enhancing sectoral management capacity.** To have:

- prepared a data base for the TSN, and published and distributed to the schools the second edition of the corresponding TSN Directory; and
- initiated the preparation of the third edition of the updated TSN Directory.

(h) **general objectives of the project.** To have:

- established a decreasing trend in repetition and drop-out rates, especially in the 9th and 10th grades;
- established an increasing trend in the mathematics and language achievement scores of secondary students; and
- initiated reductions in the secondary education system's inequities, as manifested by the internal efficiency and education quality indicators;

(i) **management objectives of the project.** To have:

- the PCU performing at expected levels, satisfactory to the Bank;
- advanced significantly in the process of institutionalizing the coordination of the day-to-day activities of MECE-ME within MINEDUC's existing structure;
- implemented disbursement and procurement procedures attuned to Bank guidelines;
- delivered to the Bank the annual operating and auditing reports (short and long form reports) corresponding to CY95 through CY97;
- disbursed nearly 59 percent of the total loan (approximately US$20.8 million equivalent);
- assigned authorized counterpart funding of CY95 through CY97 to agreed categories of expenditures and project components and subcomponents;
- allocated into the Budget Law the counterpart funding for CY98; and
- complied with agreed legal covenants.

(j) **lessons learned of the project.** To have:

- reviewed and discussed lessons learned during project implementation to be incorporated into a Government's action plan for structural reform (para. 2.49).

CHILE - COMPARATIVE EDUCATION INDICATORS

Table K:1 Comparative Education Indicators

	Completion Rates Secondary Education	Student Teacher Ratio	Transition Rate to Tertiary Educ.	Average Performance in Reading 1/	Average Performance in Mathematics	Unemployment Rate Among Secondary School Graduates
	1991	1991	1991	1991/92	1991/92	1991/92
Latin America						
Chile	67.9	15.0	15.4*	44.3	28.5	8.2
OECD						
United States	73.9	15.9	69.2	68.5	55.3	7.3
France	75.8	13.6	49.0	70.8	64.2	6.6
United Kingdom	74.4	15.3	27.0	...	...	6.5
Spain	64.0	15.8	...	60.8	55.4	12.2
Italy	50.7	...	...	65.1	64.2	7.2

Sources: Education at a Glance, OECD Indicators, 1993: MINEDUC-MECE data.

Notes: 1/ Percent correct answers from a total of 100 percent. OECD numbers were calculated using an estimated maximum score of 750 points for mathematics on the original test means. The Chilean test scores were estimated on the weighted average scores of all types of secondary schools in the general area of Language (verbal reasoning and reading). Both, the OECD and Chilean test scores covered, on average, freshman of 14 years (corresponding to the first year of secondary school).
The Italian mathematics scores are from a sample in Emilia-Romagna.

* World Bank estimate.

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SELECTED DOCUMENTS AND DATA AVAILABLE IN THE PROJECT FILE

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A.2 Cariola, L., et al, "La Experiencia Internacional en el Diseño Curricular y en las Estructuras de los Niveles Medios de los Sistemas Educativos," Centro de Investigación y Desarrollo de la Educación, 1993.

A.3 Edwards, V., et al, "Practicas de Trabajo y Socialización en Establecimientos de Educación Media," Programa Interdisciplinario de Investigación en Educación, Universidad Católica de Temuco and Universidad de La Serena, 1993.

A.4 Errazuriz, M., et al, "Demandas Sociales a la Educación Media: Vol. I y II," CPU and Centro de Investigación y Desarrollo de la Educación, 1993.

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A.6 Himmel, E., "Determinación de la Calidad de la Educación Media Chilena," Texto y Anexos 1, 2 y 3. Universidad Católica de Chile, 1993.

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A.13 Truffello, I., et al, "Practicas de Trabajo y Socialización," Universidad de Chile, 1993.

B. Working Papers

B.1 Programa de Mejoramiento de la Calidad y Equidad de la Educación Media: 1995-2000: Vol I, Fundamentos, Estrategia y Componentes.

B.2 Programa de Mejoramiento de la Calidad y Equidad de la Educación Media: 1995-2000: Vol II, Líneas de Acción.

C. Other Related Documents

C.1 Artículo 38 de la Ley de Rentas Municipales de 1980.

C.2 Comisión Nacional para la Modernización de la Educación, "Informe Para Su Excelencia El Presidente de la República, Don Eduardo Frei Ruiz-Tagle," Diciembre 26 de 1994.

C.3 Cox, C., "Las Políticas de los Noventa para el Sistema Escolar," MINEDUC-MECE, 1993.

