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ROMANIA

REFORM OF HIGHER EDUCATION AND RESEARCH PROJECT

AUGUST 26, 1996

Human Resources Operations Division
Country Department I
Europe and Central Asia Region

CURRENCY EQUIVALENTS

Currency Unit - Leu (Plural Lei)
US$1.00 = Lei 3100
(July 1996)

WEIGHTS AND MEASURES

Metric System

ROMANIA FISCAL YEAR

January 1 - December 31

ABBREVIATIONS AND ACRONYMS

CAS	Country Assistance Strategy
CEE	Central and European Countries
ESW	Economic Sector Work
EU	European Union
FESAL	Financial Enterprise Structural Adjustment Loan
FTE	Full-time Equivalent
GDP	Gross Domestic Product
GNP	Gross National Product
HEFC	Higher Education Financing Council
HEI	Higher Education Institution
IBRD	International Bank for Reconstruction and Development
ICR	Implementation Completion Report
IMF	International Monetary Fund
LIBOR	London InterBank Offered Rate
MIS	Management Information System
MOE	Ministry of Education
MOF	Ministry of Finance
NURC	National University Research Council
PIP	Project Implementation Plan
PCU	Project Coordination Unit
SECIL	Sector Investment Lending Loan
TA	Technical Assistance

DEFINITIONS

Romania is divided into 42 counties or districts called "judets" which form the geographical base for both the territorially deconcentrated central government administration and the local government system. The counties are in turn divided into 2,948 municipalities, including 260 urban communities and 2,688 rural communities.

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REFORM OF HIGHER EDUCATION AND RESEARCH PROJECT

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ROMANIA

REFORM OF HIGHER EDUCATION AND RESEARCH PROJECT

STAFF APPRAISAL REPORT

Loan and Project Summary

Borrower:	Romania
Beneficiary:	Ministry of Education (MOE) Universities and Colleges
Amount:	US$50.0 million
Terms:	Payable in twenty years, including five years of grace, at the standard interest rate for LIBOR-based US Dollar single currency loans.
Project Objectives:	The project would support the overall goals of the Government's program for reforming higher education to improve: (a) the responsiveness of the system to the demands for new professional and managerial skills required by a market economy; (b) resource allocation to generate incentives for more efficient performance; and, (c) access to higher education with increased equity for talented but needy students. Specific project objectives are to: (a) improve the capacity of the recently formed higher education councils and the individual institutions to fulfill their responsibilities in the reform strategy; (b) develop the new undergraduate and continuing education programs demanded by the transition to a market economy; and (c) develop the new postgraduate education and research training needed to supply the next generation of academic staff in high demand fields of study, and the professionals with advanced training in the new fields demanded by the transition to a market economy.
Project Description:	This is a sector investment project that would achieve its objectives through three components described below: Component I: Management Capacity Improvement. This component would provide support to sustain and improve the performance of the semi-autonomous councils that were formed in 1993/95 as part of the Government reform strategy to replace centralized control by the MOE with oversight of the system through intermediary councils, or "buffer organizations." These councils and their responsibilities are: (a) the

National Council on Accreditation and Academic Evaluation, which is responsible for accreditation of private and public institutions and programs; (b) the National Council on Academic Titles and Degrees, which is responsible for criteria and evaluation of professional certification in higher education; (c) the Higher Education Financing Council, which is responsible for performance-based funding of core recurrent and investment budgets of the individual institutions and for student financial aid channeled through the state budget; and, (d) the University Research Council, which is responsible for funding research grant programs on a competitive basis to private and public universities mostly for support of expansion and quality improvement of postgraduate education. In addition, the project would also support the strengthening of academic and financial management at the level of individual institutions of higher education so that they can better respond to the new competitive and decentralized approach to financing the system. The MOE would also receive technical assistance to carry out its new but reduced oversight responsibilities in the reformed system.

Component II: Undergraduate and Continuing Education. This component would support new program development for undergraduate and continuing education, especially in fields of high student and labor market demand. These programs would not be predetermined, but would be selected on a competitive basis according to agreed evaluation criteria related to the demand for programs, their quality and cost-effectiveness and the capacity of institutions to implement financially sustainable new initiatives. Accredited private or public universities would be eligible to submit proposals for funding to support new programs. Renewal of support would be contingent on favorable quality audits, achievement of program performance and cost-effectiveness goals, the demand for graduates, and evidence of institutional financial commitment to sustain the programs.

Component III: Postgraduate Education and Research. This component would support the development of the advanced courses of instruction and research needed to develop the next generation of academic staff and the professionals with advanced training in the new fields required in a market economy. These new programs of postgraduate courses would not be predetermined, but would be selected on a competitive basis similar to that in Component II. In addition, the project would support a research grants program for individual and team research involving masters and doctoral students. Competitions for research grants would be organized regularly and grants would be awarded on a competitive basis subject to rigorous domestic and international peer

review and coordinated with the development of advanced courses of instruction.

Benefits and Risks: The proposed project would promote diversification of the financing and provision of higher education, increase the efficiency and equity of public investments in higher education, and improve the quality of programs in response to changes in student and labor market demand. The reforms to be supported by the project are ambitious. They exceed in scope and complexity those attempted or contemplated by any other country in the region since 1989. Institutional and system-wide reforms must be undertaken concurrently while both the legal and fiscal basis of the higher education system must be changed before the project becomes effective. Many reforms are contentious and involve serious political risks. Administrative risks and the possible limited employment capacity for graduates are being addressed through broad participation in the development of reform, and attention to labor market linkages. Moreover, the Government's reform strategy, based on extensive technical studies, has been developed in consultation with stakeholders. There is ownership of the reforms by Government, Parliament and the academic community. Implementation of reforms would fundamentally change the role of the state vis-a-vis higher education institutions and, in addition, the management of the institutions themselves. Project preparation funding from the Japan Grant Facility and technical assistance from the European Union and bilateral donors are being used to assist the new councils to steer future development of the higher education system as well as to strengthen institutional management and implementation capacity.

ROMANIA
REFORM OF HIGHER EDUCATION AND RESEARCH PROJECT

Estimated Cost a/

	Local	Foreign	Total
	(US$million)		
1. Management Capacity Improvement	4.3	10.0	14.3
2. Undergraduate and Continuing Education Programs	11.7	15.9	27.6
3. Postgraduate Education Programs and Research Cente	16.6	25.5	42.1
Total PROJECT COSTS	32.6	51.4	84.0

Note: Project costs do not provide for contingencies as the project has been designed as a sector investment operation in which specific sub-projects have not been identified.

Financing Plan:

	Local	Foreign	Total
Government	24.0	0.4	24.4
European Union	0.0	9.6	9.6
The World Bank	8.6	41.4	50.0
TOTAL	32.6	51.4	84.0

Estimated Disbursements:

IBRD FY	1997	1998	1999	2000	2001	2002 c/
Annual	2.2	5.0	8.8	14.6	13.4	6.0
Cumulative	2.2	7.2	16.0	30.6	44.0	50.0
Cumulative as % of Total	4%	14%	32%	61%	88%	100%

Project ID: RO-PA-8793

a/ Figures may not add up to exact totals due to rounding.
b/ Project costs are net of taxes and duties.
c/ Actual disbursements have been estimated over nine semesters assuming project effectiveness second quarter of FY1997.

I. DEVELOPMENTS AND ISSUES IN HIGHER EDUCATION

A. Socio-Economic Background

1.1 The Romanian social, economic and political structures have undergone dramatic changes since the end of the Ceausescu era in December 1989. The repressive features of the Ceausescu regime, which affected many areas of Romanian society, including higher education, were lifted and Romanian citizens began to enjoy freedoms long denied to them. However, the economy, as in other countries in transition, experienced sharp drops in output, and consequently, in consumption and standards of living. Gross domestic product dropped by 33 percent from 1989 to 1993, and inflation increased sharply, reaching 200 percent in 1992 and 295 percent in 1993. Recent improvements in economic performance have been encouraging, with GDP in 1995 growing almost seven percent and inflation declining to 28 percent. The Government is also embarking on an ambitious privatization program with support from the Bank and the European Union, which Romania hopes to join as soon as it is feasible. Romania has also enjoyed political stability compared with some transition countries and will soon conduct its second parliamentary and presidential elections since the adoption of a democratic constitution in 1991.

B. Legacy of the Ceausescu Era

1.2 Romania achieved a high level of basic education coverage during the socialist period. Eight years of basic education became nearly universal, while about 80 percent of primary school graduates obtained access to some form of academic or vocational secondary education. Most students were directed into programs of overspecialized vocational education. Many of these programs did not offer the prospect of progressing to higher education. Even for those secondary programs which did meet the entrance requirements for higher education, few graduates succeeded in gaining entry to university. Higher education expanded to cover 11 percent of the age group in 1970. However, enrollments stagnated during the last decades of the Ceausescu period, growing at just 0.4 percent per year between 1970 and 1989. At the beginning of the transition, higher education enrollments in Romania had shrunk to nine percent of the age group.

1.3 During the 15 years preceding the fall of the Ceausescu regime in December 1989, the higher education system suffered from increasing political interference and loss of academic freedom. Romanian higher education was also deprived of the contacts with the West which it had enjoyed in the early 1970s, leading to progressive intellectual isolation and obsolescence.

1.4 Under the former system, higher education was centrally financed and centrally directed. Student demand did not play a role in the evolution of higher education. Higher education was geared exclusively to the needs of the centrally-planned economy. Specializations which made a direct contribution to physical output goals -- notably, engineering -- were emphasized; programs in humanities and social sciences were neglected or eliminated entirely. By the end of the Ceausescu period, engineering dominated higher

education enrollments with 65 percent of the enrollments compared with just 10 percent for science, social science and humanities. One of the main legacies of the Ceausescu era was excessive training capacity in specializations for which a market economy has little need, and undercapacity of training in fields that are critically needed for the future growth of the market-oriented economy.

1.5 The financing of higher education programs was not subject to performance considerations other than meeting enrollment targets. Prior to 1990 there was little diversity in the length and structure of undergraduate programs. Programs in science, arts, social science and humanities were usually four years in duration, while those in some professional fields such as engineering and medicine were five years. Evening courses required an additional year. Study programs were highly specialized with no provision for elective studies. Transfer from one program, or from one faculty, to another was not possible without starting all over again. The excessive number of hours of compulsory classroom instruction (32 to 38 hours per week) effectively left no time for self-study.

1.6 University research was dismantled and doctoral training was transferred to government research institutes closely tied to branch industries. Higher education institutions carried out contract research for ministries and public enterprises under a system of mandated allocation which provided little incentive for professional excellence or relevance and amounted to disguised public subsidies.

1.7 Especially during the latter part of this period, investment and maintenance of facilities and instructional equipment underwent serious decline.

C. Achievements Since 1989

1.8 In the 1990s Romanian higher education has undergone a radical transformation, recording some of the most significant changes in the whole of Europe in terms of enrollment growth, establishment of private education, changes in the specialization of enrollments and cost recovery. The most salient developments since 1989 are explained below. (See Annex 1 for more background on the Higher Education System.)

1.9 Management. The reversal of the negative effects from the earlier period began in 1990 when public universities received autonomy in many matters of academic governance, elected new rectors and established the National Conference of Rectors. This autonomy has been gradually expanded to encompass the authority to charge fees, retain and manage the revenues earned from fees and other sources, and manage their own assets. The role of the Ministry of Education has undergone a radical change, away from one of direct control towards a concern with policy development and indirect guidance. Consistent with its change of role, the size of the Ministry has declined sharply from 800 staff to about 200 staff. Another significant development has been the emergence of organizations as an intermediary

between the central ministry and higher education institutions. The Accreditation Council[1], established in 1993 by an act of Parliament to which it reports, has its own budget largely generated through the fees that it charges. Other key bodies established in 1995 were the Higher Education Financing Council, the Credentials Council[2]; and the National University Research Council. These latter councils are semi-autonomous in that they advise and make recommendations to the Minister of Education, but if the Minister does not accept their recommendations, e.g., for funding, then a justification must be provided in writing by the Minister and the matter returned to the Councils for reconsideration.

1.10 Structure. More flexible program structures are now being developed in many public universities. Traditional degree courses, especially in engineering, are being divided into two cycles: a short cycle diploma program of three years, with two additional years of study leading to a degree. In addition, the older public universities are introducing masters programs of two years' duration. Doctoral programs are also being re-established and are now offered in about 40 public universities, entry to which will soon require the new masters degree.

1.11 Enrollments. The transition unleashed the long pent-up demand for higher education. The proportion of secondary school graduates admitted to higher education increased from 10 percent in 1989 to over 50 percent in 1994. Over the same period the enrollment ratio for the 18 to 24 age group increased from nine percent to more than 15 percent. As shown in Table 1, below, enrollments in higher education increased by 40 percent between 1989 and 1990 alone, and increased a further 74 percent between 1990/91 and 1994/95.

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[1] Council on Accreditation and Academic Evaluation

[2] The Council for Academic Titles and Degrees

Table 1.1: Growth of Higher Education Enrollment 1989/90-1994/95

	89/90	90/91	91/92	92/93	93/94	94/95
Public Institutions	44	48	56	56	NA	58
Public Faculties	101	186	220	237	NA	NA
Enrollments	164,507	230,088	288,586	326,281	362,537	401,153
Public	164,507	202,810	225,226	236,561	251,657	255,273
Private	0	27,278	63,360	89,720	110,880	145,880

1.12 Private Education. Nowhere in Eastern or Central Europe has private higher education developed more rapidly than in Romania, which had no history of private university education prior to 1989. The first private universities started operations in 1990 and quickly developed into a dynamic private higher education sector. A law passed in 1990 allowing non-government entities to provide educational services was the foundation for the creation of a private sector in higher education. High student demand and the limited absorptive capacity of public institutions led to the establishment of as many as 73 private institutions, almost all of which claimed university status and proposed to grant degrees. These institutions, which rely largely upon part-time teaching staff from the public universities, enroll about a third of total university enrollments -- comparable to the share of private higher education enrollments in the U.S. While the private institutions mainly recruit students who fail to gain entry to a public university, admission is reported to be competitive. For example, the Ecology University in 1993/4 accepted about one in six applicants, a decrease from a ratio of one to ten in 1990/91, but still sufficient to ensure continued growth. Further expansion of the private sector is likely to be constrained, principally by the shortage of teaching staff, particularly in market-oriented specializations.

1.13 Enrollment by Field of Study. One of the most remarkable transformations in Romanian higher education in the 1990s has been the shift of students by field of study. Led by shifts in student demands, enrollment in engineering programs has declined sharply, both as a share of total public enrollment and in absolute numbers. About 65 percent of university students were registered in engineering programs in 1989, but this proportion decreased to 31 percent in 1994 (See Table 2). Enrollment in economics more than doubled its share to 20 percent, and the share of enrollments in sciences, social sciences and humanities more than tripled to 31 percent. In the 1994 entrance examinations, there were 20 candidates per place in some law faculties, while in many engineering fields, admission standards had to be lowered to fill the available places.

Table 1.2: Distribution of Public Higher Education Enrollment by Field of Study, 1989-1994 (percent)

Field	*89/90*	*90/91*	*91/92*	*92/93*	*93/94*
Engineering	65	59	54	38	31
Agriculture	4	4	4	4	4
Economics	9	10	12	20	20
Law	1	3	4	3	2
Medicine	10	10	10	7	10
Sciences, Social Sciences, Humanities	10	14	16	25	31
Fine Arts	1	1	2	3	2
Total (Total Enrollments in thousands)	100 (165)	100 (203)	100 (225)	100 (237)	100 (252)

1.14 New Teaching Programs. Teaching programs in market-oriented subjects are in heavy demand by students. These include management, business administration, small business development, accountancy, auditing, finance, and banking. Because of labor market uncertainty, students increasingly seek to broaden their academic training, including by acquiring multiple specializations in order to enhance their possibilities for employment in an evolving market economy. At the Polytechnic University of Bucharest, broader areas of specialization, such as electrical and mechanical engineering, instead of electro-technical industrial engineering or fine mechanical engineering, are now emphasized. Progress has also been made in reforming the organization and methods of instruction. Credit-hour based programs of study are being introduced, particularly by private institutions, thereby enhancing flexibility. In 1994 the number of hours of compulsory instruction per week was reduced from an average of 35 hours to an average of 26 hours. This is a prerequisite for increased efficiency in the use of staff and facilities.

1.15 Quality Assurance. An important step in the direction of quality standards was taken in 1993 with the passage of a law on accreditation and academic evaluation. The objective of this law is to promote diversification of programs, foster greater complementarity in the roles of public and private institutions, and better inform consumers about institutional choices and program quality. The law sets out general criteria and minimum standards which institutions must satisfy to be accredited as a university. These relate to their forms of governance, organization of programs, teaching staff and instructional resources as well as to the proportion of their budgets used for quality improvements. Institutions that cannot meet

the requirements may obtain provisional authorization to function for a probationary period, or seek recognition as another kind of higher education institution with approval to grant only certificates. The law also sets out criteria for accreditation of individual programs. Initially, all institutions, public and private, and all programs established after 1989 were subject to evaluation, including new programs offered by the older universities.

1.16 The newly-established Accreditation Council has evaluated nearly 2,000 academic programs, 1,500 of them offered by private institutions. Programs submitted by private institutions have been reviewed and authorization has been granted to offer the programs at the degree level in about 25 percent of the applications reviewed. A high proportion of applications for degree programs currently offered by private institutions in technical and professional fields like engineering and medicine were rejected. The success rate is much higher in economics, law and similar fields with more modest requirements for instructional resources. To date, about 50 percent of programs submitted by public institutions have been approved, again mostly for instruction in applied social sciences. National examinations are being prepared to assess the equivalence of programs and to certify the credentials of graduates in professional fields.

1.17 Cost Recovery. Cost recovery from students contributes significantly to the financing of public higher education. Student fees currently finance 23 percent of the costs of public higher education -- a high percentage by international standards and much higher than Eastern and Western European countries. The imposition of student fees in Romania is limited by the provision in the 1990 Constitution that states the Government is to provide "free public higher education ... according to the law." The Government has constructively interpreted the provision to allow charging fees for regular courses taken by non-Romanian students[3], and for subsidiary activities for Romanian students, including: admissions examinations, re-examinations, repeated courses, elective studies and part-time studies, postgraduate studies, registration and matriculation, and board and accommodation. In addition, between 1993 and 1995 the Ministry of Education allowed the public universities to collect fees from students admitted beyond the enrollment quotas negotiated by the Finance Ministry and the Education Ministry.[4] Tuition for these "extra-quota" students ranged from $70 to $360 per term.

1.18 There are clear indications of capacity and willingness to pay for higher education. This is apparent not only in the fees paid by extra-quota Romanian students in public universities, but -- more fundamentally -- by the vigorous growth of fully self-financing private higher education during the past five years. Fees in private higher education

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[3] Foreign students, who comprise just five percent of full-time public university enrollments, account for 70 percent of all student fee income.

[4] The setting of admission quotas was suspended as of the 1994/95 academic year.

institutions range from about $200 to $500 per year. Fees at the more expensive private institutions are thus comparable to average unit costs in public higher education (US$ 442 per year in 1994), and roughly 40 percent of GDP per capita. Moreover, many of the students admitted free to public universities take private tutoring courses to pass the entrance examinations to the elite public universities. These courses often cost as much as a full year of tuition in a private university.

1.19 Postgraduate Programs and Academic Research. In order to support restructuring of undergraduate programs and train the next generation of academics, the Government has reformed the structure of postgraduate studies and given priority to strengthening academic research. New course-based Masters programs are being introduced, enabling the shortening of the first degree cycle. Doctoral studies also combine supervised research with advanced training -- no longer is the doctoral degree a result of part time studies leading to the production of a thesis. Doctoral and Masters programs will be offered at about 40 institutions which have been determined by the Accreditation Council to possess adequate facilities. However, program proposals will be assessed on the basis of the merits of the application and national need for the proposed program. This is necessary to ensure that scarce public resources are concentrated on the development of future centers of excellence, most of which will have linkages to leading institutions in Western Europe. Similarly, support for Masters and doctoral students research will be closely articulated with competitive funding for staff research in order to strengthen high performing research units, and increase production of graduates. The National University Research Council was established in 1995 for this purpose. It has already organized two grant competitions.

D. Major Unresolved Issues

1.20 Despite the many accomplishments recorded thus far in the 1990s in Romanian higher education, acute problems persist, most notably, underfinancing, quality problems owing to teacher shortages, and inefficient financial transfer mechanisms.

1.21 Underfinancing: Inadequate Financial Resources for Higher Education. Romania currently spends a smaller share of GDP on higher education than other countries in the ECA region. Higher education expenditures account for 0.5 percent of GDP in Romania, versus 1.0 percent in Hungary and 1.1 percent in Turkey. Romania, like most countries in Central and Eastern Europe, compares its educational spending effort to European countries, since Romania seeks to join the European Union shortly after the turn of the century and also because Romanian universities trace a long history back to the medieval universities of Europe. By this comparison, spending on Romanian higher education relative to GDP falls short again, with the OECD countries, most of which are European, spending 1.9 percent of GDP on higher education. However, since OECD countries have much higher per capita income than those in Eastern Europe, comparisons with middle income countries may be

more appropriate. For example, many high performing Asian economies spent more, such as Malaysia, which spent 2.0 percent, and Singapore, which spent 1.8 percent.[5]

1.22 A more relevant indicator, because it takes into account the enrollment and also partially cancels out the effect of foreign exchange rates, is public expenditure on higher education per student relative to per capita GDP. The public budget now provides just US$309 per student per year[6] in higher education, or 25.2 percent of per-capita GDP. This proportion is well below the level of expenditures in most other transition countries -- for example, 52.8 percent in Slovakia, 43.2 percent in Poland, 102.8 percent in Albania, and 108.9 percent in Hungary -- and just half of the OECD average level of public support for higher education (50.5 percent of GDP per capita), including the United States (53.6 percent). Compared to East Asian economies, where the corresponding figures are 62 percent for Japan, 104 percent for Korea and 92 percent for China, Romania again ranks low.

1.23 The low level of expenditures for higher education in Romania in part reflects the serious drop in public expenditures since the start of the transition. While enrollments in public institutions of higher education have increased at an average rate of nine percent per year since the start of the transition, overall funding for both teaching and research functions has declined sharply. Consequently, financial resources for public institutions of higher education are no longer minimally adequate, and the quality of public higher education has suffered in all areas. The total financial resources of public universities, measured in 1995 Lei, were 39 percent less in 1994/95 than in 1989/90. Expressed in per-student terms, the decline was even more serious. Total real financial resources per student[7] declined by over 60 percent since the start of the transition -- from 1,880,000 Lei (or US$1,113) in 1989/90 to 746,000 Lei (or US$442) in 1994/95.

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[5] See Annex 1 for more discussion of these comparisons. Comparisons such as these, while interesting and suggestive, need to be treated with caution. They must be looked at more carefully over time and in light of the economic and historical circumstances of the countries.

[6] I.e., 70 percent of average per-student resources of US$442.

[7] Current Lei expenditures, deflated by the GDP deflator.

Table 1.3: Financial Resources for Public Higher Education by Source, 1988/89 - 1994/95

Year	Total Resources (billions of current Lei)	Total Resources (billions of 1995 Lei)[8]	Resources Per Student (thousands of 1995 Lei)	Percentage Financed from State Budget	Percentage Self Financed
1988/89	2.2	232.6	1,459	66	34[9]
1989/90	3.3	309.3	1,880	86	14
1990/91	10.4	335.1	1,652	95	5
1991/92	29.4	303.1	1,345	96	4
1992/93	87.1	288.1	1,218	90	10
1993/94	151.7	204.8	814	83	17
1994/95	190.4	190.4	746	70	30

1.24 The effect of the underfunding of higher education is that most facilities are overcrowded, poorly maintained, and lack the materials and equipment required for effective learning. Libraries, which play a vital role in the modernization of pedagogy and the development of more flexible programs, have suffered particularly from budgetary neglect. The shortage of funding for university libraries to cover stock acquisition, automation, refurbishment and training is acute.

1.25 Whether expressed in terms of total or per-student expenditures, or as a share of GDP, Romania is allocating far less to higher education than the OECD countries, and many other transition countries. Eventually, Romania should consider raising the share of total resources -- including budgetary resources -- which it devotes to higher education. However, the current tight limits on public expenditures which are needed to ensure macro stability and the release of resources for private-sector growth, as well as the priority which must be accorded to basic education, make increases in support for higher education a medium-term prospect.

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[8] Current lei converted to 1995 lei through use of GDP deflator.

[9] This percentage is mainly accounted for by contract research with state enterprises, and not by student contribtions, as in subsequent years.

1.26 Teacher Shortages. The shortage of staff, especially in fields of high student demand, is a serious constraint both in improving responsiveness to the labor market and in curriculum modernization. As in most Central and Eastern European countries, the overall student/teacher ratio in Romania is seemingly relatively low in comparison to Western Europe or North America. This reflects a labor-intensive pedagogy and the excessive specialization of academic programs. The ratio of students to **authorized** teaching staff in Romanian public universities (13:1) has been constant since 1989. However, the **actual** average ratio of students to teaching staff has since grown to 22:1 because of a rise in unfilled teaching vacancies in fields with expanding enrollments. This compares to higher education average student/teacher ratios of 6.6 in Hungary, 7.1 in Slovakia, 9.8 in Bulgaria, and 10.7 in Russia.

1.27 These overall student/teacher ratios in public higher education conceal the major variation across specializations which has emerged since the start of the transition. The composition of enrollments in higher education has been thoroughly reconfigured by student response to changed economic opportunities. Staffing rigidities in the public universities have led to overstaffing in stagnant fields such as engineering, and serious understaffing in growth fields such as business and accounting. For example, the share of enrollments in economics and business courses in public universities increased from 9 percent to 20 percent of (rapidly expanding) total enrollments. The public universities have not been able to attract qualified staff in these growth areas, both because there is an acute shortage of people with the requisite training and qualifications and because they are not able to offer salaries and other incentives which are competitive with the private sector. As a result of these staffing rigidities, the student/teacher ratio in economics and business courses has grown to more than 50:1. Another consequence is that few of the existing teaching staff in these areas have the benefit of recent training or experience abroad. The staffing situation is the reverse in the specializations of declining popularity. In engineering, for example, the actual student/staff ratio declined from 19.1:1 in 1989 to 11.5:1 in 1993. The drop would have been sharper still if engineering faculties had not lowered admissions standards in an unsuccessful attempt to maintain intake levels. Reducing staff to improve efficiency in specializations with declining enrollments will require a fundamental change in the employment status of staff in public higher education institutions. Currently, these staff are civil servants, and benefit from the job stability which is customary for the civil service. Tenured faculty have further protection against job loss.

1.28 Most vacant teaching posts in the public universities are in the junior faculty grades. At the Bucharest Academy of Economic Studies, for example, only 30 percent of assistant lecturer posts were filled in 1993, and less than half at the lecturer level. Staff workloads (10 to 12 hours of instruction per week at junior faculty grades and 6 to 8 hours per week for professors) are comparable to, or higher than, Western European or North American norms. Thus, there is little room for solving the faculty shortage in growing specializations by increasing teaching requirements for existing faculty. To retain existing staff, the public

universities are using savings from vacant posts to supplement salaries for highly demanded specializations and are allowing their staff to teach at private institutions.

1.29 The inability of public universities to attract qualified junior faculty in fields of growing demand has several negative consequences. In particular, it deprives students and other faculty of the infusion of new ideas which freshly trained -- especially, foreign-trained faculty -- would bring. Reducing further the number of hours of compulsory classroom instruction for students would improve efficiency in the utilization of scarce staff resources, and would enable public universities to reduce the most excessive class sizes or to accommodate more students in fields of high demand without increasing staffing or class sizes. It would also increase pressure for programmed staff redundancies in academic units with low student enrollments. However, reductions in weekly class requirements would not alleviate the overall staff shortage in high demand fields or the increasing reliance on inappropriately trained senior staff.

1.30 The shortage of teaching staff is exacerbated by the present relatively low capacity of postgraduate training facilities needed to produce the next generation of academic staff. The present annual output of individuals with doctoral degrees or equivalent qualifications is below 2,000 per year, about one-quarter of whom are newly returned from training abroad. That total is less than a third of the number of new academic positions created in 1994 (6,000). Acceleration of academic restructuring will require large-scale staff retraining, expanding opportunities for foreign study, and development of postgraduate programs -- coupled with measures to increase the attractiveness of academic employment. Retraining of existing staff, particularly in economics and other expanding fields in the social sciences, will require a major effort. Postgraduate, as well as undergraduate training in many social-science disciplines such as sociology and psychology was suspended, or the size of programs considerably reduced, in the 1980s, when the country entered a period of economic and intellectual isolation. Most staff who are now teaching these specialties received their training more than two decades ago, and had no opportunity to keep abreast of developments in their disciplines until 1990. Many staff who are teaching specialties of importance to a market economy, such as business administration and marketing, have no formal training in these fields. Most were trained in the tradition of central economic planning. Similarly, in many rapidly growing interdisciplinary fields such as materials science, information technology, biotechnology and ecology, most staff are being retrained "on the job," and are not being given opportunities to update and broaden their professional expertise. Moreover, new ways of organizing and servicing academic programs require retraining of academic staff in methods of teaching and student assessment.

1.31 Inefficient Budgetary Mechanisms The current process for allocating public resources to higher education contributes to widespread inefficiency of resource use, as reflected in widely varying unit costs across higher education institutions for the same programs. Even though overall financing is relatively low, some institutions or fields have

excessively high unit costs that need to be reduced. Continued financing of programs with high unit costs at historical levels of support would perpetuate both the high unit costs and the inefficient teaching practices which cause them.

1.32 Core budget support from the recurrent budget was traditionally allocated to public higher education institutions according to coefficients which determined allocations for detailed expenditure items, many of which were based on the physical size of the institution or the number of staff. Once these budget allocations were determined, institutions had very little discretion to reallocate funds to other uses. In determining an institution's core budget allocation, the Ministry of Finance and the Ministry of Education took into account estimates of cost recovery from student fees and other sources. Projected resources from cost recovery were subtracted from an institution's core budget entitlement under the scheme. A common response by institutions was to attempt to keep internally generated income from fees, charges, contract research and other sources off-budget, i.e., in a separate account. In addition to the problem of providing inadequate incentives for efficient performance, the budget process for higher education suffered from other deficiencies. The process for allocating capital budgets for new construction and major equipment for public institutions of higher education relied largely upon personal persuasion and subjective judgements.

1.33 These methods of allocating public resources for higher education have serious weaknesses: a) they reward physical size and other institutional characteristics more than current enrollments; thereby directing too many resources to institutions and programs with declining enrollments, and depriving growing institutions and programs of the resources which they need; b) budget coefficients are institution-and-expenditure-specific, thereby perpetuating inefficiencies in instruction and depriving institutions of the discretion which they need to improve the quality and efficiency of their programs; c) the existing methods provide no incentives to raise educational quality; and d) they discourage institutions from raising their own revenues through cost recovery.

II. REFORMS IN HIGHER EDUCATION

A. Higher Education Sector Reform Program

2.1 The reform program adopted by the Government in late 1994 and reflected in the Education Law mid-1995 is the culmination of a steady and deliberative process begun in early 1993. In 1993 the Romanian Government established a high level Consultative Group on the Reform of Higher Education and Research to carry out the necessary technical studies and prepare a strategy of reform, which was adopted by the Government in November 1994 and incorporated into the Education Law of July 1995. The initiatives to be undertaken in the reform program can be organized under five main objectives: (a) improving the external productivity of higher education; (b) assuring the quality of academic programs; (c) improving the internal efficiency of higher education; (d) assuring equity of access as cost recovery increases in higher education; and (e) rationalizing the management of higher education at both system and institutional levels. Each of these objectives is described below (see Annex 2 for the Letter of Sector Development Policy and Annex 3 for the Policy Matrix for more details on policy objectives and actions).

2.2 External productivity. The reform program envisions a system of higher education that is more responsive to the needs of the emerging market economy. This objective is being pursued by changing the content of programs, readjusting the relative size of programs, and building in more flexibility. New fields, such as business and modern macro- and micro-economics, that were lacking during the socialist era, are being introduced, while other fields, such as central planning, have been eliminated. Overspecialization in some technical and engineering fields has been eliminated and interdisciplinary programs are being introduced. The relative size of enrollments is also being readjusted with less enrollment in engineering fields and more in business fields. Flexibility will be increased by implementing the recent introduction of short programs (two-year certificates and three-year diplomas), and ensuring provisions for retraining and continuing education. More transfers between programs and institutions and double majors with electives are now allowed by the introduction of the credit system.

2.3 A number of important measures will be introduced in the next year to support the actions already underway. Competitive grants will be offered to provide incentives for further development of new programs, consolidation of traditional specializations, and other teaching innovations. The introduction of norm-based or formula funding based upon enrollments and average unit costs will ensure that resources follow changing student demand for different courses. Since the funding formula is to be based upon full-time equivalent students, as defined by the number of course credits, the incentive will be strong for institutions to adopt a credit system that would add more flexibility to their curricula. Flexibility will also be enhanced by the provisions of the new Teacher Law (under

consideration by Parliament) that allows for institutions to engage instructors on a contract basis with more flexibility in pay scales, depending upon demand for courses.

2.4 Quality assurance. The reform program also seeks to revitalize academic programs in order to assure higher quality standards, especially in the newly developing universities (both private and public). The Accreditation Law (1993), which established the Accreditation Council, was a major milestone towards this objective. Quality of programs will also be improved by addressing the shortage of faculty in the faster growing fields. Postgraduate programs have been established to train the next generation of academic staff for an expanding private higher education sector and the restructuring of the overall system. Since research is an integral part of the training of academic staff, the National University Research Council was established through the Education Law to fund development of new postgraduate programs and related research on a competitive basis using rigorous peer review, as is common in Western Europe and North America.

2.5 A set of actions remains to be taken that will strengthen the quality assurance mechanisms already introduced. Accountability for maintaining standards will be achieved through periodic review of programs as provided for in the Accreditation Law. Standards and procedures for periodic quality evaluations will be developed and applied by the academic year 1997/98. Incentives for quality improvements at both the undergraduate and postgraduate levels will be introduced in 1997/8 through competitive grants for program innovation and research. Public expenditures will be allocated to make up for past neglect by increasing resources to development, innovations and capital investment to at least 20 percent of total public spending on higher education by 1998/99. Postgraduate studies will be concentrated in selected institutions so that resources can be focused on developing high quality programs.

2.6 Internal Efficiency. An objective of the reform program is to limit public expenditures on higher education by making more efficient use of public sector resources and mobilizing private resources to help finance needed improvements in the system. Public budgetary efficiency would be enhanced by the introduction of open, transparent procedures for funding higher education institutions. The basic features of the new allocation process are:

(a) Recurrent expenditures. Core budget funding is to be awarded to public institutions of higher education according to performance and efficiency norms which encourage institutions to adjust enrollment by field according to student demand. The level and distribution of enrollments and average unit costs countrywide in each field are to be the predominant elements in determining core budgets. Total core budget financing is to be deliberately set low enough so that no institution can survive on core budget financing alone. All public higher education institutions will thus need to mobilize additional resources

through cost recovery, and to compete vigorously for both development and capital budgets, as next explained.

(b) Development funding. The portion of the recurrent budget formerly allocated centrally to public higher education institutions for facilities rehabilitation and equipment is to be expanded and transformed to a system of competitive grants which will support new initiatives to improve program quality and to develop new teaching capacity in areas of growing demand. To encourage quality improvements and program diversification throughout the higher education system, these grants will be provided to accredited institutions of higher education in both the public and private sectors.

(c) Capital financing. The process for allocating capital budgets for new construction and major equipment for public institutions of higher education, formerly *ad hoc* and opaque, is to be transformed to a transparent process in which institutions' proposed long-term development plans are reviewed against explicit development criteria.

2.7 Actions intended for the near term to strengthen private resources mobilization include: (a) improving the sustainability and quality of private higher education by removing constraints on supply of academic staff; (b) within the public higher education sector, pursuing the aim of having non-public sources contribute at least 30 percent of the recurrent budget of public institutions by 1998/99. This will be accomplished by the incentives that institutions now have to charge fees and raise other revenues beyond their public budgetary allocation without being penalized by having their allocations reduced if they are successful at providing services and retaining revenues.

2.8 While relying upon more cost recovery and private family resources, the Government reform aims to ensure that academically able, but poor, students have access to higher education. This would be done by changing the basis of allocating student support to take both academic merit and financial need into account. Based upon provisions of the Education Law, the Government approved in 1996 a decree for a new student support scheme for public institutions to be implemented in academic year 1996/97. This new scheme would provide three categories of financial aid: (a) scholarships based solely upon academic merit would comprise about three percent of the student support budget; (b) most of the funding for student support will be provided by scholarships for poor but academically meritorious students (social scholarships in the Romanian terminology); and, (c) the remainder of the student support budget would be allocated mainly according to merit, but with financial need also being taken into consideration (study scholarships). Scholarships to needy students for living expenses -- typically, the largest component of scholarships -- are to be paid in cash directly to the students, rather than to institutions, in order to encourage greater efficiency in the provision of student services. Incentives will be provided to

accredited private institutions to provide scholarships to needy but talented students by making such need based scholarships a condition of their eligibility to compete for public funds under the project. In the medium term, as the commercial banking system develops, a loan scheme would be introduced as another option available to students to finance their higher education.

2.9 System and Institution Management. Finally, better system and institutional management would be sought as a key means to decentralize and rationalize the system. This would be done by continuing to devolve professional and policy functions to intermediary councils, and to build the autonomy of individual institutions. Actions to be taken within the next year include the reorganization of the Ministry of Education to reflect its new functions resulting from the reform program. The intermediary councils will also be adequately staffed and provided with operational resources to carry out their responsibilities.

2.10 At the institutional level, 28 institutions have prepared development plans as part of a pilot exercise in 1995/96. The Education Law provides for the establishment of internal governance structures and efforts have already begun in 1995 in many institutions to establish separate administrative and academic functions. In the next year, all institutions will have to prepare institutional development plans as part of their participation in the competitive grants programs. The managers of institutions will have to select their priorities through internal review of competitive grant proposals to be submitted by the institutions. Further measures to be introduced in the next year are the building of professional management through separate salary streams for administrators and the creation of management information systems to support institutional and system decision making.

B. Financial Implications of the Reforms

2.11 In the context of the overall reform program, Table 2.1 summarizes the profile of total public expenditure on education, and on higher education from 1995 to 2000. The 1995 expenditure numbers are based on actual budget allocations; the levels for 1996-2000 are projected. Information is given in constant 1995 prices. The information in this table relates to the situation which is expected to prevail *without* any injection of extra funds from outside sources, such as the World Bank, or from extra revenues generated by individual institutions (other than "Special Fund"[10] tuition resources), such as internal revenues, donations, etc. For these reasons Table 2.1 is referred to as the base-line forecast.

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[10] The Special Fund, based upon tuition and fees from foreign students, has recently been abolished, and foreign exchange earnings from foreign students now accrue to institutions as direct income. However, the term Special Fund is still used for ease of cross-reference to other documents.

Table 2.1: Global Education Expenditures 1995 to 2000
(Base-line forecast, US$ million, 1995 prices)

		1995	1996	1997	1998	1999	2000	Average Growth Rate
1	GDP	34420	35482	35837	36195	36557	36923	1.42%
2	All Public Education Expenditure	1209	1361	1371	1384	1395	1406	3.17%
3	Higher Education Budgetary Expenditure	117	139	146	152	159	166	7.39%
4	Other Higher Education	39	60	62	65	68	71	14.21%
5	**Total Higher Education (3+4)**	**156**	**199**	**208**	**217**	**227**	**237**	**9.09%**

Source: Consultative Group for Higher Education, Mosteanu et al.,(1995).

2.12 The public expenditure levels *per student* implied by the base-line data in Table 2.1 is summarized below in Table 2.2. Information is given on both a per student and a full-time equivalent student (FTE) basis for the public university sector. The overall levels of expenditure are extremely low by international standards, but there is room for real growth in all of the subsectors. Growth in the share of the budget going to higher education would not be at the expense of real resource allocation per student in primary and secondary education, as the expenditure for the sector as a whole is projected to increase to 4 percent of GDP starting 1996 as required by the Education Law.

Table 2.2: Real Per Student Public Expenditures: 1995-2000
(Base-line forecasts, US Dollars, 1995 prices)

	1995	1996	1997	1998	1999	2000
Forecast Enrollment (Public Universities)	254100	259100	259750	253003	252796	255726
Forecast FTE Enrollment (Public Universities)	**263181**	**271096**	**271834**	**267238**	**266911**	**271067**
State Budget Higher Education Expenditure per Student	460	536	656	600	627	647
State Budget Higher Education Expenditure per FTE Student	**445**	**513**	**536**	**568**	**544**	**611**
Total Higher Education Expenditure per Student	614	766	808	858	896	925
Total Higher Education Expenditure per FTE Student	**593**	**732**	**766**	**812**	**849**	**872**
Primary and Secondary Education Expenditure per Student	255	290	295	299	301	304

2.13 Taking the base-line data from Table 2.1 and adding in the extra costs of specific reform items gives higher totals, which appear in the Income and Expenditure tables 2.3. These extra expenditures are mainly on postgraduate education and extra capital costs associated with new programs and enrollment increases. There are other relatively minor adjustments arising from estimates of extra costs and cost savings arising from the program for reform of higher education. The extra costs identified in table 2.3 do not correspond exactly to the proposed investment program items shown later. This is because the investment program involves the re-orientation of some existing planned items, and their integration with new policy initiatives.

Table 2.3: Higher Education Investment Program
(US$ million, Constant 1995 prices)

		TOTAL [1996-2000]	1996	1997	1998	1999	2000
1	State Budget	760.6	139	145.6	151.9	158.6	165.5
2	All Other Sources	412.7	74.3	79.2	83.4	85.8	90.0
3	**Total Income (1+2)**	**1173.3**	**213.3**	**224.8**	**235.3**	**244.4**	**255.5**
4	Basic Current Expenditure	912.4	168.8	175.8	182.3	189.2	196.3
5	Graduate Programs	45.9	6.6	8.7	10.1	9.7	10.8
6	**All Current Expenditure (4+5)**	**958.3**	**175.4**	**184.5**	**192.4**	**198.9**	**207.1**
7	Basic Capital Expenditure	174.4	29.8	32.3	34.7	37.4	40.2
8	Additional Capital Expenditure	41	8.2	8.2	8.2	8.2	8.2
9	**All Capital Expenditure (7+8)**	**215.4**	**38.0**	**40.5**	**42.9**	**45.6**	**48.4**
10	(of which Grad Program)	8.8	1.2	1.6	1.9	1.9	2.2
11	**Total Expenditure (6+9)**	**1173.7**	**213.4**	**225**	**235.3**	**244.5**	**255.5**
12	*Identified Development Expenditure (5+9)*	261.3	44.6	49.2	53	55.3	59.2
13	*Identified Extra Resources (5+8)*	86.9	14.8	16.9	18.3	17.9	19.0

2.14 The total extra resources required, in addition to the base-line total, is about $86.9 million (line 13 of Table 2.3). It is not likely that this level of additional investment funds for reform implementation can be secured from domestic resources because of the already high level of private financing, particularly from students. This is evident in the increase in the number of institutions reporting significant uncollected student fees.

C. Remaining Priorities

2.15 The steps taken since the start of the transition to change the Romanian higher education system constitute an impressive start in reshaping higher education to meet the

needs of a market economy. This early progress needs to be reinforced and extended. The priority areas for further implementation and development reform include the following:

(a) Management. The need to develop the capacity of newly-created intermediary institutions and management capabilities of higher education institutions to exercise effectively their newly-gained autonomy.

(b) Structure. Implementation of newly introduced short-cycle programs in higher education, especially successfully introducing college programs and programs for continuing education.

(c) Quality. Greater development financing needs to be channeled into the system to make up for past neglect and redress quality problems. This applies particularly to new infusions of development funds for innovation in teaching processes and materials in market-oriented fields; to bring traditional fields up-to-date; and to develop new interdisciplinary programs. In addition, greater flexibility needs to be achieved through such measures as full implementation of the credit-hour system.

(d) Postgraduate programs and academic research are priority areas for expansion and development, in part because of the urgency of increasing qualified teaching staff for undergraduate programs.

(e) Budgetary Transfer Mechanisms. The system of financial allocations must be changed to accommodate student flows, labor market interests and also to provide incentives for efficiency in resource use.

(f) Private Education and Cost-recovery. Greater efforts must be made at relieving supply constraints on expansion of private education and to reinforce cost recovery in public higher education; in parallel, targeting student support to the most needy.

III. THE SECTOR INVESTMENT PROJECT

A. Objectives

3.1 The proposed project aims at supporting implementation of the Government's overall policy framework (see Chapter 2 and Annexes 2 and 3), including specific assistance for new program development, quality improvement, and strengthening management. Overall policy objectives and the specific contribution of the proposed project in this context are explained below.

3.2 Objective 1. Improve the external productivity of higher education, i.e., reorient higher education to make it more responsive to the market economy by: (a) introducing new content and interdisciplinary programs; (b) adjusting the size of various programs to better reflect market demand; (c) building in flexibility in teaching organizations and programs; (d) full introduction of a credit system by 1997/8; and (e) full introduction of norm-based formula financing and block grants for recurrent expenditures by 1997/8. The proposed project would specifically provide financing for new flexible elements of higher education, including: diploma programs and continuing education; development financing on a competitive basis for introducing new content and interdisciplinary programs; and improvement of labor market information systems.

3.3 Objective 2. Revitalize academic programs so as to achieve higher quality standards by means of: (a) application of accreditation standards to programs and institutions; (b) linking educational results to financial allocations; (c) establishing incentives for program innovation; (d) achieving better balance between development and recurrent expenditures; (e) development of postgraduate education to relieve constraints on teacher supply; and (f) development of academic research as integral part of postgraduate education. Specific targets include 20 percent of total public education expenditures on development, innovations and capital investment by 1998/9. In this context, the proposed project would provide financial incentives for program innovation, reinforce the infusion of development financing, and specifically target postgraduate program development and academic research.

3.4 Objective 3. Control public expenditures on education through more efficient use and diversification of financing from other sources. This includes: (a) rationalizing the organization of teaching programs; (b) adopting new budget allocation procedures with efficiency incentives; (c) expanding private education; and (d) achieving greater cost recovery in public education. Specific targets include: private enrollment to reach 25% percent of total higher education enrollment by 1999/2000; non-public sources contribute at least 30 percent of total recurrent expenditures in public higher education institutions by 1998/9. In this context, the proposed project would help remove constraints on expansion of private education by increasing the supply of qualified teaching staff; ensure the access of private

institutions to competitive grants for program development and innovation; and rationalize the process for approval of capital grant requests.

3.5 Objective 4. Ensure that needy but talented students have access to higher education. The proposed project would: (a) introduce a new support scheme for students in public institutions; and (b) provide incentives to accredited private higher education institutions to support needy but talented students. Targets include: no less than 20 percent of scholarships allocated to needy but talented students, and limit merit-alone scholarships to 3 percent of overall student support budget.