C.4 Decreto con Fuerza de Ley No. 1-3.063 de 1980, que Regula el 2o Párrafo del Artículo 38 del Decreto Ley 3.063 de 1979.

C.5 Decreto Supremo No. 662 (1992) del Ministerio del Interior concerniente a las Municipalidades.

C.6 Diario Oficial de la República de Chile, Ley Num. 19,247 "Introduce Modificaciones a la Ley Sobre Impuesto a la Renta; Modifica Tasa del Impuesto al Valor Agregado; Establece Beneficio a las Donaciones con Fines Educacionales y Modifica otros Textos Legales que Indica," Miércoles 15 de Septiembre de 1993.

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C.11 Ley Orgánica Constitucional de Enseñanza (LOCE) 19.054 de 1991.

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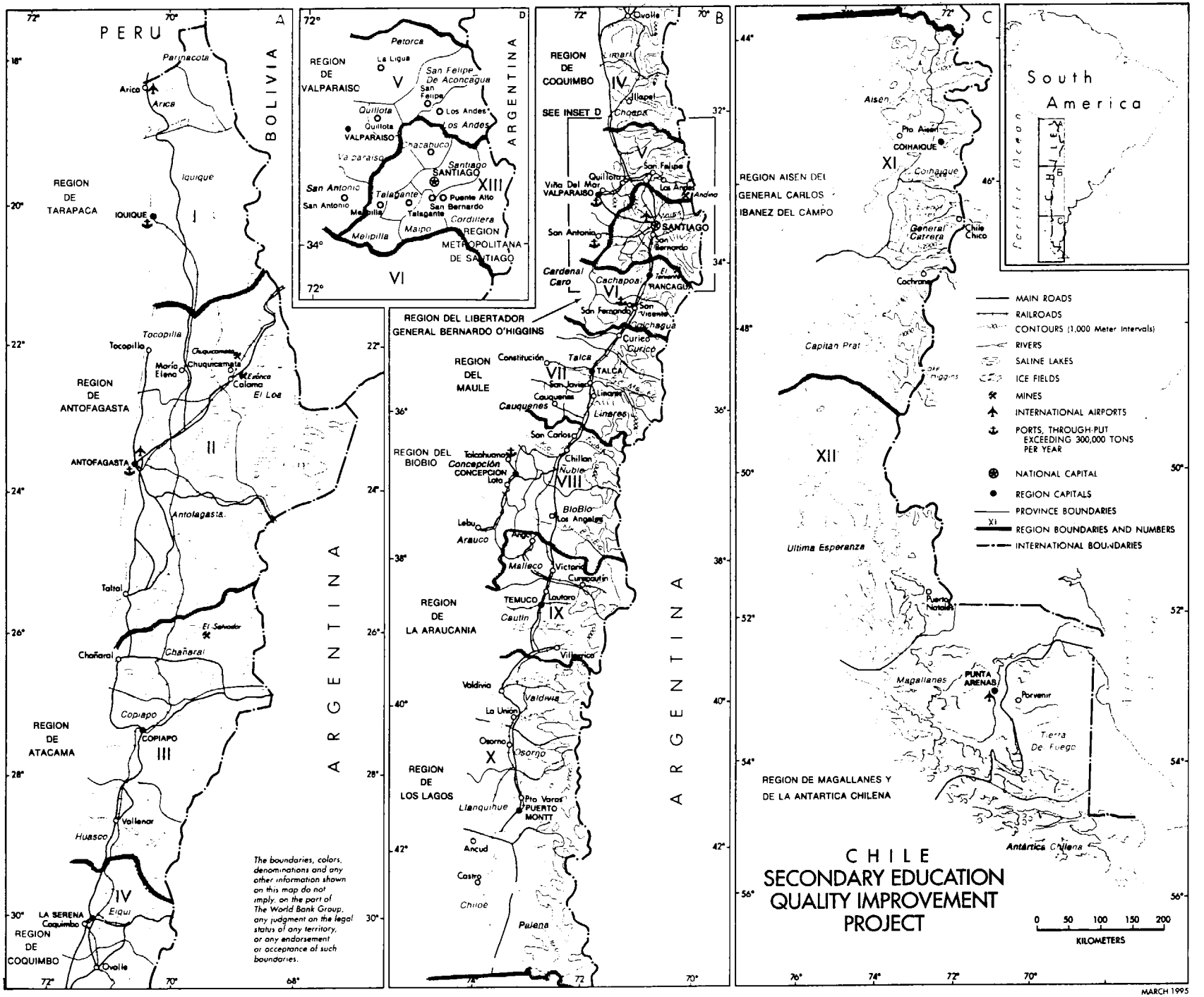

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