3.6 Objective 5. Strengthen system and institution management in terms of strategic planning capacities, professional planning and control, and better institutional management and administration. This includes: (a) redefining the central government role in higher education management; (b) establishment of professional intermediary institutions; and (c) decentralization by ensuring that higher education institutions are able to exercise delegated authority. The proposed project would help the recently established intermediary organizations function as intended through selecting grant proposals for financing, by requiring that institution development plans become a prerequisite for access to competitive grants, requiring higher education institution management to select grant priorities through internal review and supporting technical assistance and information systems development.

3.7 **During Negotiations, the Government gave assurances that it will maintain its commitment to the measures in the sector policy matrix (Annex 3) agreed at appraisal and that it will consult with the Bank annually in the execution of intended measures and any changes in the policy.**

B. Project Content

3.8 The proposed project would finance programs in three broad areas: management capacity improvement, undergraduate program innovation, and postgraduate teaching and research. Each is presented below in sequence.

Component I: Management Capacity Improvement. (Proposed Outlay: $14.3 million)

3.9 The objective of this component is to strengthen the management capacity of the higher education system by assisting the new intermediary organizations and developing the capacity of individual higher education institutions to respond to systemic reforms.

(a) Management of the Higher Education Councils. Each of the councils will prepare a staff development plan identifying the training needed for professional and support staff in consultation with vendors supplying technical assistance. A consolidated staff development plan will be presented by the

secretariat to the British Know How Fund and other donors supporting this subcomponent. Professional staff of the councils would receive practical training, much of it provided in the form of short-term apprenticeships. This training would focus on learning the policies, procedures, organization and reporting practices of agencies concerned with accreditation, establishing degree equivalency, higher education financing, and university research. As a result of this training, the Romanian intermediary agencies will be better able to prepare staff recruitment and development plans, organize their staff more efficiently, and to develop decision making support and reporting systems. This subcomponent provides funding for local and foreign non-degree training and study visits, per diem and travel costs for the professional staff and Secretariat of the Councils.

(b) Management of Higher Education Institutions. Support will be provided to assist the Councils to offer seminars/workshops for administrators and staff of higher education institutions on such topics as preparing institutional/program self-diagnoses, designing institutional formula funding mechanisms to distribute budgets to faculties and programs, techniques for long term institutional and budget planning, management of student services, improving targeting of student financial support, and research management. The subcomponent would support per diem, travel, professional honoraria, printing materials and other local organizing costs. About 10 training seminars/workshops would be organized per year, the majority at institutions outside the capital region. Most would involve 10 to 15 participants, except for large seminars held in Bucharest.

(c) Management Information Systems. To improve decision making, assistance will be provided to establish management information systems to support the activities of the Councils and communications between the higher education institutions and the Councils. These systems will facilitate updating, analysis and sharing of data received from higher education institutions on their enrollment, staffing mix, instructional facilities and resources, expenditures, revenues, academic and budgetary plans and other information used for accreditation, financing, system-wide strategic planning and periodic evaluation of grants for teaching, program development and student financial assistance. The National Higher Education Financing Council will also conduct or commission studies on the national economy and labor market that are relevant to strategic planning for the higher education system. The National University Research Council will receive assistance to establish a data base on applicants, peer reviewers, grants awarded and audits of funded projects. The project would provide equipment, materials, training and technical assistance, which will be financed by grants from the EU and bilateral donors.

(d) Project Administration. To monitor the implementation of the Bank-financed elements (Components II and III), a Project Coordination Unit (PCU) has been established under the Directorate of Higher Education. The project will support the operations of the PCU including the provision of appropriate office facilities and equipment, locally funded specialist services in project administration, and training of PCU staff in procurement, disbursement and project administration practices. The functions of the PCU are further described in para 4.25. The terms of reference of the PCU are described in the Project Implementation Plan.

Component II: Undergraduate and Continuing Education (Proposed Outlay: $27.6 million)

3.10 The proposed project would provide financial support on a competitive basis for the development of new undergraduate teaching programs, i.e., at or below first degree level. The basic purpose of the assistance is to help reorient the system of higher education to make it more responsive to market demands. The assistance would support the implementation of the Government's overall reform program in three respects: (a) building flexibility in the structure of higher education; (b) changing the content of higher education; and (c) improving the effectiveness of the teaching process. Structural flexibility would be achieved by supporting the diversification of levels of instruction in higher education, including shorter, non-degree programs. Changing content would mean introducing or strengthening new fields of study related to the market. Improved teaching effectiveness would be achieved through staff development and the introduction of new, modern teaching methods. The following kinds of expenditures would be eligible for support: staff salaries; teaching materials; local and external fellowships; local and foreign expert services; equipment; and minor building upgrading.

3.11 The Undergraduate Program Innovation includes three kinds of sub-projects: university degree programs; college diploma programs, and continuing education. Each is described below.

(a) University Programs, i.e., degree level. (Proposed Outlay: $13.9 million) The objective of this subprogram would be to introduce or reinforce new, market-related content in degree programs. Assistance would be provided for three types of sub-projects:

(i) the introduction or reinforcement of teaching programs in new fields of study important for the market economy. This includes new programs in such fields as business administration, small business management, accountancy, applied social sciences, political science, social work and public administration;

(ii) creation of interdisciplinary programs, such as food science, natural science and environmental engineering; engineering and management; and

(iii) new approaches to learning, such as computer-based instructional systems; team teaching; development of self-study modules, and development of teaching materials.

(b) College Programs, i.e. diploma level. (Proposed Outlay: $7.0 million) The objective of this subprogram is to help diversify the structure of higher education by developing two-year diploma programs. These shorter cycle programs would be more vocationally oriented than the four-year degree programs. They would focus on fields of importance to the local economy, such as tourism, small business management, etc.

(c) Continuing Education Programs. (Proposed Outlay: $6.7 million). The reason to support continuing education programs is to achieve greater labor market flexibility. Under a market economy people do not train only once for a given occupation. Instead, provision must be made for changes in occupation and also for frequent upgrading within the profession as the technology changes and job content is changed. Under the proposed assistance for continuing education programs, people who already possess higher education qualifications could undertake upgrading or retraining programs to respond to new knowledge and skill requirements in the labor market. Graduates of the socialist era would constitute a large target group for retraining. Courses would typically be short (weeks or months) and could be pursued through part-time studies, i.e. while employed. They would be financed through full cost recovery. The types of programs to be assisted include establishment of up to eight regional continuing education centers within universities and colleges. Assistance could finance the development and delivery of specific intensive training courses, distance education, computer-aided education.

Component III: Postgraduate Education and Research. (Proposed Outlay: $42.1 million)

3.12 The proposed education project would also provide financial support on a competitive basis for the development of new postgraduate teaching programs and research programs, i.e. after the first degree level. The basic purpose of the assistance is to relieve constraints on improvement of quality and expansion of undergraduate enrollments in market-oriented fields by developing the next generation of academic staff needed for building and sustaining quality in undergraduate programs. The project would also develop a cadre of professionals with advanced training in new fields demanded by a market economy. The project would thus seek to expand the output of Romanians with postgraduate qualifications in priority

fields. Expansion of quality output, in turn, requires: (a) development of new post-graduate teaching programs and materials; (b) better teaching staff at the post-graduate level; (c) effective introduction of academic research as an integral part of teaching programs; and (d) use of competition in allocating resources so as to support the most meritorious proposals.

3.13 The Postgraduate Education and Research Program includes three subprograms: postgraduate program development; major research programs and multi-user research centers, each of which is explained below.

3.14 Postgraduate Education Innovations (Proposed Outlay: $14.4 million). The objective of the subprogram is to enhance the relevance of teaching content to recent developments in the market economy by: (a) adding and reinforcing new fields of study; and (b) updating traditional fields. Assistance for two general types of sub-projects is envisaged:

(a) The introduction or reinforcement of teaching programs in fields of study important for the market economy. This includes programs in such fields as business administration, small business management, accountancy, applied social sciences, political science, social work and public administration.

(b) Creation of new interdisciplinary programs, such as food science, natural science and environmental engineering; engineering and management.

3.15 Major Research Programs (Proposed Outlay: $13.7 million) Research is being re-integrated into postgraduate programs so as to ensure adequate quality of the postgraduate training. The proposed project, therefore, includes funds for the development of academic research. The objectives of the subprogram are to: (a) strengthen Romanian capacity to manage academic research programs; (b) develop and expand the volume of research programs supporting training for Masters and PhD students; (c) develop networks of academic research teams with laboratories and institutes; and (d) mobilize additional research funds from outside sources. Examples of activities to be supported are funding for postgraduate student research carried out under the direct supervision of research supervisors, programs which involve co-supervision of postgraduate student research and collaboration among academic staff, and between academic staff and postgraduate students of other public research institutions.

3.16 Multi-User Research Centers. (Proposed Outlay: US$14.1 million) Romanian universities have inadequate facilities for advanced training. Consequently, and in view of the importance of academic research to quality improvement in postgraduate education, the proposed project includes funds to augment research capabilities and thereby stimulate additional academic research. Consistent with the policy of concentrating scarce postgraduate resources in a few institutions, the project would select, competitively, a limited number of institutions in which to create regional centers of excellence with advanced research facilities.

These facilities would be widely available to graduate students as well as postdoctoral fellows. By concentrating in a few centers, the project would reduce or avoid institutional duplication and allow scarce national resources to be employed efficiently. The proposed project would provide support for the establishment or strengthening of research facilities/services, such as Internet nodes, specialized libraries, the purchase of equipment and minor renovation of facilities.

C. Economic Analysis

1. Linkages to CAS

3.17 The proposed higher education project is consistent with the most recent Country Assistance Strategy (April 5, 1994). The family of projects in human resources singled out for priority consideration by the Bank included; (a) the reform of curricula, textbook provision, and decentralized management and finance in basic education (Education Reform Project, Loan 3724-RO, FY94, see MOP); (b) a project to help develop services for the unemployed, support targeted programs of social assistance and help rationalize pension and benefit systems (Employment and Social Protection Project, Loan 3489-RO, FY95, see MOP); and (c) assistance to higher education. It was noted that discussions on higher education reforms and strategy were underway with the Government and agreement would lead to project identification. The project would support investments in human capital as privatization proceeds and would support the emerging private education sector and aim at enhancing training in management and other skills that would be needed in the emerging private sector. The CAS states that a higher education project that increases the role of the private sector and develops the new skills needed in the emerging private sector would be especially beneficial with the emergence of a faster pace of private sector development. During recent discussions (March 1996) Romanian authorities confirmed the importance they place on reforming higher education.

2. Linkages to Economic and Sector Work (ESW)

3.18 The Bank started policy dialogue with the Government on issues of higher education and research in 1990 as part of the initial sector work on human resources. That resulted in the red cover report, Romania: Human Resources and the Transition to a Market Economy (1992), one chapter of which analyzed higher education and research issues and was widely discussed in Romania. The Government has already taken action on several recommendations in that report, such as increasing cost recovery in public institutions and developing accreditation procedures for public and private institutions. In early 1993 a series of technical studies of key issues was launched with support of the Human Resource Development Grant from the Government of Japan. This grant financed additional policy studies on quality assurance, financial management, and human resources in higher education and research. The findings of these studies fed into the Strategy Note on Reform of Higher

Education (World Bank, September 20, 1995). Among other topics, this Strategy calls for further diversification of higher education programs; continued development of the accreditation process; development of credit-hour systems for flexibility; new employment status for academic staff; expanded post-graduate education; increased budget resources; increased cost recovery; and improved budget allocation procedures. The proposed project has been based upon the conclusions of this sector work. Moreover, the studies led to the adoption by the Government of a comprehensive strategy for reform of higher education in 1994, which set the basis for the 1995 Education Law.

3. Policy Environment

3.19 Substantial policy changes have already been adopted by the Government during the course of preparation of the project. The policy framework for reforms is virtually complete, and is codified in a series of Governmental Decrees and the Education Law of 1995.

3.20 Private Education and Competition. Private education is well established and already ranks ahead of most countries in the world with a third of total enrollments. The legal basis for private education was established in 1991, and the Education Law (1995) gives private higher education establishments a much firmer legal foundation, allowing them to receive certain kinds of public funding, such as research grants, and providing them with the same tax exemptions as public institutions. There are no impediments for private institutions to operate freely, and they may set fee levels by themselves; however, they must be accredited to be able to provide state-recognized degrees and certificates. In fact, 22 private higher education institutions (out of 74 applicants) received provisional accreditation for 397 programs in 1995. Further, for both public and private accredited institutions, the proposed Project would implement a new policy and enhance competition by allocating development funds through competitive procedures.

3.21 Demand Responsiveness. The extensive system of private education provides a basis for competition with the public sector. This competition is particularly evident in programs opened for new market-related occupations, such as the University of Ecology which has six applicants for each student admitted. Despite the rigidities in the existing budgetary transfer mechanisms, the composition of enrollments by field of study underwent massive change in the early 1990s, when enrollments in engineering dropped from 65 percent of the total to 31 percent, the share enrolled in economics (including management and business administration) more than doubled and social sciences/ humanities tripled. Under the project, such shifts would be facilitated through the introduction of norm-based formula funding in which funds would follow student enrollment by fields. This method of financial allocations would also help to even out over- and under-staffing of programs.

3.22 Cost Recovery in Public Education. The public institutions now have the autonomy to charge appreciable user fees. Although basic tuition is free by Constitutional right, supplementary fees can be charged and these are expected to reach one third of all expenditures by the year 2000 from the present level of 23 percent.

3.23 Autonomy of Higher Education Institutions. Higher education institutions were given considerable autonomy in academic affairs, early on in the transition, through the end of 1991. Thereafter, the authority of higher education institutions has been progressively increased through ownership of facilities; freedom to keep additional resources earned off-budget; and the freedom to spend budgets independently.

4. Analysis of Alternatives

3.24 Five alternative project designs were considered. The first alternative was no Bank-supported project at all; the second was to concentrate exclusively on expanding private education; a third was to invest only in market-oriented fields of study; the fourth was to invest only in postgraduate studies and research; the fifth was to finance only foreign training for postgraduate studies and research.

3.25 Project Not Financed. Without the project the Government would proceed with its reforms of higher education as best as it could. As stated above, the regulatory and enabling framework is already in place, so the reforms could take place. The EU project for institutional development has already been approved and could be implemented without a Bank loan. Normative funding of recurrent expenditures could also be introduced, although it might be diluted without the force of an international lending agency behind it. The main difficulty without the project would be a major constraint in terms of investment funds. System innovation through new teaching programs, development of graduate education and strengthening of academic research capacity would be compromised. Institutional capacity building, both for the system and specific higher education institutions, would be curtailed by the lack of opportunity to gain experience in allocation of development funds according to more rational criteria. The proposed benefits would not be realized, and two of the three principal issues facing the system -- lack of development financing to make up for years of neglect, and shortage of qualified teaching staff in private education -- would remain largely unsolved.

3.26 Concentration on Expanding Private Education. Consideration was given to focusing exclusively on incentives for strengthening and expanding private education. This alternative was attractive, given the substantial recent development of private education and its important future role in containing public expenditures on higher education. However, it was concluded that this approach was too narrow for three reasons: First, the major constraint on expansion of quality private higher education in the medium to long term is shortage of qualified academic staff, especially in the high demand fields of applied social sciences,

business and finance. Selected public postgraduate education institutions are the best equipped and best placed to be the principal supplier of such qualified staff. Second, exclusive concentration on private education would neglect the rehabilitation and reform needs of public universities, which still account for about two thirds of enrollments and are expected to continue to enroll the majority of students in the future. Third, there could be equity problems, since only relatively well-off families could afford private university tuition.

3.27 Invest in Market-Oriented Fields Only. This alternative would be attractive in that it targets the fields in highest demand at present, and in which the resources are most strained. However, enrollment in these fields is now stabilizing. The main constraint is to renew and develop the professorate in these fields. Assistance to some departments and not others takes an insular approach to reform. The needed reforms (e.g., more development financing, better budgetary allocation mechanisms, improved institutional management) apply to the system as a whole and cannot easily be treated in isolation. Moreover, innovation is needed in consolidation of programs and in creating new interdisciplinary programs. These cannot easily be anticipated in advance, and a narrower approach could well exclude many worthwhile initiatives.

3.28 Invest in Postgraduate Education Only. This alternative has the merit of focusing on the area with the greatest relative need for development, It is virtually new to Romanian higher education since 1990. (Previously doctoral studies and academic research were conducted in various relatively small and fragmented departmental research institutes.) It would also address squarely the principal constraint on sustained expansion and improvement of private higher education, namely, increasing the supply of qualified teaching staff. However, this alternative suffers from many of the weaknesses of the previous alternative. It neglects the legitimate requirements of undergraduate education for rehabilitation and new programs; and it takes a partial approach whereas the key policy reforms should be system-wide.

3.29 Finance of Needed Postgraduate Studies Abroad. Rather than build Romanian capacity, which is clearly a long-term process, one alternative would be to finance the needed postgraduate studies exclusively abroad. The advantages would be speed, and in some instances, lower cost -- particularly where the alternative is to have to invest in equipment and infrastructure for Romanian institutions. Foreign training is a valuable means for acquiring academic qualifications at the advanced level, however, it cannot substitute for Romanian capacity. Over the long run, reliance upon external training would cost more than the establishment of postgraduate teaching and research capacity in Romania. Local training can be more relevant in content, and would tend to minimize problems of brain drain inherent in studies abroad.

3.30 The conclusion from these considerations is that a broad sector investment strategy is needed that takes into account the interrelations of key parts of the system.

5. Cost-benefits/Cost-effectiveness

3.31 With respect to assessing benefits, the usual methodology entails using earnings differentials according to levels of education as a proxy for the marginal productivity of more educated workers relative to less educated workers. Although this assumption is not likely to hold in Romania, examining detailed earnings data for university and secondary school graduates from a 1994 household survey can still be useful. Based upon econometric analysis of this survey data (regressions controlling for education, experience and industrial sector), university graduates (4 years beyond secondary) earn on average 36 percent more than secondary graduates (see Annex 4 for more details on the survey and the econometric analysis). Ideally, it would be more useful to focus on workers in the private sector, but the 1994 data, however, does not show any significant difference in private and public sector pay for university graduates. This is not surprising given the gradualist approach taken by Romania to reducing the weight of the public sector in economic activity. Wage differentials have not widened as much in Romania as in other transition economies that have moved more rapidly with privatization and liberalization of their markets. A comparative study of earnings among CEE economies notes that the premium to higher education has increased to OECD levels in the "fast track" countries, in contrast to the gradualist countries like Romania[11]. A recent informal study (February 1996) of the labor market in Bucharest indicates that demand is strong for graduates of higher education, especially in business and computer related fields. As a result of the FESAL and the recent agreement with the IMF, the pace of Romania's economic reforms is expected to accelerate and wage differentials by education level and across fields of study can be expected to increase as in the other CEE countries when their reforms accelerated.

3.32 With respect to costs, unit costs in Romanian public higher education are about 40 percent of GNP per capita, a very low figure that reflects insufficient funding of higher education. Given the backlog of investment needs accumulated over the past decade and the need for modernization of equipment and programs, unit costs are likely to rise to about 50 percent of GNP per capita during the period of the project. However, cost-effectiveness (achieving objectives at least cost) is a key feature of the project design. Substantial cost savings will be realized through the shortening by one year of the duration of many programs, such as engineering, and increasing enrollment share in the shorter college level courses. The formula funding approach based upon student demand that is the new basis for financing core budgets of public institutions will contribute to cost effective operations. In addition, the competitive approach to financing program development and research in the universities (accredited private and public) will require institutions to analyze costs carefully in relation to objectives.

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[11] See Jan Rutkowski, "Changes in the Wage Structure During the Economic Transition in Central and Eastern Europe (1995). This study was prepared as part of the Social Challenges of Transition Project in the EC1/2HR division.

3.33 Costs and earnings data can be used to estimate the private and social rates of return to public higher education.[12]/ The private rate of return, which takes into account private benefits and costs, can be estimated from the regression coefficient for university relative to secondary education, on the simplifying assumption that the only private costs incurred are the earnings foregone by attending university full time. The private rate of return by this approach is about 9 percent (see Annex 4 for a description of the methodology). The social rate of return, which must also include the public costs of providing higher education, can be estimated by calculating the internal rate of return to the cost-benefits stream associated with higher education. The social rate of return estimated by this approach is about 7.5 percent. Since it is expected that wage differentiation has much further to go in Romania, these estimates, both private and social, should be regarded as a lower bound -- which is about as much precision as the existing data would allow. To improve cost-benefit estimates so that policy makers in the future will have better information, the project would support monitoring of costs and benefits as the labor market continues to develop.

3.34 Two points should be noted concerning the above rate of return estimates. First, the social rate of return of 7.5 percent is not the expected rate of return to the project, but is more a measure of the low relevance of the current higher education system to labor market needs and the incomplete adjustment of the labor market in terms of wage differentiation by levels of education. Second, the project is intended to increase the rate of return to higher education by producing graduates with more relevant knowledge and skills for the market economy.

3.35 Non-market benefits (external effects not captured in the wage differentials) from higher education and research, although much debated in the economics literature, are likely to be present in the context of a transition economy like Romania. New ideas and attitudes will be crucial to sustaining the economic reforms, and higher education and research that links Romanian firms and professionals to best practices in international markets would have a higher marginal impact than similar investments in established market economies. This is especially so given the previous isolation of managers of Romanian firms and researchers in Romanian commercial and academic institutions. These external effects at the margin would add to the social rate of return of the project investments resulting in a social rate of return likely to exceed the 10 percent benchmark often used for returns to physical capital.

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[12] See G. Psacharopoulos, "The Profitability of Investments in Education: Concepts and Methods", Working Paper 63, World Bank (1995) for a succinct discussion of methods of estimating rates of return to education. Annex 4 presents the details of the calculations for estimating the private and social rates of return to higher education in Romania.

6. Cost Recovery and Fiscal Impact

3.36 The Government's reform program stresses continued high rates of cost recovery. Private education is to be encouraged (through access under the Project to competitions for development resources) and is expected to accommodate most of the future increases in higher education enrollments. In addition, the Government program continues to stress cost recovery in public institutions through collection of a variety of non-tuition fees, which are expected to cover 30 percent of total costs in public institutions by the end of the decade.

3.37 The project would have a clear fiscal impact, but steps are proposed to ensure this fiscal impact is of manageable proportions. By making up for years of neglect in development financing and financing program initiatives, the project would require increased recurrent expenditures in future years. These increases would apply mainly to continuation of new programs and maintenance of equipment. To the extent that these new programs replace existing teaching programs, the fiscal impact would be neutral. However, some increases are inevitable and cannot, at this stage, be quantified. The Romanian authorities are clearly aware of the prospect for increases. Incremental recurrent costs of project investments are to be sustained by a continuation of efficiency savings in the use of operating grants and/or private financing. Institutions must present a plan for financing their costs when presenting proposals. Funding for any recurrent costs (e.g., employment of technicians, maintenance, consumables) would be provided on a declining basis. For this reason, the HEFC will review all new program proposals for their financial sustainability within likely budget levels. This explicit review for financial sustainability is expected to avoid unanticipated consequences, and financial problems for sustaining program innovations.

7. Public/Private Justification

3.38 One of the fundamental objectives of the project is to eliminate the teacher supply constraints on expansion of private higher education. Another is to improve the quality of higher education, through equal competitive access for accredited private institutions to the development and innovation funds provided by the project. In these ways the project would contribute to strengthening private higher education as an alternative to the traditionally strong public higher education in Romania. The project also would contribute to strengthening and quality improvement in public education, such that a competitive balance can be reached by the end of the decade.

8. Institutional Capacity and Regulatory Framework

3.39 The regulatory framework is satisfactory given passage of the Education Law in 1995 and subsequent issuance of implementing decrees. The key intermediary institutions have also been established, including the National Council on Accreditation and Academic Evaluation (1994), National Higher Education Financing Council (1995) and National

University Research Council (1995). As new organizations, they lack full experience, but the Government has increased the staffing of these organizations in anticipation of the workload implied by the project, and the EU technical assistance is directed at further capacity building. This assistance would also be directed at the autonomous higher education institutions.

9. Poverty Analysis

3.40 The project is not directly aimed at assisting poorer segments of society as such, but is aimed more at raising economic productivity and promoting economic growth, which would contribute to poverty reduction. However, the Bank is also financing several social sector projects in Romania that assist the poor. These are: the Employment and Social Protection Project (FY95) that assists the unemployed and families in poverty, the Education Reform Project (FY94) that supports maintaining and modernizing basic education (primary and secondary), and the Health Rehabilitation Project (FY92) that focuses on improving primary health care. According to the recent poverty assessment for Romania (April 1996), the basic levels of education show fairly equal access for the poor, but higher education shows inequality of access. This project would help compensate for the negative impact of cost-recovery in higher education on poor families by ensuring: (a) that needy but able students receive increased support in public HEIs, and (b) providing incentives for private HEIs to give scholarsips to needy but able students. These need-based scholarships coupled with the expansion of higher education opportunities, will improve the access of the poor to higher education.

10. Environmental Analysis

3.41 This is a Category C project, having no direct environmental implications. Indirectly, environmental studies have proved to be a growth area in the past few years. The project would provide initiatives for opening new interdepartmental programs combining environmental studies with other fields. Graduates of these courses, together with research carried out by universities, are expected to make a positive contribution to environmental work.

11. Rationale for Bank Support

3.42 In sum, investments in higher education and research can make a significant contribution to Romanian economic growth.[13] Romania has already achieved near universal

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[13] The economic rationale for investments in education, including higher education and research, is well documented in studies of the sources of economic growth and the contributions of human capital. With respect to Bank policy concerning the application of this economic rationale to specific country circumstances, see Higher Education: The Lessons of Experience (World Bank, 1994) and the sections on higher education in the

enrollment in basic education, where typically the economic returns are highest, and is ensuring that this achievement is maintained during the transition period. Having protected the basic levels of education, public support for higher education and research is warranted to the extent that these have characteristics of public goods. To the extent these are private goods, cost recovery and private funding is warranted. Both the public and private investments in higher education, which this project would stimulate, can be expected to yield significant returns since, with growing wage differentials, a reformed higher education system would provide the managers, technical professionals, entrepreneurs and overall societal leadership with the new knowledge, skills and attitudes needed to sustain the transition to a market economy.

3.43 The proposed project represents a sound investment in a domain in which the Bank possesses both the requisite sector and country knowledge as well as extensive lending experience in other regions. The project is to be undertaken in the framework of a reform strategy that enhances both the internal and external efficiency of higher education. Bank support for the financing and implementation of the project is justified for a number of reasons. First, Bank financing is appropriate given the need for increased public outlays, current scarcity of both foreign exchange and domestic savings, and the medium- to long-term nature of the benefits of the project. Second, Bank participation would also serve as a catalyst to attract cofinancing for the project. Third, given the mutually reinforcing linkages between higher and basic education, this project would complement previous intervention in the education sector and have a positive impact on basic education.

Bank's recent education policy paper, Priorities and Strategies for Education: A World Bank Sector Review (1995). Applying these principles to the Romanian situation provides strong justification for both private and public investments in higher education and research as well as Bank support of these investments.

IV. IMPLEMENTATION

A. Lessons Learned from Previous Bank Operations

4.1 The Bank has acquired important experience in the implementation of human resources projects in Romania. The first Bank assisted human resources project was the on-going Health Rehabilitation Project (Loan 3409-RO for US$150 million, FY92) that supported the priority needs of a health sector that was in serious crisis. The second Bank supported human resources project is the Education Reform Project (Loan 3724-RO for US$50 million, FY94) that focuses on the restructuring of basic education to make it more appropriate for a market economy. The third Bank supported project is the recently approved Employment and Social Protection Project (Loan 3489-RO for US$55.4 million, FY95), which addresses, inter alia, training needs of the labor force and social protection. Experience with these projects has shown that the weak implementation capacity of the Government agencies must be addressed in the initial project design.

4.2 Other lessons from projects elsewhere pertain to the use of "innovation funds" in higher education, and "peer review" to select grant proposals. The Hungary Human Resources project (Ln. 3313 FY91) provided discretionary investment funding to individual institutions through three competitive rounds. That project launched a large number of new educational programs, including specific curricula and changed teaching methods. However, much of funding was fragmented and lost in the morass of an unreformed higher education system. In addition, despite well crafted objectives and criteria and a basically sound evaluation system, allocation of funds was subject to political influence and the continued spreading of funds equally across institutions, resulting in small funding amounts and limited impact. An additional problem in this and similar projects was insufficient protection for preserving the integrity of the peer review process for evaluating funding proposals. Guidelines relating to conflict of interest for instance, were not well developed or monitored, nor were evaluation procedures designed to discourage wholesale reallocation of funding recommendations, with the result that peer review had too little impact on decision making. These issues have been addressed in the design of the procedures to allocate funding in the present project which, unlike those mentioned above, will apply to all public money to higher education rather than just to project funding. Moreover, the programs supported by the project will be subject to rigorous ex ante review to insure adherence to agreed criteria and procedures.

4.3 More generally, the experience of the Bank with investment funds and sector investment lending projects (SECIL) indicates the following lessons:

(a) Experience with training funds points to the importance of: (i) careful phasing to match the pace and scale of the project to management capabilities; (ii)

building ownership and commitment through beneficiary participation in the design of the project; (iii) flexibility, particularly in countries with unstable political and economic conditions, so as to be able to respond to changes at the macro level and to locally diverse needs; and (iv) the role of consumers and users of skills in deciding on program priorities;

(b) Lessons from social investment funds show: (i) their potential to establish partnerships between central government, private interests and local authorities and build strong coalitions in support of reform; (ii) the importance of having a clear understanding of the responsibilities of the various partners; (iii) the need for transparent management and isolation from partisan politics; (iv) the potential to build local capacity and distribute benefits widely through training and assistance in the formulation of small-scale projects; and (v) the general tendency to underestimate procurement and disbursement issues during preparation.

(c) Experience with sector investment projects in education suggests that implementation can be enhanced by a period of trial testing of the appraisal mechanism before loan approval. All the project instruments mentioned above stress the importance of frequent and close supervision for these kinds of projects.

4.4 The proposed project has incorporated these lessons in project design. The bodies which will assist in implementing the project have been in operation since 1995 or earlier. The National Council on Accreditation and Academic Evaluation is the oldest and most experienced. Its expert panels will be involved in making recommendations to the National Higher Education Financing Council and the allocation of funds for new or restructured undergraduate and postgraduate programs. The National University Research Council, as noted above, has already successfully organized two pilot grant competitions (1995 and 1996). These have been invaluable in testing and refining procedures. The National Higher Education Financing Council is the newest and least experienced of the implementing bodies. So far, its work has focussed on designing the formula funding and student support schemes. The council's staffing is being strengthened through a twinning relationship which has been established with the British Higher Education Funding Council to provide technical assistance. The National University Research Council has established similar twining relationships with other research funding bodies in Europe. Extraordinary efforts were made in project development to widen the consensus and involve a broad range of Romanian authorities in and out of government. Thus, already during project development, an important dialogue had been created between public and private agencies over sectoral issues and policy. The result has been a remarkable degree of consensus and widespread commitment to the objectives and means of the project.

B. The Sector Investment Approach

4.5 The project design as a sector investment project stresses agreement on the policy framework in general and in program content, along with delegation of the selection of specific investments (sub-projects) to intermediary institutions. Therefore, no specific sub-project investments have been pre-identified, and no quotas have been fixed by field of study. Instead, emphasis has been placed on the organizational framework, procedures and criteria for selection of specific investments. There are two reasons for this approach. First, the project seeks to maximize its impact on the functions of the newly-created intermediary institutions and higher education institutions that recently have been given considerable autonomy. An explicit objective of the project is to assist in capacity building by transferring project procedures and criteria to the normal functions of these institutions. Second, the project -- in contrast with previous experience in the command economy -- takes a "bottom-up" approach, in which the teachers, researchers and administrators of higher education institutions can propose innovations in the programs they offer. This approach relies on the initiative of the main providers and has proved instrumental in other contexts in stimulating thinking, development of alternative approaches and reform on a wide scale.

4.6 Types of Sub-projects. Resources for developing higher education teaching and research programs under Components II and III would be awarded in the form of grants to eligible higher education institutions following a series of annual competitions. Grant awards would be of two types for different kinds of sub-projects:

(a) Pilot projects, or initial stages of programs. These would usually be less than one year in duration, and range in cost from $5,000 to $25,000. These could cover the development of specific new teaching courses, teaching materials or innovations in curricula. They could also be intended as the first phase of more comprehensive sub-projects, i.e., based on their success, they could be expanded.

(b) Sub-projects, ranging in cost from $25,000 to $500,000. These sub-projects would be typically preceded by pilot projects during which the success of the approach would be demonstrated; approval of comprehensive sub-projects would be contingent on a successful seed project. They would be comprehensive in scope and pursue essential changes in one field of higher education at one or several higher education institutions. The duration would be 2 to 3 years.

C. Selection of Sub-project Grants (See Annex 5 and Project Implementation Plan for details).

4.7 Organizations. Sub-project selection would be the responsibility of three key organizations. The National Council on Accreditation and Academic Evaluation would be responsible for ensuring that proposals for new programs are consistent with the mission and capacity of the applicant institution. The National Higher Education Financing Council would be responsible for evaluating the proposals for undergraduate teaching programs and ranking them in terms of priorities. The National University Research Council would evaluate and rank post graduate teaching and research proposals. The Minister of Education would make the final awards based on the recommendations of the Councils.

4.8 The three key organizations would have full-time staff necessary to carry out the evaluation of the proposed programs, as follows:

Table 4.1: Staffing of Intermediary Organizations

(Number of staff)

Organization	Managers	Professional	Support
National Accreditation Council	1	3	10
Higher Educ Financing Council	1	6	5
University Research Council	1	12	5

4.9 **During negotiations the Government gave assurances that it will maintain the Higher Education Councils with a sufficient number of qualified staff, adequate facilities, and authority satisfactory to the Bank.**

4.10 Selection Procedures. Sub-projects submitted for funding would have to pass two stages of review before final award of grant funds, namely (a) internal evaluation at the level of the applying institution; and (b) evaluation at the level of the Higher Education Councils, as described below.

4.11 Internal Evaluation by the Higher Education Institution. The first stage of evaluation is within the higher education institution itself. The Board/Senate of the higher education institution designates an institutional review committee and an institutional ethical review committee to screen applications. The committees are comprised of members of the

institution's academic staff drawn from a cross-section of disciplines, who are known and respected for their integrity and scholarship. The higher education institution also selects a chief administrative officer to organize and supervise all aspects of the program at the institution, including publicizing information and application forms about the availability and conditions for grant funding. The institutional review committee evaluates and ranks all applications according to the agreed criteria, organizes them by academic area corresponding to those of the Higher Education Councils, and submits a report explaining each decision and the ranking to the chief administrative officer. The ethical review committee screens all applications involving experiments with human or animal subjects, biohazards or use of hazardous material, for conformity with applicable ethical guidelines. The Rector, or authorized representative, certifies that the review committees have observed the authorized procedures for evaluating proposals, and submits recommended proposals to the Higher Education Councils ranked in priority order for the higher education institution.

4.12 Review by Higher Education Councils. The National Council on Accreditation and Academic Evaluation would first review proposals and assess whether the proposed teaching or research program fits within the approved mission and institutional development plan of the applicant institution. Proposals on teaching programs would then be evaluated by the National Higher Education Financing Council. The National Higher Education Financing Council has established two review committees -- Programs Committee and Capital Development Committee. The Programs Committee would appoint up to three external assessors (referees) to evaluate proposals for program content. Applications that involve capital investment would also be reviewed by the Capital Development Committee. Assessors would review the proposals according to a standard rating form and instructions on its use (models of these documents were reviewed at appraisal, and are annexed to the Project Implementation Plan). Committee members in various disciplinary panels who have been assigned to review applications would receive the assessors' reports and prepare summaries as well as their own assessments. They would present these reports to the full Committee which would make a consolidated recommendation to the National Higher Education Financing Council.

4.13 Proposals for research grants and postgraduate teaching programs would be evaluated by the National University Research Council; (a) Proposals to establish or expand postgraduate programs would be screened by the National University Research Council for adherence to national standards and policies established by the Councils for Accreditation and Credentials. They would then be assessed by one of the seven disciplinary panels[14] of the National University Research Council on the basis of academic merit. Proposals recommended for funding would be ranked and submitted to the National Higher Education Financing Council for an evaluation of institutional sustainability, cost effectiveness and

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[14] Mathematics; physical sciences; social sciences and humanities; life and earth sciences; engineering; medicine; and agricultural sciences.

national priority; (b) Proposals to support research would be selected by the National University Research Council through its regular research competitions without recourse to the National Higher Education Financing Council for final recommendations.

4.14 Criteria for Sub-project Selection. Requests/proposals for grant funds to support the development of higher education programs and research would be evaluated in accordance with the following criteria, as summarized below. (Details are provided in the Project Implementation Plan.)

4.15 Eligibility Criteria. All public and private Romanian higher education institutions, which have been duly accredited by the National Council on Accreditation and Academic Evaluation to award degrees, diplomas and certificates are eligible to submit proposals and applications for grant financing. As of May 1996, 640 undergraduate teaching programs covering ten broad fields of study (including engineering, medicine, economics, law, sciences, etc.) offered in 48 public and 22 private higher education institutions have received this accreditation. Higher education institutions, to be eligible, must have medium- to long-term institutional development plans showing the place of the intended teaching innovation or research program in the overall institutional framework. Proposals may be initiated by an academic staff member, institutional unit, department or faculty of an accredited higher education institution. Proposals for academic research grants may also come from individuals or research teams in accredited higher education institutions, or those affiliated to institutes of the Romanian Academy or other public research institutions engaged in training-related collaborative research with staff or students in higher education institutions.

4.16 Content of Applications. Applications for grant funding would include information on the following subjects: background and justification (i.e., problems to be addressed and solved); objectives; strategy or approach; means of action; institutional and staffing arrangements, including a statement of the unit's academic and administrative capacity to undertake the activity; curriculum vitae of the principal academic staff involved; statement of the institution's academic reform strategy identifying program priorities; comparison of the activity to similar programs (completed or in progress); available instructional facilities, library holdings and research equipment; implementation plan, including critical benchmarks and outputs expected; costing and financing plan, including multi-year budget; projection of future financial requirements as a result of the grant, e.g., staffing and facilities requirements; standards, such as entry and graduation requirements; identification of specific outputs, benefits and risks; special conditions. These sections would be supported by quantitative surveys of employment and student demand; and projected wages of graduates.

4.17 Evaluation Criteria. Proposals would generally be evaluated according to a framework of four criteria:

(a) *Relevance or significance*: This refers to responsiveness to national priorities of the higher education reform; responsiveness of program curricula to the labor market, as reflected in employment opportunities and potential earnings; relevance to the Higher Education Council's long term development priorities; support for important regional development requirements; articulation with the institutional development plan; and complementarity with programs at other higher education institutions;

(b) *Effectiveness*: This refers to soundness of project design and means of achieving objectives; originality and expected contribution; innovativeness of proposed teaching methods; technical adequacy of the curricula and comparability to practices of leading advanced countries; collaboration among institutions; validity of testing and examination procedures;

(c) *Feasibility*: This refers to viability of implementing the program as proposed; availability and capability of staff and other human resources to carry out the proposed activities; institutional capacity to administer the grant; support from other organizations; sufficiency of available financial resources; sustainability of recurrent expenditures by the host/applicant higher education institution; realistic implementation timetable;

(d) *Efficiency*: This refers to reasonable cost assumptions and aggregate budget amounts by category; reasonableness of unit (i.e., per student) costs, and costs per unit of output; relationship of budget to National Higher Education Financing Council cost norms; cost savings owing to co-financing.

4.18 Priorities Priority would be given to grant proposals in market-oriented fields such as economics, management and business administration, social sciences and law, and interdisciplinary fields. Priority would be given to program and research proposals which (a) are highly ranked by the sponsoring higher education institution in its long term academic and budgetary plans and priorities; (b) provide evidence of strong student demand, likely employment opportunities and earnings; (c) document the higher education institution's capacity to offer the proposed program through piloting of program offerings, including the availability of co-financing; and (d) collaborate with other institutions, and are jointly administered by these institutions and which involve sharing instructional facilities and resources. Programs arising from collaboration with foreign institutions will also receive priority for funding.

4.19 Approval Criteria There are no pre-set quotas for distribution of funds by field of study; neither is there a limit placed on any individual field. Consideration was given to the establishment of such quotas and ceilings. However, this was abandoned for the following reasons: (a) The quality of grant proposals cannot be known in advance. Selection of

quality proposals is of utmost importance. In cases where sufficient proposals of acceptable quality are not received, establishment of pre-set quotas or ceilings could lead the Councils into compromising their standards and accepting low quality proposals; or neglecting high quality proposals in other areas; (b) the proposed sector investment program is intended to cover all areas of higher education, market-oriented as well as traditional. Structural changes are needed in traditional fields such as engineering to bring the content up-to-date with modern requirements, to establish credit systems, and to build interdisciplinary programs. Artificial ceilings could work against this objective. Instead, the Councils would establish in advance of competitions a set of "indicative allocations" by field of study based on the priorities assigned to market-oriented fields and social sciences. The Councils would consult with the Bank about these tentative allocations and proposed final allocations based on appraised proposals where there was significant variation from the indicative allocations. Finally, to ensure overall that the less mature disciplines which require the most strengthening in the new environment of a market oriented economy do not get crowded out by the claims of the most established and developed ones, at least one half of the resources in Components II and III would be allocated to sub-projects in market oriented and new interdisciplinary fields (see Annex 5 on Criteria and Procedures).

4.20 **During negotiations the Government gave assurances that it will follow procedures and criteria for selection and award of grant proposals acceptable to the Bank.**

4.21 **During negotiations the Government gave assurances that it would consult with the Bank about: (a) indicative allocations by field of study in higher education before each annual review of grant proposals, and (b) subsequent proposed allocations by field of study that deviate by more than 20 percent from these indicative allocations.**

4.22 As with all financial decisions in higher education, the Minister of Education decides on the final allocations. Regulations of the National Higher Education Financing Council provide that, in the event that the Minister rejects its advice on the distribution of the public budget for higher education, a justification must be offered in writing with a request to the National Higher Education Financing Council for re-consideration of its recommendation. Similarly, the regulations of the National University Research Council require the Minister to protect the integrity of the review process, abstain from intervening in particular funding decisions and to offer justification in writing for rejecting any recommendation on program allocations. These provisions would apply to the proposed grant awards under the Project.

D. Implementation of Sub-project Grants

1. Organization and Staffing

4.23 The Government has established: (a) the Higher Education Reform Program Implementation Unit; [15] and (b) the Higher Education Councils to manage the sector program. The roles of these institutions in implementation are described in the following paragraphs:

4.24 Higher Education Reform Program Implementation Unit. The main responsibility of this entity is to guide implementation of the higher education reform strategy as well as to coordinate donor support. The Secretary of State of the Ministry of Education is President of the Unit. Members include: (a) the presidents and vice presidents of the Higher Education Councils (National Council on Accreditation and Academic Evaluation, National Council for Attestation of Academic Titles and Degrees, National Higher Education Financing Council, and National University Research Council); (b) the three directors general of the Ministry of Education (for Higher Education, Pre-university Education, and Budgeting and Accounting); and (c) a representative from the European Center for Higher Education. The Unit is served by a permanent Secretariat with an Executive Secretary assisted by specialized and administrative staff. The Executive Secretary is designated as the chief administrative officer of the Unit, with overall day-to-day responsibility for coordinating the activities of the Higher Education Councils, the coordination of donor funds and technical assistance, and liaising with the Ministry of Education, institutions and donors involved in the program.

4.25 To monitor the implementation of the Bank-financed elements (Components II and III) of the sector program a Project Coordination Unit has been organized within the Department of Higher Education of the Ministry of Education (para 3.11 (d)). The Project Coordination Unit will: (a) provide advice on procurement to recipient institutions; (b) facilitate disbursement of Bank Loan and counterpart funds; (c) monitor project outcomes and supervise reporting, accounting and auditing; and (d) liaise with other departments of the Ministry of Education, other Romanian institutions, the Bank and other donors. The Executive Secretary of the Higher Education Reform Program Implementation Unit will be the Director of the Project Coordination Unit. He will also be assisted by a deputy to monitor the implementation of the European Union financed elements of the project (Component I). The staff of the Project Coordination Unit will comprise four professional and support staff including a procurement specialist with training in disbursement, a disbursement specialist qualified to assist in project procurement, and a secretary/translator to facilitate periodic reporting to relevant authorities and institutions including the Bank. The

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[15] This Unit is the former Consultative Group for Higher Education, Research and Technology which was established by Ministerial Order no. 10150 of June 1995, to prepare the higher education reform program.

Director and Procurement Officer of the PCU have been appointed. As necessary, consultants and other staff/specialists will be engaged on a part-time basis to carry out specific tasks (e.g., independent audits of project expenditure). The TOR of the PCU are included in the PIP.

4.26 **During Negotiations, the Government gave assurances that it will maintain the PCU with a sufficient number of qualified staff, adequate facilities, and authority satisfactory to the Bank.**

4.27 Higher Education Councils. The responsibilities of the Higher Education Councils in the sector program are to propose and apply national standards relating to the structure, quality and equivalence of academic programs, as well as to advise the Government on the allocation of funds for training and research activities. Within this framework, the Councils have responsibility for the implementation of the sector project which covers the entire competitive process of awarding grants for the development of higher education programs and research -- from establishing the objectives, priorities, and terms and conditions of the competitions for grants through the evaluation of the outcomes of completed sub-projects. The Higher Education Councils will ensure that sub-projects are implemented in accordance with the principles embodied in the grant agreements with recipient institutions.

4.28 Specifically: (a) the National Higher Education Financing Council will have overall responsibility for the implementation of Undergraduate Innovation Programs (Component II); (b) the National University Research Council will have implementation responsibility for Postgraduate Programs and Research (Component III). Because graduate programs combine teaching and research activities, the National University Research Council will implement Component III with the collaboration of the National Higher Education Financing Council; and (c) the National Council on Accreditation and Academic Evaluation and National Council for Attestation of Academic Titles and Degrees will collaborate with the Higher Education Financing and the National University Research Councils in implementing (a) and (b). The Research Council makes decisions on the academic merits of postgraduate and research proposals, and the Finance Council on their financial sustainability. The postgraduate programs are evaluated by the Councils for Accreditation and for Degrees. The Higher Education Financing and National University Research Councils will be assisted in their tasks by their respective Secretariats and independent Auditing Units. The Council Secretariats will coordinate with the Project Coordination Unit for monitoring progress on all facets of project implementation, and with the Auditing Units, on aspects related to the expenditure and accounting of project funds (Bank Loan and Government counterpart) with the Ministry of Education Budget Directorate.

4.29 The key project implementation responsibilities of the Councils include:

(a) the establishment of competition requirements, receipt and evaluation of sub-project proposals and award of grant funds;

(b) following each competition, at least annually, the review of sub-project outcomes, and of programs in collaboration with the National Council on Accreditation and Academic Evaluation. These annual reviews may include periodic inspections of the institutions' project-related work (e.g., for the Multi-user Center subcomponent, the National University Research Council would commission studies to monitor the training and research impact of the centers, including the volume of published research produced by staff and postgraduate students using the facilities);

(c) audit of expenditure of grant funds;

(d) evaluation of the implementation performance of the project component; and

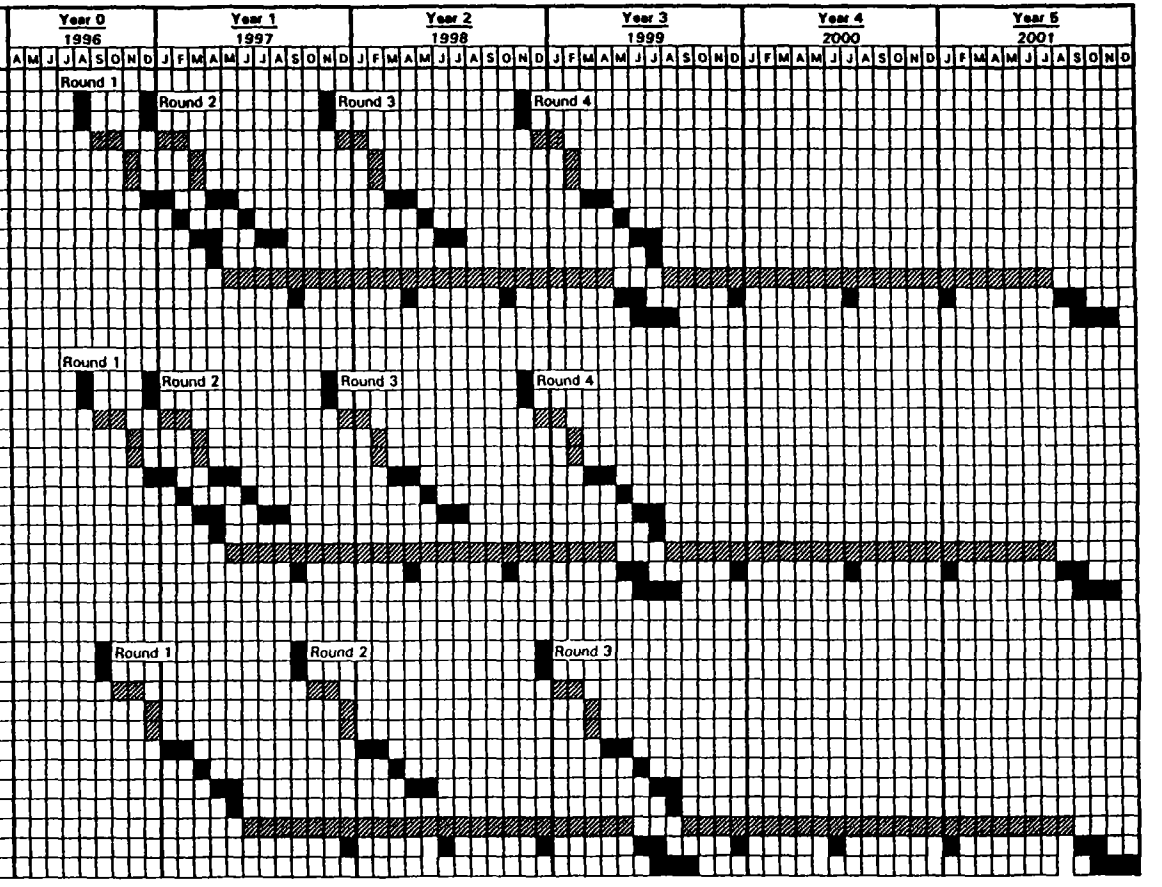
(e) preparation of financial and policy recommendations relevant to the project component.

2. Implementation Schedule

4.30 The Government's overall investment program would take place over five years from mid-1996 to end-2001. The proposed project covers commitments made during the first three years of the investment program. The European Union funded program of strengthening the systemic reform by supporting the Higher Education Councils (Component I) would take place over two years from 1997 to 1998. Under Components II and III, financed through the Bank loan, the first round of competitions would begin in late 1996 with the announcements calling for proposals from the higher education institutions. Thereafter, there would be three more rounds of competition in 1997,1998 and 1999. That would allow for the proposals funded in the last round of competition in 1999 to be completed by 2001. This is a feasible implementation schedule. Each year, the Bank and the Higher Education Councils would review the results of the sub-project selection process and how sub-projects are being implemented at the institutional level. The project implementation schedule is summarized in Chart 4.1 below and shown in detail in the Project Implementation Plan.

PROJECT IMPLEMENTATION SCHEDULE

DESCRIPTION of PROJECT ACTIVITY	Responsible Institution or Unit
COLLEGE PROGRAMS:	
Prepare competition requirements	HEFC-PC
Review accreditation of HEI /HEI programs	NCAAE
Prepare subproject proposals	HEI Units/Depts
Evaluate /select subproject proposals	HEI-REVCOM
Endorse/submit proposals to Higher Education Council	HEI Rector
Evaluate HEI proposals/recommend awards	EVAL/PC/CDC
Award grants to selected proposals	HEFC Board
Prepare initial grant fund release documents	HEFC-SEC
Process/release grant payments	PCU/MOE-BD
Subproject implementation period (only Rounds 1 & 4 shown) a/	HEI
Monitor subproject performance	HEFC-PC
Evaluate subproject outcomes	HEFC /NCAAE
UNIVERSITY PROGRAMS:	
Prepare competition requirements	HEFC-PC
Review accreditation of HEI /HEI programs	NCAAE
Prepare subproject proposals	HEI Units/Depts
Evaluate /select subproject proposals	HEI REVCOM
Endorse/submit proposals to Higher Education Council	HEI Rector
Evaluate HEI proposals/recommend awards	EVAL/PC/CDC
Award grants to selected proposals	HEFC Board
Prepare initial grant fund release documents	HEFC-SEC
Process/release grant payments	PCU/MOE-BD
Subproject implementation period (only Rounds 1 & 4 shown) a/	HEI
Monitor subproject performance	HEFC-PC
Evaluate subproject outcomes	HEFC /NCAAE
CONTINUING EDUCATION PROGRAMS	
Prepare competition requirements	HEFC-PC
Review accreditation of HEI /HEI programs	NCAAE
Prepare subproject proposals	HEI Units/Depts
Evaluate /select subproject proposals	HEI-REVCOM
Endorse/submit proposals to Higher Education Council	HEI Rector
Evaluate HEI proposals/recommend awards	EVAL/PC/CDC
Award grants to selected proposals	HEFC Board
Prepare initial grant fund release documents	HEFC-SEC
Process/release grant payments	PCU/MOE-BD
Subproject implementation period (only Rounds 1 & 3 shown) a/	HEI
Monitor subproject performance	HEFC-PC
Evaluate subproject outcomes	HEFC /NCAAE



Note:

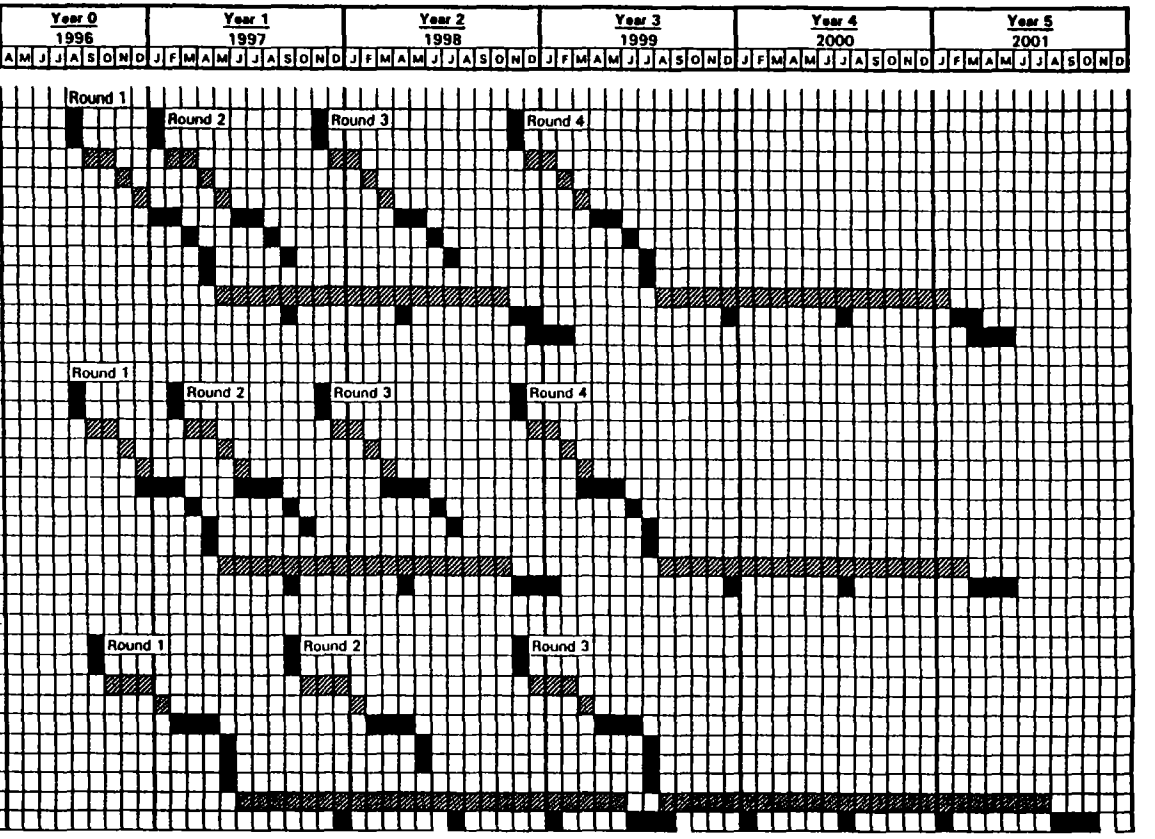
a/ Patterns and timing of subproject implementation and performance monitoring, evaluation and report preparation activities under are repeated for the second and third rounds of competition.

Acronyms:

- CAO *Chief Administrative Officer*
- CDC *Capital Grants Committee*
- EVAL *Evaluators/referees*
- EVC *Council Evaluation /Selection Committee*
- HEFC *Higher Education Financing Council*
- HEI *Higher education institution*
- IBRD *World Bank*
- MOE-BD *Ministry of Education Budget Directorate*
- NCAAE *National Council on Accreditation and Academic Evaluation*
- NCAATD *National Council for the Attestation of Academic Titles and Degrees*
- PC *Program Committee*
- PCU *Project Coordination Unit*
- REVCOM *HEI Review Committee*
- SEC *Secretariat to the Council*
- URC *University Research Council*

PROJECT IMPLEMENTATION SCHEDULE

DESCRIPTION of PROJECT ACTIVITY	Responsible Institution or Unit
POSTGRADUATE EDUCATION	
Prepare competition requirements	URC
Review accreditation of HEI /HEI programs	NCAAE/NCAATD
Prepare subproject proposals	HEI Units/Depts
Evaluate /select subproject proposals	HEI-REVCOM
Endorse/submit proposals to Higher Education Council	HEI Rector
Evaluate HEI proposals/recommend awards	EVAL/PC/CDC
Award grants to selected proposals	URC Board
Prepare initial grant fund release documents	URC-SEC
Process/release grant payments	PCU/MOE-BD
Subproject implementation period (only Rounds 1 & 4 shown) a/	HEI
Monitor subproject performance	URC-PC
Evaluate subproject outcomes	URC/NCAAE/NCAATD
MAJOR RESEARCH	
Prepare competition requirements	URC
Review accreditation of HEI /HEI programs	NCAAE/NCAATD
Prepare subproject proposals	HEI Units/Depts
Evaluate /select subproject proposals	HEI-REVCOM
Endorse/submit proposals to Higher Education Council	HEI Rector
Evaluate HEI proposals/recommend awards	EVAL/PC/CDC
Award grants to selected proposals	URC Board
Prepare initial grant fund release documents	URC-SEC
Process/release grant payments	PCU/MOE-BD
Subproject implementation period (only Rounds 1 & 4 shown) a/	HEI
Evaluate subproject outcomes	URC/NCAAE/NCAATD
MULTI-USER RESEARCH CENTERS	
Prepare competition requirements	URC
Review accreditation of HEI /HEI programs	NCAAE
Prepare subproject proposals	HEI Units/Depts
Evaluate /select subproject proposals	HEI-REVCOM
Evaluate HEI proposals/recommend awards	EVAL/PC/CDC
Award grants to selected proposals	URC Board
Prepare initial grant fund release documents	URC-SEC
Process/release grant payments	PCU/MOE-BD
Subproject implementation period (only Rounds 1 & 3 shown) a/	HEI
Evaluate subproject outcomes	URC



Note:

a/ Patterns and timing of subproject implementation and performance monitoring, evaluation and report preparation activities under are repeated for the other rounds of competition.

Acronyms:

CAO *Chief Administrative Officer*
CDC *Capital Grants Committee*
EVAL *Evaluators/referees*
EVC *Council Evaluation /Selection Committee*
HEFC *Higher Education Financing Council*
HEI *Higher education institution*
IBRD *World Bank*
MOE-BD *Ministry of Education Budget Directorate*
NCAAE *National Council on Accreditation and Academic Evaluation*
NCAATD *National Council for the Attestation of Academic Titles and Degrees*
PC *Program Committee*
PCU *Project Coordination Unit*
REVCOM *HEI Review Committee*
SEC *Secretariat to the Council*
URC *University Research Council*

3. Monitoring and Evaluation

4.31 Indicators. (See Annex 6 for details) Various types of data would be collected to indicate progress. These indicators would provide a framework for systematic monitoring of specific project investments and of the overall impact of implementation of the Government's reform strategy.

(a) Sector indicators would incorporate: (i) measures of the level and proportion of public expenditure dedicated to higher education; (ii) the distribution of public higher education expenditure between operating costs, capital investments, and allocations for student support and welfare; (iii) the sources and proportion of cost-recovery; (iv) participation rates, changes in the level and distribution of higher education enrollment between public and private institutions and for the different tiers of the higher education system; (v) the internal efficiency of institutions and academic programs; (vi) variations in student/staff ratios and unit costs; (vii) changes in the structure, requirements and content of academic programs; and (viii) measures of qualitative outcomes including changes in selectivity, pass rates, and employment of graduates.

(b) Key performance indicators for sub-projects supporting postgraduate education and academic research would include: (i) increased production of Masters and doctoral graduates; (ii) expansion of domestic and foreign collaboration in advanced scientific training and research activities; (iii) greater volume, co-authorship, and international visibility of published research; (iv) increased generation of competitive grant funding from domestic and from foreign sources, especially from projects funded by multi-user equipment grants; and (v) recruitment and retention of academic staff in higher education and other scientific institutions whose studies have been supported by project grants and fellowships.

(c) Outcome indicators would comprise, for sub-projects supporting undergraduate program innovations: (i) an increase in enrollments, retention and completion rates; (ii) a reduction in unit costs and costs per graduate; (iii) sustainability from institutional budgets and self-financing sources; and (iv) employment obtained, initial earnings, or further education either in Romania or abroad.

4.32 Progress Reporting. The progress under individual grants for program development, multi-user equipment and research would be monitored generally against benchmarks established in the accepted proposals. Progress would be monitored through: (a) semestral reports submitted by grantees and reviewed by the respective Councils; (b) quarterly financial reports submitted by grantees; (c) annual peer reviews and/or site visits by reviewers

appointed by the Councils; and (d) a final report submitted by grantees including a self-evaluation of accomplishments with respect to the original plan accepted.

(a) Semestral Progress Report. The Council Secretariats in collaboration with the Project Coordination Unit, will submit to the Bank consolidated semestral reports on the status of project implementation covering all project components, with an emphasis on: (i) current status of activities, development objectives, loan covenants and emergent issues; (ii) deviations (and reasons), if any, from the implementation plan and project targets; (iii) recommendations for actions and forward planning; (iv) summary of the grant activities including a list of grants awarded, expenditures, and other input and process indicators as shown in Annex 6; and (v) an updated implementation plan for the following year. An outline for routine progress reporting has also been designed in such a way as to encourage regular monitoring of project activities and availability of resources in advance of Bank supervision missions. These semestral progress reports would be submitted to the Bank by March 31 and September 30 of each project year.

(b) Implementation Completion Report. The project is expected to be completed by December 31, 2001. At the completion of the project, the Higher Education Reform Program Implementation Unit, assisted by the Project Coordination Unit and inputs from local specialists, will prepare an Implementation Completion Report (ICR) within six months of the Closing Date of the Loan. The ICR will summarize, inter alia: (i) program activities in terms of input, process and outcome indicators as listed in Annex 6; (ii) assessment of the Councils' effectiveness; (iii) sectoral overview of higher education and university research; (iv) project financial status; and (v) implementation issues, lessons learned, and recommendations.

4. Bank Supervision and Review

4.33 One of the explicit objectives of the project is to strengthen the capability of the Higher Education Councils in awarding development grants on the basis of agreed criteria and procedures. The prior review requirements by the Bank are intended to test the selection and award process rather than review the details of individual proposals. Consequently, before grant awards are formalized by the Minister of Education, the relevant implementing Council (National Higher Education Financing Council or National University Research Council) through the Project Coordination Unit will forward the evaluation results (proposed grant awards) to the Bank for its **prior (ex ante) review**. All competitions under programs supported by the project would be subject to **ex ante** evaluation, which would normally be carried out in the field during the final stages of the selection process (normally during May of each project year). This would encompass review of all sub-projects, regardless of size,

after selection by the relevant Higher Education Council, but prior to endorsement by the Minister and notification of awards. The evaluation would focus on observance of agreed criteria and procedures during the selection process. Specifically, the Bank review would aim to ensure adherence to:

(a) eligibility criteria (e.g., have programs recommended for funding received authorization in terms of accreditation? Were institutional development plans submitted and reviewed?, etc.)

(b) transparent project processing procedures (e.g., were guidelines for the generation of applications and for project review followed?)

(c) the integrity of the review process (e.g., does the recommended funding follow the ranking of sub-projects by the review panels of experts?)

(d) agreed priorities (e.g., do the recommended awards correspond to indicative allocations of funds across broad fields? If not, do the explanations of variance provide sufficient justification?)

(e) adequacy of funding recommended versus that requested. Explanations will be sought for significant discrepancies (i.e., 20 percent) between funding recommendations and agreed norms.

4.34 **During negotiations the Government gave assurances that it will review each year with the Bank a sample of about 100 grant applications and the overall process used for grant awards recommended by the councils before the submission of the recommended grant awards to the Minister of Education for final approval and will facilitate the Bank review of the procedures and criteria followed in arriving at the recommendations.**

4.35 Random checks on sub-projects would be made annually to ensure that they conform to agreed criteria and Bank procurement and disbursement policies. A comprehensive assessment of progress in achieving sectoral policy reform and project investment goals would be undertaken each year as part of normal Bank supervision, identifying any corrective actions to be undertaken. For that reason there is no need to provide for a mid-term review.

4.36 Supervision will require more intensive Bank input than usual, owing in part to the project's broad technical scope and the need for ***ex ante*** field reviews of proposed awards. The basis for Bank supervision will be the project monitoring reports and indicators, supplemented by a review of project expenditures and availability of financial resources. Supervision staff will need to include, in addition to a specialist in higher education reform and a project implementation specialist, periodic visits by specialists in higher education management and financing. The Human Resources Sector Project Officer of the Bank Resident Mission in Romania would undertake day-to-day interaction and follow-up with the Romanian authorities and project entities, and would probably be assigned formal responsibility for leadership of the Bank's task team after the project is underway.

V. COSTS, FINANCING, DISBURSEMENTS AND PROCUREMENT

A. Project Costs

5.1 Romania's higher education sector investment program (1996 to 2000) provides for capital funds to cover expenditures related to the integration of higher education programs with new policy initiatives. The investments include the upgrading of educational infrastructure, graduate program development, research and institution/capacity building, estimated at about US$215 million over the period 1996-2000. The proposed sector project accounts for about 39 percent of the total sector investment, targeted specifically for developing innovative undergraduate and graduate programs and higher education research. The project has been designed as a sector investment operation in which specific sub-projects have not been identified; thus, project costs do not provide for contingencies. The total project cost estimated at US$84.0 million equivalent (260.5 billion Romania Lei) is net of taxes and duties as investments in education are tax exempt by virtue of the Education Law. The total foreign exchange component is estimated as about US$51.4 million equivalent, or 61 percent of total project cost. The expected composition of the project costs are shown in Tables 5.1, 5.2 and 5.3 below. Detailed cost estimates are shown in the Project Implementation Plan.

Table 5.1: Project Cost Summary by Component

	(Lei Billion)			(US$ Million)			% Foreign Exchange	% Total Base Costs
	Local	Foreign	Total	Local	Foreign	Total		
1. Management Capacity Improvement	13.2	31.1	44.3	4.3	10.0	14.3	70	17
2. Undergraduate and Continuing Education Programs	36.3	49.3	85.6	11.7	15.9	27.6	58	33
3. Postgraduate Education Programs and Research Centers	51.5	79.0	130.5	16.6	25.5	42.1	61	50
Total BASELINE COSTS	101.1	159.4	260.5	32.6	51.4	84.0	61	100
Physical Contingencies	-	-	-	-	-	-	-	-
Price Contingencies	-	-	-	-	-	-	-	-
Total PROJECT COSTS	101.1	159.4	260.5	32.6	51.4	84.0	61	100

Note: Amounts may not add up to exact totals due to rounding.

Table 5.2: Expenditure Accounts by Component

(US$ Million)

	Management Capacity Improvement	Undergraduate and Continuing Education Programs	Postgraduate Education Programs and Research Centers	Total
I. Investment Costs				
A. College Programs /a	-	7.0	-	7.0
B. Continuing Education Programs /a	-	6.7	-	6.7
C. University Programs /a	-	13.9	-	13.9
D. Post-Graduate Programs /a	-	-	14.4	14.4
E. Multi-User Centers /a	-	-	14.1	14.1
F. Major Research Programs /a	-	-	13.7	13.7
G. Institutional Strengthening/Training	4.4	-	-	4.4
H. Equipment and Software	7.5	-	-	7.5
Total Investment Costs	11.9	27.6	42.1	81.6
II. Recurrent Costs				
A. Local Staff Salaries	1.8	-	-	1.8
B. Program Support and Non-salary Operational Costs /b	0.6	-	-	0.6
Total Recurrent Costs	2.4	-	-	2.4
Total BASELINE COSTS	14.3	27.6	42.1	84.0
Physical Contingencies	-	-	-	-
Price Contingencies	-	-	-	-
Total PROJECT COSTS	14.3	27.6	42.1	84.0
Taxes	-	-	-	-
Foreign Exchange	10.0	15.9	25.5	51.4

\a Program content includes equipment, in-country/external training, national/foreign specialist services, reference books/software and upgrading of facilities.

\b Eligible expenditures: office materials/supplies, telecommunications, internal travel costs, incidental contractual services

Table 5.3: Expenditure Accounts Project Cost Summary

	(Lei Billion)			(US$ Million)			% Foreign	% Total Base
	Local	*Foreign*	*Total*	*Local*	*Foreign*	*Total*	*Exchange*	*Costs*
I. Investment Costs								
A. College Programs /a	9.1	12.6	21.7	2.9	4.1	7.0	58	8
B. Continuing Education Programs /a	8.0	12.8	20.8	2.6	4.1	6.7	61	8
C. University Programs /a	19.2	23.9	43.1	6.2	7.7	13.9	55	17
D. Post-Graduate Programs /a	18.3	26.2	44.5	5.9	8.4	14.4	59	17
E. Multi-User Centers /a	13.3	30.5	43.7	4.3	9.8	14.1	70	17
F. Major Research Programs /a	20.0	22.4	42.3	6.4	7.2	13.7	53	16
G. Institutional Strengthening/Training	5.3	8.3	13.6	1.7	2.7	4.4	61	5
H. Equipment and Software	1.2	22.1	23.3	0.4	7.1	7.5	95	9
Total Investment Costs	94.3	158.6	253.0	30.4	51.2	81.6	63	97
II. Recurrent Costs								
A. Local Staff Salaries	5.7	-	5.7	1.8	-	1.8	-	2
B. Program Support and Non-salary Operational Costs /b	1.1	0.7	1.8	0.4	0.2	0.6	40	1
Total Recurrent Costs	6.7	0.7	7.5	2.2	0.2	2.4	10	3
Total BASELINE COSTS	101.1	159.4	260.5	32.6	51.4	84.0	61	100
Physical Contingencies	-	-	-	-	-	-	-	-
Price Contingencies	-	-	-	-	-	-	-	-
Total PROJECT COSTS	101.1	159.4	260.5	32.6	51.4	84.0	61	100

Note: Amounts may not add up to exact totals due to rounding.

\a Program content includes equipment, in-country/external training, national/foreign specialist services, reference books/software, and upgrading of facilities.

\b Eligible expenditures: office materials/supplies, telecommunications, internal travel costs, incidental contractual services

5.2 Basis of Cost Estimates. The indicative allocations for each project subcomponent were based on priorities assigned to market-oriented fields such as management, accountancy, finance, banking, etc., and to social sciences.

5.3 The costs were derived as follows: [16]

(a) The costs of elements under Component I are based on the European Union's detailed assessment of the capacity building (specialist services and training) requirements of the management of the Higher Education Councils and institutions, and the appropriate equipment and software needed to upgrade the management information systems of these institutions. Also included are the costs of the staffing and operational needs of the Secretariats of the Higher Education Councils, the Ministry of Education Budget Directorate, and the Project Coordination Unit to enable these units to carry out their implementation and coordination functions effectively. Estimates of salary and non-salary operational costs are consistent with current Government practices. The appraisal mission found these estimates to be reasonable.

(b) The costs of elements under Components II and III were based on the expected number and average size of seed and main program grants awarded during the four-year commitment period for higher education development and research sub-projects and programs. These sub-projects/programs would be supported by Grants financed by the project, and awarded through annual rounds of competition in accordance with agreed criteria and procedures described above (paras 4.10 - 4.12). The amounts of the grants were based on: (1) expected categories of support (i.e., research, locally funded specialist services, staff training in-country and abroad, laboratory/research equipment, software and library acquisitions, materials and consumables, upgrading of educational and research facilities, and development costs) based on experience [17] with ongoing pilot/seed sub-projects; (2) expected levels

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16 Costs shown in Romanian Lei result from converting US dollar estimates at the official exchange rate of 3100 Lei/US$1.00 (July 1996).

17 Two rounds of competition for grants have been undertaken by the Higher Education Councils. In January 1995, the National University Research Council (NURC) launched a first competition for small grants (up to US$5,000) for researchers. NURC received 1,745 applications which were reviewed and ranked by six disciplinary panels assisted by external

of competition; and (3) the student enrollment in higher education institutions. Grants for seed sub-projects (aggregate US$6.8 million) would range from US$5,000-US$25,000, while main program grants (aggregate US$62.9 million) would range from US$25,000-US$500,000. About 600 seed grants and 360 main program grants are expected to be awarded during the four-year commitment period under the project.

(c) Foreign Exchange Component. The total estimated direct and indirect foreign exchange component (US$51.4 million equivalent) would constitute about 61 percent of total project cost. The foreign exchange requirements of each type of program were based on expected relative weights of expenditure categories (locally funded specialist services, staff training, equipment, books and software, upgrading of facilities) that on the average, make up each grant proposal, and are as follows: (i) College Education Grants, 60 percent; (ii) Continuing Education Grants, 62 percent; (iii) University Program Grants, 57 percent; (iv) Post-graduate Program Grants, 61 percent; (v) Multi-user Center Grants, 73 percent; and (vi) Major Research Grants, 55 percent. The calculations of the foreign exchange component are shown in the Project Implementation Plan.

(d) Taxes. Total project cost estimates do not include local taxes and duties. Expenditures for goods, services and works in the education sector are exempted under the Education Law from import duties and local and value added taxes. Should any of the items now assumed to be tax-exempt become subject to the payment of taxes and duties during the life of the project, adequate supplementary resources to pay these dues will be made available by the Ministry of Finance to the Ministry of Education in a timely fashion.

(e) Recurrent Costs. The total project cost includes recurrent costs and these relate to: (i) expenditures (US$1.8 million equivalent) for project administration in the form of salaries of additional staff of the Secretariat of the Higher Education Council, the Ministry of Education Budget Directorate, and the Project Coordination Unit, as well as

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reviewers, and using selection criteria and procedures used by research funding bodies. The second round was initiated in December 1995, and NURC completed final allocation of awards by April 1996, taking into consideration the complexity of applications and the extent of team/network collaboration, while respecting the recommendations of Selection Committees. A third round of competitions is scheduled in October 1996.

related non-salary operational costs for these units; and (ii) incremental costs (US$0.6 million equivalent) associated with the program development, research grants and fellowships (funded by the European Union under Component I) which will need to be sustained after project completion. Incremental recurrent costs associated with program development investments will be financed on a declining basis from institutional base budgets while the grants and fellowship programs administered by the National University Research Council will be sustained from increasing the state budget allocation for university research.

5.4 Sustainability. The ***institutional stability*** of the project has been assured by the 1995 enactment of the Education Law which, *inter alia*, calls for strengthening the management of higher education at both system and institutional levels, devolves professional and policy functions to intermediary councils, and decentralizes authority to the individual institutions as part of their academic and financial autonomy. At the system level, all of the intermediary councils have been established -- the National Council for Academic Accreditation and Evaluation, the National Council for Attestation of Academic Titles and Degrees, the National Higher Education Financing Council, and the National University Research Council -- and are operational. Various measures are also in place to ensure the ***financial sustainability*** of the higher education system. In 1993 the Ministry of Education introduced a quota system to allow for partial cost-recovery, enabling public higher education institutions to admit additional students at full cost. In 1995 Government abolished the "Special Fund" in the education budget, thereby allowing public higher education institutions to collect and retain fees collected from foreign and Romanian students and to keep other income generated by self-financing activities. There is strong evidence of capacity and willingness to pay for higher education, not only in the fees paid by extra-quota Romanian students in public universities, but from the vigorous growth of fully self-financing private higher education during the past five years. The operating costs under the project (about US$2.4 million per annum) represent only about 1.3 percent of 1996 current expenditure for higher education and are deemed sustainable. Furthermore, the budgetary process itself ensures that counterpart funding from the higher education institutions' budgets will be available.

B. Administration of Loan Funds

5.5 Financing Plan. The total project cost of US$84.0 million equivalent would be financed by: (a) a World Bank Loan of US$50.0 million covering 60 percent of total project

costs (net of taxes); (b) a Grant from the European Union [18] of US$9.6 million equivalent, representing 11 percent of total costs; and (c) Government counterpart of US$24.4 million equivalent to cover the remaining balance of 29 percent (Table 5.4). Tables 5.5 and 5.6 illustrate the disbursement shares of the Government, the Bank and the European Union by project component and by program category.

Table 5.4: Local/Foreign Financing

(US$ Million)

	The World Bank		European Union		The Government		Total	
	Amount	%	Amount	%	Amount	%	Amount	%
I. Foreign	41.4	80.5	9.6	18.7	0.4	0.9	51.4	61.2
II. Local (Excl. Taxes)	8.6	26.5	-	-	24.0	73.5	32.6	38.8
III. Taxes	-	-	-	-	-	-	-	-
Total Project	50.0	59.5	9.6	11.4	24.4	29.1	84.0	100.0

Table 5.5: Components by Financiers

(US$ Million)

	The World Bank		European Union		The Government		Total		For. Exch.	Local (Excl. Taxes)	Duties & Taxes
	Amount	%	Amount	%	Amount	%	Amount	%			
1. Management Capacity Improvement	-	-	9.6	67.1	4.7	32.9	14.3	17.0	10.0	4.3	-
2. Undergraduate and Continuing Education Programs	19.5	70.5	-	-	8.2	29.5	27.6	32.9	15.9	11.7	-
3. Postgraduate Education Programs and Research Centers	30.5	72.5	-	-	11.6	27.5	42.1	50.1	25.5	16.6	-
Total Disbursement	50.0	59.5	9.6	11.4	24.4	29.1	84.0	100.0	51.4	32.6	-

Note: Amounts may not add up to exact totals due to rounding.

[18] Includes Grants from EU-PHARE, EU-TEMPUS, EU-SOCRATES AND EU-LEONARDO Programs.

Table 5.6: Disbursement Accounts by Financiers

(US$ Million)

	The World Bank		European Union		The Government		Total		For.	Local (Excl.	Duties &
	Amount	%	Amount	%	Amount	%	Amount	%	Exch.	Taxes)	Taxes
1. College Program Grants	5.0	70.9	-	-	2.0	29.1	7.0	8.3	4.1	2.9	-
2. Continuing Education Program Gran	4.9	73.1	-	-	1.8	26.9	6.7	8.0	4.1	2.6	-
3. University Program Grants	9.6	69.0	-	-	4.3	31.0	13.9	16.5	7.7	6.2	-
4. Post-Graduate Program Grants	10.2	71.3	-	-	4.1	28.7	14.4	17.1	8.4	5.9	-
5. Multi-User Center Grants	11.1	78.9	-	-	3.0	21.1	14.1	16.8	9.8	4.3	-
6. Major Research Grants	9.2	67.2	-	-	4.5	32.8	13.7	16.2	7.2	6.4	-
7. Management of HECs	-	-	0.5	54.3	0.5	45.7	1.0	1.2	0.6	0.4	-
8. Management of HEIs	-	-	2.0	56.7	1.5	43.3	3.5	4.2	2.1	1.5	-
9. Management Information Systems	-	-	7.0	95.0	0.4	5.0	7.4	8.8	7.0	0.4	-
10. Project Administration	-	-	-	-	2.3	100.0	2.3	2.8	0.4	2.0	-
Total	50.0	59.5	9.6	11.4	24.4	29.1	84.0	100.0	51.4	32.6	-

5.6 Allocation of the Loan Proceeds. The Bank Loan would be allocated in the manner shown in Table 5.7. As project costs have no provisions for contingencies, there are no funds reserved in an unallocated disbursement category.

Table 5.7: Allocation of Loan Proceeds

Category	Description	Amount (US$mln)	Bank Financing percent
1	University Programs	9.6	70 percent of total grant
2	College Programs	5.0	70 percent of total grant
3	Continuing Education 4.9		70 percent of total grant
4	Postgraduate Education Programs	10.2	70 percent of total grant
5	Major Research	9.2	70 percent of total grant
6	Multi-User Center	11.1	79 percent of total grant
	Total Loan	50.0	

5.7 Disbursements. The disbursement profile of the project departs significantly from the longer regional disbursement profile for education projects, and is indicative of the advanced state of project preparation and the experience (see footnote 14) already gathered by the Higher Education Councils and Ministry of Education in applying competitive selection criteria in the framework of competitive peer-review selection procedures. The project has been designed within the capacity of the Higher Education Councils to execute over a period

of three years (and the recipient higher education institutions to complete within four years). The Loan proceeds are expected to be fully disbursed within five and one-half years (eleven semesters) after Board Approval. The Closing Date will be June 30, 2002. Disbursements estimated for the first semester of project implementation are based on the proposed initial deposit (US$2.25 million) into the Special Account. The semestral funding requirements are shown below in Table 5.8.

Table 5.8: Disbursements by Semester and Government Cash Flow
(US$ Million)

	The World Bank Amount	European Union Amount	Gov't Amount	Project Cost Amount
1	2.2	-	0.9	3.1
2	2.3	2.4	1.3	6.0
3	2.7	2.4	1.4	6.5
4	3.0	2.4	3.0	8.4
5	5.8	2.4	3.2	11.4
6	7.3	-	3.1	10.4
7	7.3	-	3.1	10.4
8	6.7	-	2.8	9.5
9	6.7	-	2.8	9.5
10	3.0	-	1.4	4.4
11	3.0	-	1.4	4.4
Total	50.0	9.6	24.4	84.0

5.8 All disbursement of project funds, including the Bank Loan and the Government counterpart will be under the overall supervision of the Ministry of Education's Director General of the Budget, and monitored under the direction of the Director of the Project Coordination Unit. Disbursements will be made on the basis of Statements of Expenditure (SOE) certified by the Director General of the Budget and the PCU Director. This SOE form would also state that all subgrants related to these SOE expenditures had been awarded in accordance with criteria and procedures agreed with the bank. All documentation supporting SOEs will be retained by the Project Coordination Unit for at least one year after receipt by the Bank of the audit report for the year in which the last disbursement was made. This documentation would be made available for review by the auditors and by visiting Bank staff upon request.

5.9 Special Account and Project Account. To facilitate timely project implementation, the Government will establish, maintain and operate, under terms and conditions acceptable to the Bank, a ***Special Account*** denominated in US Dollars, in a bank acceptable to the Bank, to be used under the direction of the Director General of the Budget in MOE, and following established procedures. Upon Loan Effectiveness and confirmation of the establishment of the Special Account, the Bank will deposit into the Special Account, the Authorized

Allocation (US$4.5 million) representing the estimated average disbursements for a three-month period for the Bank-financed expenditures. At the start of the project, the Special Account deposit will be limited to US$2.25 million, and the remaining portion of the Authorized Allocation will be disbursed upon request when the aggregate amount of withdrawals from the Loan Account plus the total amount of all outstanding Special Commitments entered into by the Bank shall be equal to or exceed the equivalent of US$4.5 million.

(a) Applications for replenishment of the Special Account would be submitted on a monthly basis or when one half of the amount deposited had been withdrawn, whichever occurred earlier, and must include reconciled bank statements as well as other appropriate supporting documents.

(b) All other applications for direct payment, special commitment or reimbursement should be for amounts not less than 20 percent of the initial deposit of the authorized allocation to the Special Account or not less than 20 percent of the full authorized allocation once available.

(c) Submission of replenishment applications takes precedence over the minimum size application as stated in (b) above.

(d) A ***Project Account*** in Romania Lei, will also be established under the general direction of the Director General of the Budget, to finance expenditures to be covered by Government counterpart financing. Disbursements on grants extended to the institutions would be effected simultaneously from the Special and Project Accounts in the respective financing ratios derived from Table 5.7.

5.10 Accounting and Auditing. Each grant recipient will be required to establish a separate account and separate financial records to receive the grant funds and reflect disbursements related to the implementation of its accepted program proposal. The day-to-day monitoring of the recipients' accounts and records will be done by the Auditing Units of the Higher Education Councils, which will report periodically (or in accordance with the timetable for audits stipulated in the Grant Agreement between the Councils and the recipient institutions) to the Ministry of Education Budget Directorate and the Project Coordination Unit on their status. The Ministry of Education Budget Directorate and the Project Coordination Unit will set up project accounts and financial records for all project-related expenditures. All these accounts and records would be maintained in conformity with accepted international accounting practices. The recipient institution's grant account, the Special Account as well as the Project Account, will be audited in accordance with the Bank *"Guidelines for Financial Reporting and Auditing of Projects Financed by the World Bank"* (March 1982). The Project Coordination Unit will provide the Bank, within six months of the end of each Government fiscal year, with an audit report of such scope and detail as the Bank may reasonably request, including a separate opinion by the auditor on disbursements against

certified SOEs. The separate opinion should mention whether the SOEs submitted during the fiscal year, together with the procedures and internal control involved in their preparation, can be relied upon to support the related withdrawal applications.

C. Procurement

5.11 Overview. The procurement arrangements under the project are tailored to meet the development requirements and implementing capacity of the beneficiary institutions, and the procedural requirements of the funding agencies. Under Component I which is cofinanced by the European Union and the Government, the items to be procured consist of discrete goods and services including: consulting services, external/local training/study tours, goods and equipment for project administration, non-salary operational cost items (i.e. materials, supplies, incidental contractual services, communication), and salaries of incremental staff. These goods and services (aggregate US$9.6 million equivalent) would be procured according to procedures agreed between the Government and the European Union.

5.12 Under Components II and III which are co-financed by the Bank and the Government, the project will finance demand-driven higher education development and research sub-projects/programs (aggregate US$69.7 million) for which grant funds would be awarded to higher education institutions and research entities in accordance with competitive selection procedures and evaluation criteria agreed with the Bank. Grant funds would be awarded for six program categories: (a) short-cycle College Programs; (b) long-cycle University Programs; (c) Continuing Education Programs including a study to develop a continuing education strategy; (d) Postgraduate Programs; (e) development of Multi-User Research Centers; and (f) Major Research. It is estimated that about 360 main program grants (US$62.9 million aggregate, grants ranging from US$25,000-US$500,000) and about 600 seed grants (US$6.8 million aggregate, grants ranging from US$5,000-US$25,000) would be awarded during the five-year project implementation period. Proposals for research or programs that directly benefit industries such as tobacco, asbestos, etc., as well as those that could have a negative effect on the environment would not be eligible for Bank financing. Arrangements for the award of Grant Agreements to sub-projects/programs are summarized below (Table 5.9).

Table 5.9 Procurement Arrangements

(US$ Million)

	Procurement Method		
	Competitive Selection	N.B.F.	Total
A. College Program Grants /a	7.0	-	7.0
	(5.0)		(5.0)
B. Continuing Education Program Grants /a	6.7	-	6.7
	(4.9)		(4.9)
C. University Program Grants /a	13.9	-	13.9
	(9.6)		(9.6)
D. Post-Graduate Program Grants /a	14.4	-	14.4
	(10.2)		(10.2)
E. Multi-User Center Grants /a	14.1	-	14.1
	(11.1)		(11.1)
F. Major Research Grants /a	13.7	-	13.7
	(9.2)		(9.2)
G. Office Equipment, Computers and Software	-	7.5	7.5
H. Institutional Strengthening/Training	-	4.4	4.4
I. Salaries of Local Staff	-	1.8	1.8
J. Program Support and Operational Costs /b	-	0.6	0.6
Total	69.7	14.3	84.0
	(50.0)	-	(50.0)

Note: Figures in parenthesis are the respective amounts financed by The World Bank
\a Competitive selection in accordance with procedures and criteria agreed with the Bank
\b Eligible expenditures: office materials/supplies, telecommunications, internal travel costs, and incidental contractual services

5.13 Evaluation Criteria and Grant Award Procedures. The selection of sub-projects under Components II and III for grant funding would pass through two levels of review before final award of grant funds: (a) internal evaluation at the level of the applicant institution; and (b) evaluation at the level of the Higher Education Councils. The procedures and evaluation criteria applied are in greater detail in the Project Implementation Plan.

5.14 Bank Review of Grant Awards. The Bank review of grant awards will focus on observance of agreed criteria and procedures during the selection process. The Bank would review about 100 sub-projects each year as part of the prior review, including both accepted and rejected sub-projects. The sub-projects to be reviewed would be selected by the Bank so as to give a representative sample of sub-project applications across the main subject fields. The Bank review would take place after selection by the Higher Education Councils, but

prior to the endorsement of the selected programs/researches by the Minister of Education and the announcement of Grant awards.

5.15 Procurement by Grant Recipients. It is not possible to anticipate or predetermine the types, quantities and timing of the procurement of goods and services that could make up the approved proposals for educational development and research grant funding. Thus, it would neither be practical nor feasible to centralize procurement responsibility or activity at the level of the Councils or the Higher Education Reform Program Implementation Unit. Consequently, each grant recipient institution would be responsible for the procurement of the expenditure items described in its program/research proposal accepted by the Councils. Nevertheless, wherever feasible, the Project Coordination Unit will encourage grant recipients to consolidate the procurement of their needs with that of other awardees, such that it may be possible to group similar requirements (e.g. computer hardware, software and books) into larger bid packages. Such possibilities could result in obtaining more advantageous conditions of delivery, services and maintenance from manufacturers/suppliers, as well as savings to the institutions from economy of scale.

5.16 The Grant Agreements between institutions and the Higher Education Councils would stipulate the acceptable procurement arrangements to be employed by the grant recipients. These arrangements are described in detail in the Project Implementation Plan, and are summarized below. For the same reasons cited above in para 5.15, it would not be useful or practical to prescribe aggregate thresholds by type of procurement procedure used:

(a) For Goods: *International Competitive Bidding* procedures for goods estimated to cost US$300,000 equivalent or more per contract; *International Shopping* procedures for goods contracts estimated at less than US$300,000, on the basis of price quotations obtained from at least three suppliers from two eligible countries; *National Shopping* procedures for goods estimated to cost under US$50,000 per contract based on quotations obtained from at least three local suppliers; *Limited International Bidding* for items of a specialized nature; and *Direct Contracting* for proprietary items (e.g. books, reference materials, software, equipment spare parts). Procurement of goods should be consistent with the provisions of the Bank "*Guidelines for Procurement Under IBRD Loans and IDA Credits*," January 1995, revised January 1996 (the Procurement Guidelines)

(b) For Works contracts: *National Competitive Bidding* procedures for contracts below US$500,000 equivalent. Award of works contracts below US$100,000 would be based on the lowest evaluated offer from at least three local contractors. Procurement of works should be consistent with the Bank Procurement Guidelines.

(c) For Consulting Services: competitive selection process based on shortlisting of consultants/firms for contracts estimated at more than US$50,000, and consistent with the Bank "*Guidelines for the Use of Consultants by World Bank Borrowers and by the World Bank as Executing Agency*," August 1981.

5.17 The Project Coordination Unit will extend procurement advice to the higher education institutions/grant recipients as appropriate/needed, including assistance in adapting the Bank's Standard Bidding Documents for the procurement of goods and consulting services. At appraisal, draft competition announcements, instructions for preparing proposals, Grant Agreements, as well as the procedures for institutional and Higher Education Council evaluation of proposals, were reviewed by the Bank and found satisfactory. These model documents are included as annexes to the Project Implementation Plan. The Project Coordination Unit will monitor the conduct of procurement under the Grant Agreements for consistency with Bank practice. The Procurement Plan (Table 5.10) shows indicative values, aggregation and timing of procurement of goods, works and services that could make up the program proposals financed by the project.

Table 5.10 Procurement Plan

Procurement Package	Number of Grants	Total Cost US$000	Method of Procurement	Schedule of Grant Competitions (Round 1)			
				Issue of Documents	Receipt of Proposals	Award of Grants	Agreement Signature
1 *College Program Innovation*							
Seed Grants	100	$1,000	CS1	Aug-96	Nov-96	Feb-97	Feb-97
Main Program Grants	60	$6,000	CS1	Aug-96	Nov-96	Feb-97	Feb-97
2 *University Program Innovation*							
Seed Grants	133	$2,000	CS1	Aug-96	Nov-96	Feb-97	Feb-97
Main Program Grants	119	$11,900	CS1	Aug-96	Nov-96	Feb-97	Feb-97
3 *Continuing Education*							
Seed Grants	35	$700	CS1	Sep-96	Dec-96	Mar-97	Mar-97
Main Program Grants	20	$6,000	CS1	Sep-96	Dec-96	Mar-97	Mar-97
4 *Postgraduate Program Development*							
Seed Grants	150	$750	CS1	Aug-96	Nov-96	Mar-97	Mar-97
Main Program Grants	68	$13,600	CS1	Aug-96	Nov-96	Mar-97	Mar-97
5 *Multi-User Center*							
Seed Grants	40	$1,000	CS1	Sep-96	Jan-97	Mar-97	Apr-97
Main Program Grants	44	$13,100	CS1	Sep-96	Jan-97	Mar-97	Apr-97
6 *Major Research*							
Seed Grants	135	$1,350	CS1	Aug-96	Nov-96	Mar-97	Mar-97
Main Program Grants	51	$12,300	CS1	Aug-96	Nov-96	Mar-97	Mar-97
TOTAL COST		**$69,700**					

	Number	Cost
Total Seed Grants	593	$6,800
Total Main Program Grants	362	$62,900

Probable Breakdown of Above Subproject Grants into Procurement Expenditure Items (i.e. Goods, Services, Works)	No. of Procurement Packages	Total Cost US$000	Method of Procurement	Schedule of Key Procurement Activities a/			
				Issue of Documents	Receipt of Bids	Award of Bids	Contract Signature
Educational/Laboratory/Office Equipment							
Packages > US$300,000	none						
Packages : US$50,000-US$300,000	214	$18,960	IS/LIB	May-97	Jul-97	Aug-97	Sep-97
Packages < US$50,000	741	$11,440	NS	Apr-97	May-97	Jun-97	Jul-97
Fellowships/Study Tours/Training	630	$17,570	CS	n.a.	n.a.	n.a.	Aug-97
Locally Funded Specialists	912	$7,485	CS	Mar-97	n.a.	n.a.	May-97
Books/Publications/Software/Materials	955	$10,225	Direct	Apr-97	May-97	Jun-97	Jul-97
Civil Works/Building Upgrading	274	$4,020	LCB	Aug-97	Oct-97	Nov-97	Dec-97
TOTAL COST		**$69,700**					

a/ Procurement under subprojects awarded during first round of competitions only

LEGEND:

CS Competitive Selection in accordance with the Bank's Consultant Guidelines.
CS1 Competitive Selection according to procedures and criteria agreed with the Bank.
LIB Limited International Bidding.
IS International Shopping for contracts below US$300,000.
NS National Shopping for contracts below US$50,000.
LCB Local Competitive Bidding
DC Direct contracting for proprietary items
ADM By Administration

VI. BENEFITS AND RISKS

A. Benefits

6.1 The policy conditions and project investments under the proposed project would have multiple outputs and multiple benefits. First, the proposed project would counter past neglect of investment in curricula, teaching materials, staff training and teaching equipment. It would stimulate widespread innovation from the "grassroots" of the academic community, i.e., from individual academics, departments and faculties. The development grants to be supported under the project would lead to new types of training programs and better quality of existing programs. In addition, specified systemic reforms -- such as the introduction of the credit-hour system of academic accounting or development of shortened programs and continuing education -- would enhance the flexibility of deployment of resources within the system. The immediate output would be graduates trained in more relevant subjects for a market economy and an across-the-board raising of educational quality. The benefits of these improved outputs from the system would be substantial numbers of people trained to standard in the skills required for a market economy, leading to increased productivity, more rapid labor redeployment and greater flexibility in redeployment of resources in higher education in response to shifts in demand.

6.2 Second, the proposed project would strengthen private education in two ways. A specific output of the project would be increased supplies of qualified teaching personnel, particularly in market-oriented fields, thereby relieving one of the main supply constraints on expansion of private education. In addition, accredited private institutions would have equal access to development funds under the project to start or reinforce program innovations. The benefit would be greater quality and student choice in the system through a strengthened and competitive system of higher education, including the ability to command even higher levels of cost recovery.

6.3 Third, the proposed project would make a major impact on the allocation of resources within higher education. Recurrent expenditures would be allocated according to enrollment-based norms and average unit costs by field of study. Development expenditures would be awarded by intermediary organizations on the basis of competitive grants according to agreed criteria and procedures. Individual higher education institutions would establish procedures for internal review of priorities and would apply for capital grants on the basis of institutional development plans. These procedures would achieve more efficient use of resources within higher education, and would tend to reduce unit recurrent costs per student. In effect, more could be done within the existing envelope of resources. The procedures would enable funds to follow students, eliminate distortions in present expenditure patterns, e.g., overfunding of technical fields at the expense of newly expanding market-oriented fields, and would also help narrow the current extreme variance in per student recurrent costs.

6.4 Fourth, the proposed project would contribute to the strengthening of institutional capacity within higher education. Intermediary organizations would experience growth through the process of establishing priorities and awarding grants through competition on the basis of explicit rational criteria. Higher education institutions would receive assistance in preparing development plans and establishment of information systems for better management of student and academic resources. The benefit would be to reinforce decentralization of the system, and ensure that decisions are taken effectively at the lowest levels. A capacity to sustain and build on system-wide reforms would be maintained well into the 21st century. Modernization and strengthening of higher education would facilitate realization of Romania's goal of eventual integration with the EU.

B. **Risks**

6.5 First, major reform of higher education systems has proved to be politically and economically sensitive in most countries. Success requires broad consensus of major stakeholders. The broad participation and wide consultations employed by Romanian authorities in the development of these higher education reform programs should help to minimize the inevitable political risks inherent in the reforms.

6.6 Second, the number of small grant proposals to be processed, approved and supervised may impose an unworkable administrative burden on inexperienced organizations. To counter this risk the project has required that sufficient staff resources be added to the organizations and that a project coordination unit be established specifically to look after loan administration. Moreover, the procedures for grant selection have been tested in the previous round of research grant proposals, and were found to be feasible. Despite these preparations, it is impossible to know with certainty in advance how the organizations will perform. The matter of administrative workload must be kept under careful review during project execution so as to identify problems and take remedial action promptly.

6.7 Third, the project assumes that the increased quality output from postgraduate studies will eliminate the teacher supply constraints on expansion of private education and on the quality and numbers of teaching staff in public institutions. However, the actual employment of graduates in the teaching profession will depend on the incentives for such work at the time, including salary and other benefits. These incentives will have to be sufficiently attractive for the intended benefits of the project to be realized. Developments towards an effective Teacher Statute, part of the Government's policy objectives, is critical to success and will be kept under review during project execution.

6.8 Finally, there is a risk that the Councils will approve grant proposals of relatively low quality or with superficial innovations, i.e., that the agreed criteria would not be sufficiently adopted and practiced. There is also a risk that grant funds would be diluted and dispersed across excessive numbers of sub-projects such that impact is dissipated and diffused. Careful strategic selection of priorities would be required, along with periodic careful monitoring of performance, to avoid these risks.

VII. AGREEMENTS REACHED AND RECOMMENDATION

7.1 **During Negotiations**, the Government gave assurances that it will:

(a) maintain its commitment to the measures in the sector policy matrix agreed at appraisal, and consult with the Bank annually in the execution of intended measures and any changes in the policy (para. 3.7);

(b) will maintain the Higher Education Councils and the PCU with a sufficient number of qualified staff, adequate facilities, and authority satisfactory to the Bank (para. 4.9 and 4.27);

(c) follow procedures and criteria for selection and award of grant proposals acceptable to the Bank (para. 4.20);

(d) consult with the Bank about: i) indicative allocations by field of study in higher education before each annual review of grant proposals, and ii) subsequent proposed allocations by field of study that deviate by more than 20 percent from these indicative allocations (para. 4.21);

(e) review each year with the Bank a sample of about 100 grant applications and the overall process used for grant awards recommended by the councils before the submission of the recommended grant awards to the Minister of Education for final approval, and will facilitate the Bank review of the procedures and criteria followed in arriving at the recommendations (para. 4.34).

Recommendation

7.2 Subject to the above conditions, the proposed project provides a suitable basis for a loan of US$50.0 million to Romania.

ANNEXES

Annex 1: Background on Higher Education and Research System
Annex 2: Draft Letter of Sector Development Policy
Annex 3: Policy Matrix
Annex 4: Cost Benefit/Cost Effectiveness of Higher Education in Romania
Annex 5: Criteria and Procedures for Sub-project Selection
Annex 6: Sector and Project Monitoring Indicators
Annex 7: Bibliography of Materials in Project File

ANNEX 1: BACKGROUND ON HIGHER EDUCATION AND RESEARCH SYSTEM

Overview

Prior to December 1989, Romanian higher education shared many characteristics with other Central and Eastern European (CEE) systems, but it was also unique in important respects. Like most countries of Central and Eastern Europe, Romania's higher education system has a distinguished history with some of its older institutions dating back many centuries. The University of Cluj was founded in medieval times, and, during the 19th and early 20th century, Romanian universities developed as elite and high quality institutions modeled after those of France and Germany. However, after World War II, the model of higher education and research prevalent in the communist countries was adopted in Romania. In the communist model, the essential linkage of teaching and research, pioneered by Humboldt in 19th century Prussia and widely adopted since then, was severed. Instead, the university became a high level manpower training institution and research was relocated in specialized research institutes where the political reliability of scholars and scientists could be more easily controlled. Basic research institutes were placed under the academies of science and applied research institutes under the line ministries.

What made Romania unique among the communist countries was that in the mid-1970s Ceausescu distorted the higher education and research system even further. Ironically, Romanian higher education and research opened up to the West after the events of the Prague Spring (1968) up to the mid-1970s, when Ceausescu was regarded as a maverick in Eastern Europe for opposing the invasion of Czechoslovakia by the Soviet Union. Many Romanian academics, who are still active at present, enjoyed the opportunities of studying and doing research abroad during that time. However, about the mid-1970s, when Ceausescu began to accelerate his policy of industrialization and technological self-sufficiency, his regime created an even more centralized and distorted system of higher education and research than prevailed in any of the communist bloc countries. Basic scientific research was removed from the Academy of Sciences, which was reduced to a mere shell, and placed in the research institutes under the line ministries. The National Science and Technology Council centralized research to an extreme and used gross political interference instead of scientific criteria to make decisions. The results were disastrous for higher education and research and Romanian professors and researchers were cut off from international cooperation.

Immediately after the overthrow of the Ceausescu regime, important changes took place. The National Council for Science and Technology was disbanded and the Ministry of Education and Science was created in 1990 with responsibilities for both education and research. Public universities asserted their right to academic freedom, although administratively and financially they were still under central controls in many key matters. Many private universities mushroomed starting in 1990 based upon a commercial law that allowed private entities to provide tutoring and educational services. In 1992, the Ministry of Research and Technology was created and given responsibility for scientific research and the Ministry of Education and Science was changed to Ministry of Education, although it was still responsible for higher education. The Romanian Academy of Sciences was also revitalized and many of the research institutes were returned to it.

Structure and Governance of Higher Education

The rapid changes outlined above pointed to the need for a new education law to provide an organized legal framework for higher education. In 1993 Parliament passed an Accreditation Law that established the National Council for Accreditation and Academic Evaluation. After more than two years of discussions in Parliament, the new Education Law that covered the whole

education system was passed in July 1995. Significant chapters of the law were devoted to higher education. The higher education system is now more differentiated with three distinct levels as laid out in the Education Law.

The college level course of study takes two to three year of study in courses that are more vocationally oriented with more practical courses with less theoretical orientation. Applicants must have passed the baccalaureate exam given at the end of secondary school. In addition, they must also pass the entrance exam given by the higher education institution. The course of study ends with an examination in the field of specialization and a diploma is issued for that field of study.

The university level takes four years typically, but a few fields, such as medicine may take six years. As for the college level, applicants must pass the baccalaureate exam at the end of secondary as well as the entrance exam set by the faculty of the institution to which they are applying. At the end of their studies, students must pass an exam in their field of studies to complete their requirements for a bachelor's degree.

Postgraduate programs can be Masters or doctoral courses of study with research. Applicants must have a bachelor's degree and pass the entrance exam of the faculty they wish to enter. The doctoral program requires advanced coursework as well as completion of thesis to be publicly defended and assessed by a panel of experts. Doctoral degrees are awarded by the university and confirmed by the National Council for the Attestation of Academic Titles and Degrees.

The Education Law provides for three levels of governance of the public higher education system: the central level of the Ministry of Education, the intermediary Councils and the individual higher education institutions (HEI).

The Ministry of Education is responsible for the education system at all levels and each year the Minister must present a report, which is publicly available, to Parliament on the education system (see attachment for an organization diagram of the Ministry and the Councils). The budgetary allocations of the universities, although based upon the recommendations of the Higher Education Finance Council (see below), are transferred to the institutions through the Budget Department of the Ministry of Education. These budgetary allocations to universities and colleges must also be make public.

With respect to the intermediary organizations, the Education Law provides for a number of councils that report to the Minister and advise on different aspects of higher education. The most important of these for the purposes of this project are the Higher Education Finance Council, the University Research Council and the National Rectors' Council. While the National Council on Accreditation and Academic Evaluation also report to the Minister, this council also reports directly to Parliament and is autonomous of the Ministry of Education in its functioning, decision making and its budget.

The individual public HEIs are provided autonomy, both academic and administrative, by the Education Law. The Education Law defines academic autonomy as the right of the

academic community to exercise its academic freedoms in the absence of ideological, political or religious constraints. HEIs are also autonomous in the administration and use of its budgetary resources subject within the appropriate public finance rules. The academic community of an HEI elects the Senate, which is the governing body of the institution, in accordance with the institution's charter. The individual faculties of an institution have professorial boards that govern the affairs of the faculties. The Education Law allows for participation of students in the Senate and the professorial boards of faculties in which they can comprise up to 20 percent.

Private HEIs are also subject to the Education Law, which regards them as part of the national system of higher education, but they are accorded complete autonomy in matters such as charging tuition and fees and in their forms of governance. Accredited private HEIs are granted the same tax exemptions from VAT and import duties as are public ones and their students are also granted the same discounts and privileges, such as transportation discounts, as are students of public HEIs. In addition, accredited private HEIs can compete for program development and research grants, and their students, who are financially needy but academically qualified, can benefit from state financial aid when matched with that from the private HEI.

Dimensions of the System

In the early 1970s, the higher education system consisted of more than fifty (51) institutions and almost two hundred (195) teaching faculties. This was reduced to 44 institutions and 101 teaching faculties by 1989. Although the number of graduates of academic secondary schools slowly increased from the mid 1970s, total higher education enrollments declined to about 164,000 students in 1989 from 193,000 at the beginning of the 1980s.

The total number of public degree granting institutions has grown to 56 from 44 in 1989/90 while the number of teaching faculties has more than doubled. New public universities have been established, especially in more educationally disadvantaged regions. Most of the new institutions have small enrollments as do the majority of older ones. In 1992/93, 18 institutions enrolled fewer than 1,000 students and only 6 had enrollments of more than 10,000 students, the largest institutions being in the Bucharest region which accounts for 40 percent of all university enrollment.

Despite the rapid expansion of higher education enrollments in the public sector, access to universities is still highly competitive. In the 1993 university entrance examinations, the ratio of candidates per seat was 20:1 in some faculties though the number of places has increased appreciably. Science and engineering have experienced the most radical reductions both as a share of total enrollment at the university level and in absolute numbers since 1989. For instance, engineering enrollments have dropped precipitously from 65 percent of total enrollment to 38 percent in 1992/93. In some engineering fields in 1993 there was competition for less than 10 percent of the available places. Meanwhile, enrollments in economics, social sciences and the humanities have grown and now account for almost half (45%) of higher education enrollments. New courses have been introduced in fields such as journalism, social work and business while studies in sociology, psychology and other social science disciplines that were suppressed during the Ceausescu period have been revived.

Changes in aggregate enrollment since the late 1970s have occurred in the context of a

relatively stable population of school and university age students. Therefore, the reduction in enrollments in the 1980s correspond to an even larger reduction in the enrollment rate of the appropriate age cohorts. As the 1989 15-19 and 10-14 age cohorts move to university entry age, there will be a demographic factor increasing the demand for places but this will fall again around the year 2000 as the smaller 5-9 group reaches the appropriate age.

Academic and Research Programs

There was very little diversity in the length and structure of undergraduate programs prior to 1989. Programs in science, arts, social science and the humanities were usually of four years' duration while programs in some professional fields such as engineering and medicine were five years. Evening courses required an additional year. Teaching faculties, as is common in European systems, functioned autonomously in regard to admission, instruction and examination and programs were highly specialized.

The Education Law and regulations of the HECs now allow and encourage more flexible program structures. Two to three year certificate programs are being established in many new fields--for example, in library and information sciences. Traditional degree courses, especially in engineering, are being divided into two cycles: a short cycle diploma program of three years with two additional years of study leading to a degree. At the Polytechnic University of Romania, broader areas of specialization such as electrical and mechanical engineering are now emphasized and studies are offered in English, German, French as well as in Romanian. In addition, the older public universities are introducing Masters programs of one to two years duration including some in new inter-disciplinary specialties such as ecology and environmental engineering. Full time doctoral programs involving advanced course work as well as research are also being re-established, and are now offered in about 40 public universities, entry to which will soon require the new Master's degree.

Some progress is being made in reforming the organization of instruction and assessment. Programs of study are increasingly become course based rather than credit based which limits students' choices, fosters premature specialization, and prevents mobility among fields, faculties and institutions. The number of hours of compulsory instruction have been reduced from 36 to 24 hours a week, more in line with Western European or North American universities. This leaves more time for self-study, but it will also require more and better teaching materials and library resources. Private universities are also introducing changes, e.g. the Ecology University has been innovative in these respects, pioneering introduction of the credit system, major and minor program concentrations and new methods of assessment.

For reasons related to the efforts of communist governments to destroy academic research after 1948, higher education is the junior partner and smallest player in the national research system. In 1991, researchers in the higher education system represented only 3 percent of R&D personnel. But the number of full time equivalent R&D personnel in higher education more than tripled between 1989 and 1992, due to expansion of the professorate while the number of R&D scientists and engineers in sectoral scientific institutions greatly declined

Most R&D activity in the higher education system is concentrated at the largest public universities, primarily those in the Bucharest region and especially the Polytechnic University in

Bucharest. In higher education institutions in Western European and North American countries, graduate education is the principal means of producing research. Expansion of graduate programs in Romania's universities did not begin until 1990. Since then, the universities have re-established their traditionally prominent position in doctoral training Nevertheless, the rapid growth of undergraduate education, the poor infrastructure for staff and student research and the lack of funding are serious constraints on the development of research capacity in the higher education system. The Government Strategy adopted in 1994 called for establishment of the University Research Council as a proper mechanism for funding for university research. The URC was first established by a decree of the Minister of Education in early 1995 and started its operations. Subsequently, the URC was given a stronger foundation in the 1995 Education Law.

Staffing and Infrastructure

The shortage of staff represents a serious constraint on curricular modernization, and especially on the development of graduate programs which are needed to produce the next generation of academics. In 1992/93, the student to staff ratio in public universities was 7.5:1 if the number of authorized staff posts is taken as the denominator, and about 13:1 if actual staff on board is the denominator. Almost half of all sanctioned academic posts in the public universities were vacant in 1993/94. The high course requirements of academic programs distort this situation. If staff teaching workloads remained unchanged (at 12 hours for teaching assistants and 6 hours for professors) but course requirements for undergraduates were reduced to, say, 24 hours of instruction per week, significant staffing resources would be freed to support development of new programs especially at the Master's and doctoral levels. However, this would prompt radical changes in methods of instruction and assessment that would, in turn, require larger lecture halls and, especially, expansion of library and laboratory facilities.

Although the overall student-to-academic staff ratio changed very little, from 13.4:1 in 1989/90 to 13.2:1 in 1992/93, there were large changes in individual fields. In economics and business courses where enrollments increased from 12,500 to 27,000, actual staff numbers were constant increasing the student to staff ratio to almost 50:1 in 1992/93. However, in engineering which in 1989/90 accounted for about two thirds of all students but only slightly more than a third in 1992/93, the student staff ratio fell from 19:1 to 13:1.

Growing enrollments have led to a chronic staff shortage in fields with high employment opportunity. This has led as well to the recruitment of many young staff without doctoral degrees whose heavy teaching responsibilities discourage their professional development. Academic work confers lifetime security of employment and salaries are rigidly tied to rank with eligibility for promotion based on length of service. To ensure uniformity in the professional degree and titles in higher education institutions, the National Council for Attestation of Academic Titles, Degrees, Diplomas and Certificates, appointed by the Ministry of Education, establishes criteria for such degrees as the Ph.D, etc. A professorship represents the pinnacle of an academic career. Traditionally, promotion to the senior ranks of the professorate (associate professorship or a chair) has required a doctoral degree and involvement in research and doctoral supervision.

The very rigid, one dimensional structure of academic work fosters a high degree of uniformity in the missions of higher education institutions and the aspirations of their staff. One consequence is the stimulus provided to staff to seek recognition of the right to guide doctoral

studies (and, thus, to admit students), an opportunity denied to many staff before 1990. The number of staff deemed qualified to supervise doctoral studies increased by almost seven times between 1990 and 1992, contributing to a massive expansion of doctoral enrollments. Because doctoral training has been equated with research, almost all new higher education institutions wish to be recognized as research universities and to offer doctoral degrees. This includes most of the new private higher education institutions.

Infrastructure needs for higher education are very acute. Library materials are a particular problem. A 1993 report International Book Development Ltd., a consultant firm specializing in supply of books and libraries, drew attention to the serious shortage of funding for (university) libraries to cover stock acquisition, automation, refurbishment and training. Buildings and equipment have seen very little refurbishment as is evident in the dilapidated state of buildings and equipment. Nevertheless, there was an increase in building space per student at a time of very high enrollment growth, from 3.47 sqare meters per student in 1989 to 5.19 sqare meters per student in 1992. This was not the result of new building, but reflects the transfer of school buildings to the universities. Thus physical space is not so much a problem as is refurbishing and furnishing proper materials and equipment for existing space.

Costs and Finance

In the past, resources from the state budget were allocated to the public universities according to an outline budget for all salary and non-salary expenses. This had to conform to a very detailed set of norms, which have very extensive information requirements and specify, for example, allowable expenditures for energy based on square meters of space for students. All important cost parameters were prescribed, including wages and salaries and even staffing levels for the student hostels and refectories. The public universities had no discretion in these matters.

In determining the allocation from the state budget, the relevant ministries (finance and education) took into account estimates of internally generated income (self-financing). The resulting grant was split into a series of chapters with very limited scope for flexibility in reallocation by the institution. For any total level of expenditure by an institution, the higher the estimated self-financing, the lower the required state subvention. Thus, any effort by an institution to raise funds was offset by a reduction in state grants. One response by institutions was to attempt to keep internally generated income from fees, charges, contract research and other sources "off-budget;" i.e. in a separate account. That, in turn, provided incentives to institutions to develop activities such as micro-production which are peripheral to the main functions of a university, as core activities are difficult to put "off-budget." The principal effect of this system of allocating resources, though, was to generally discourage institutions from diversifying their income.

One feature of educational systems under acute resource pressures is absent in Romania; namely, the tendency for salary items to crowd out the materials, maintenance and other non-salary items as a share of higher education expenditures. This is not to say that non-salary items are adequately funded. Capital expenditures and, especially, allocations for library materials, are very low. In 1991 and 1992, no new building was started. Most capital expenditures are for the renovation of existing buildings, and the distinction between capital and maintenance may not be very meaningful.

Funding for research in the universities was very little since they were regarded as the least significant part of the national research system. To overcome this funding problem, a new Special Fund for Higher Education Research was instituted in 1993/94 financed by fees paid by Romanian and foreign students into an account managed by the Ministry of Education. Previously, there was a Special Fund for Education derived mainly from foreign student fees. Half of the foreign currency obtained was allocated to the universities and supported professional travel, acquisition of library materials and purchase of computers, inexpensive research equipment and consumables as determined by the institutions. The Ministry's intention was to enlarge this source of funding with fees paid by Romanian students and transform it into a fund to develop graduate education and research capacity. But since these fees were paid to the institutions and their teaching faculties--and kept "off budget"--the new special fund did not develop into a significant source of research funding for the universities.

Research funding from external sources, such as programs of the European Union, accounts for a very small amount of national research expenditure. Its primary importance is as a source of international professional recognition, exposure to peer review from the international scientific community as well as in the opportunities various programs of support provide for scientific collaboration and professional development. These benefits have special significance for Romania's formerly isolated scientific and academic communities.

External sources accounted for only .18 percent of current national R&D expenditure in 1992, less than in 1990 (.55%) or in the peak year, 1991 (.77%). A plausible interpretation of the declining proportion of support is the increased competition from other scientific communities in Eastern and Central Europe for the scarce research funding available from foreign sources. For instance, in 1992/93 competition for the European Union's fellowships and joint research projects program, designed to "re-connect" the scientific communities of Eastern and Central Europe with Western Europe, 11,750 applications were received. Only a fourth (25%) were funded and just thirty grants were made in support of joint research programs. Romanians contributed about 2,000 applications of which 20 percent were approved.

Romanian researchers face multiple obstacles to securing foreign funding for their activities or in order to improve their training and skills; outdated laboratory equipment, inadequate libraries; poor financial and professional incentives and, more importantly, a legacy of professional isolation from the mid-1970s. A 1993 survey of staff in the Romanian Academy and in Government scientific institutions indicated that researchers:

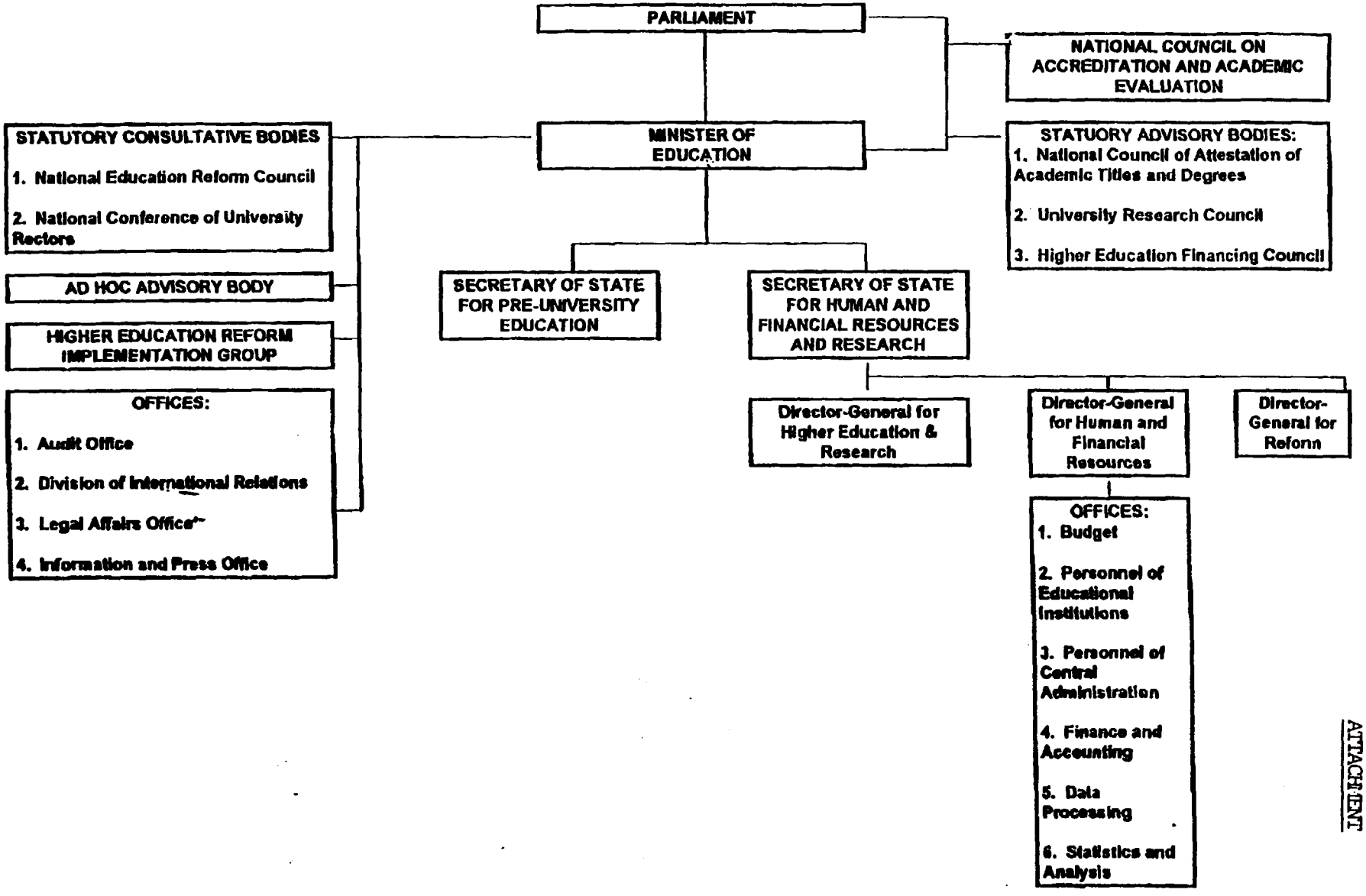
a) have little exposure, experience or communication with foreign colleagues (only "15% have authored scientific papers published in a foreign scientific journal over the last 3-4 years";

b) have little access to foreign scientific literature (with the consequence that "among references cited in the papers published in Romanian scientific journals, there are very few citations of mainstream works and these are often from the 1960s"); and

c) despite the lifting of restrictions on foreign professional travel, relatively few have opportunities to attend international conferences because of low salaries, limited travel funding and difficulties in obtaining foreign currency and visas.

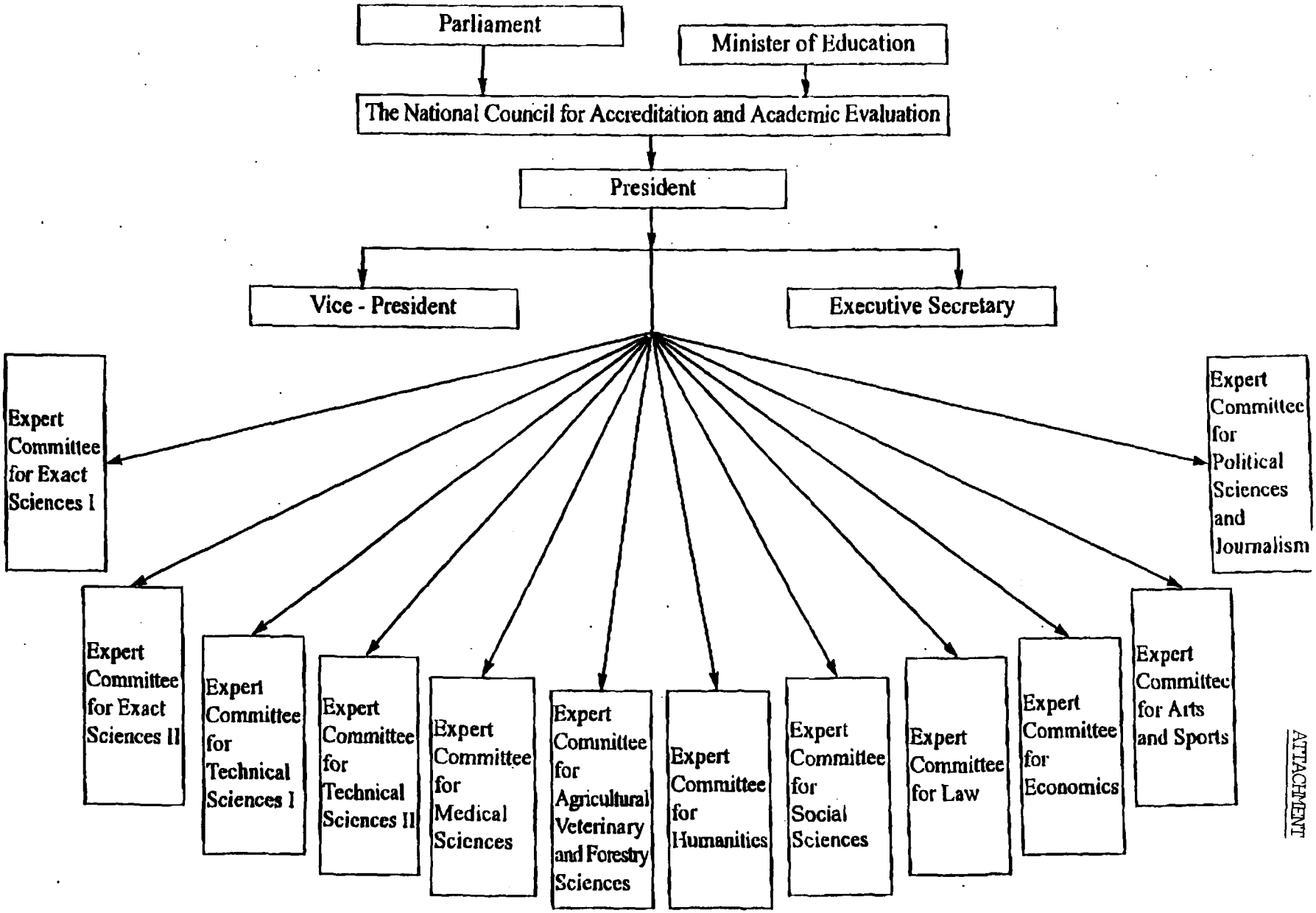
In addition, Romanian researchers had little experience with competitive funding mechanisms and little knowledge of funding opportunities, especially researchers located in institutions outside Bucharest. Most of those studied recognized the importance of such funding for obtaining literature, equipment and access to expertise. Moreover, the international cooperation that comes with foreign funding can help to improve Romania's competitiveness in international science.

ROMANIA: HIGHER EDUCATION REFORM
Organization Chart: Ministry of Education



ATTACHMENT

THE NATIONAL COUNCIL FOR ACCREDITATION AND ACADEMIC EVALUATION



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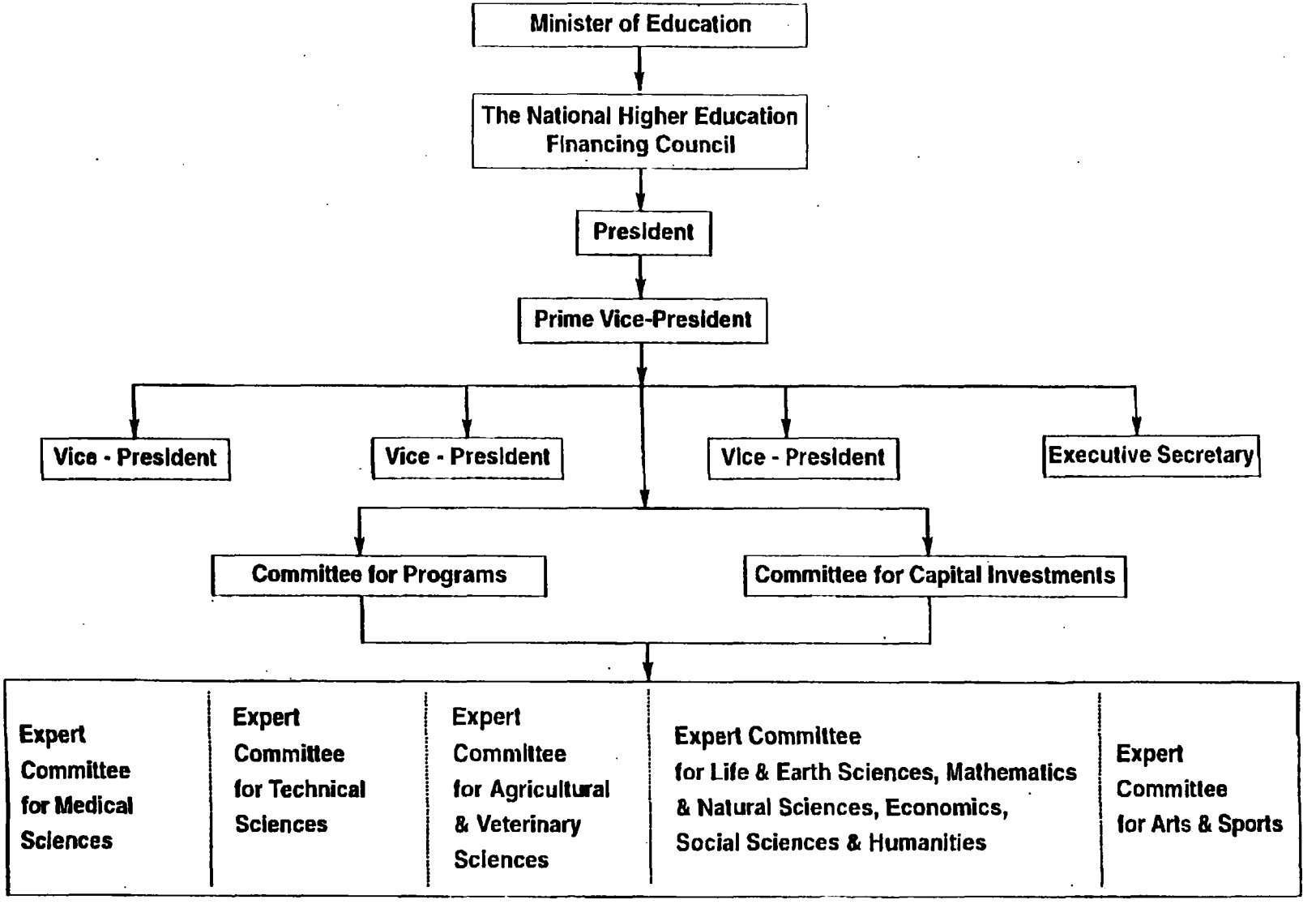
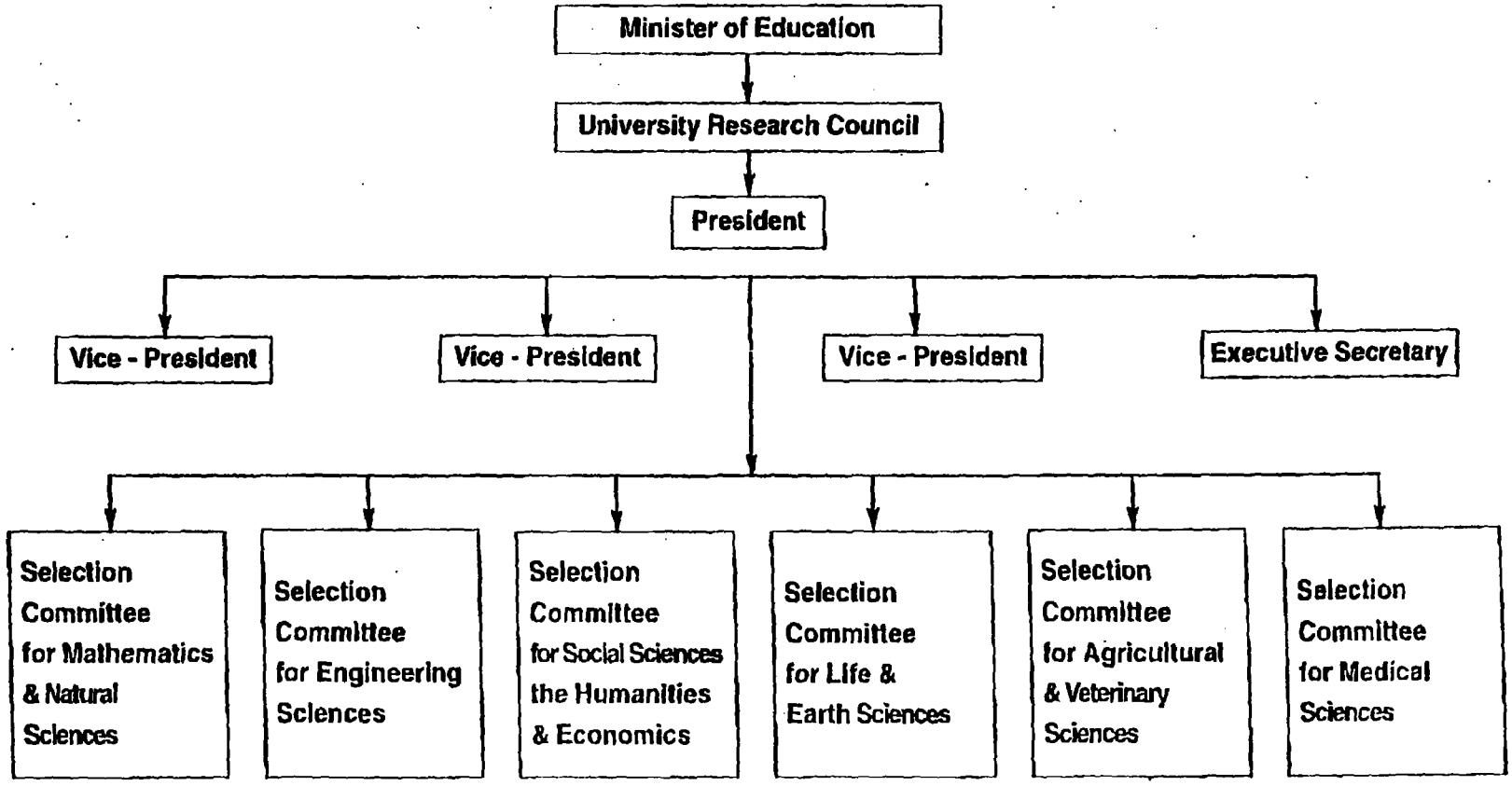
The National Higher Education Financing Council



University Research Council



ROMANIA

MINISTRY OF EDUCATION

MINISTRY OF FINANCE

Mr. JOHANNES F. LINN

Vice President
Europe and Central Asia
THE WORLD BANK

Dear Mr. Linn,

The year 1990 marked the beginning of significant changes in Romania's higher education system which proved to be a most dynamic social sector. The Government has pursued the development and initial implementation of a coherent ambitious programme since 1993 in an effort to drastically reform higher education as a whole. The programme is part of the country's economic and social reform strategy with higher education reform fostering, facilitating and promoting reform in the economy.

There are several principles which guide the Government's higher education reform in Romania.

(a) Higher education reform should be correlated with economic reform. The role of higher education is crucial to the success of economic reform as it develops strategies for transition from a centrally planned economy to a market economy, trains professional in fields that a market economy needs, develops new technologies and production processes, trains professional managers, and promotes and development of a new mentality and a new attitude. The market economy requires new professional and managerial expertise that higher education can provide. The emergence of a, still small, private sector of the economy has determined a soaring demand for expertise in a number of areas (finance, banking, insurance, accounting, law, microelectronics and informatics, telecommunications, management, social sciences, a.o.). Universities need quickly to adjust to the changing labour market demand and supply trained professionals in appropriate numbers and in a reasonably short time. For higher education reform to move in step with economic reform, drastic changes are required at higher education institution level: restructuring programmes, by quickly expanding some of them and reduction some others (either because they were overdeveloped in the past, or because labour market demand has shrunk), innovating curricula, expanding re-training through short programmes, and continuing

education programmes. Basically, more flexibility is required of higher education to respond to economic and social reform.

(b) Quality study programmes. Quality assurance through national and institutional procedures and mechanisms aims to stimulate universities clearly and appropriately to define their missions and objective, properly to assess their human, material and financial requirements and to develop internal quality assessment mechanisms and procedures for their programmes. Continuing assessment and self-assessment of higher education also has the role of protecting the community against the institutions that do not have the capacity to deliver on their promises, and signalling - to higher education candidates and beneficiaries alike - the quality of various institutions and programmes. Quality indicators are going to be a major public funding allocation criterion. Quality assurance in Romania's higher education is set on legally established standards, widely known to the academic community, and enforced in a transparent and objective fashion; these standards are in line with those in use in advanced countries. However, higher education quality cannot be assessed or improved unless university autonomy and academic freedoms are observed.

(c) Equal access. Higher education reform also pursues to give equal opportunities and non-discriminatory access to academic education. The basic conditions for entry to higher education are intellectual skills and talent. Since transition to a market economy has brought with it wide discrepancies in personal income, special programmes to assist meritorious but needy students are required for the equal opportunities policy to be consistently pursued.

(d) Supporting the growth of private higher education. At a time when demand for higher education is soaring, the private sector has the potential to offer new academic programmes and increase student intake. Furthermore, the private sector introduces welcome competition in higher education by providing alternative programmes, structures, and training techniques. Private higher education has a significant role to play, particularly in the development of flexible undergraduate programmes that are highly responsive to labour market demand fluctuation. The development of private higher education can mobilize new sources of finance at a time when public budget allocations are severely constrained.

(e) Reforming higher education management. If higher education reform is to succeed, academic and administrative management must change at both system and institutional level. University autonomy requires higher education management to be decentralized extensively, with the Ministry of Education relinquishing much of its decision-making power to national academic agencies and universities. Quality assurance in public and private higher education, the use of funding mechanisms, growing university research and competitive research grants call for the creation of national academic organisms comprised of representatives of the academic community. The status of such organisms is consultative in relation to the Ministry of Education. They also act as consultancies to universities insofar as quality assurance, financing and research organisation are concerned. Against the background of university autonomy, these agencies give representatives of the academic community a key role in the management of the education system. They ensure that decision-

making is objective, appropriate (through knowledge of various institutional situations), transparent and fair.

(f) Changing financing mechanisms and procedures. The fast growth of higher education and trailing public allocations call for drastic changes in funding for higher education institutions to make sure that the available financial resources are distributed in an objective, fair and transparent fashion, all while improving the efficiency of those resources, whether allocated of self-generated. In view of prolonged underfinancing of higher education, which amounted to only 0.5 percent of the GDP in 1994, the new financing system pursues to substantially expand public allocations to higher education, and quickly increase the size and weight of capital and development expenditure. Furthermore, there should be a diversification of funding and a growing contribution from sources other than the public budget (tuition fees, sponsorships, revenues from academic services or property). The new funding mechanisms demand the HEIs enjoy broad financial autonomy, and this in turn calls for professional administrative and financial management, and its higher accountability.

Romania's higher education reform which is under implementation has already achieved substantial success, over 1993-96, more particularly:

(a) The law on academic assessment and accreditation was passed in 1993. It sets the framework for quality higher education, for quality assessment and improvement. Quality is assessed by an independent Parliament-elected body: the National Council on Academic Assessment and Accreditation. There are twelve specialist committees operating under it, each of which periodically assesses the programmes in its own field. The Accreditation Council also employs experts and specialist staff on a full-time basis. Assessment is fully performed by members of the academic community. Under the Law on Academic Assessment and Accreditation, there are minimal standards that every programme in the country must meet. These standards have been set in consultation with professional associations and are broadly in line with those in EU countries. The new academic assessment and accreditation procedures are the legal basis for the operation of private higher education institutions.

(b) A Programme of Higher Education Reform in Romania was prepared in 1994. It was the outcome of a joint effort by Romanian and foreign experts who wrote a good many studies during 1992-94. Specialist advice and assistance was provided by the World Bank all along. The Programme sets the principles and guidelines for reform of study programmes, university research, institutional financing, student support, academic management and institutional management, quality assurance, student intake monitoring, a.s.o. The Programme came under the scrutiny of universities across the country and was endorsed by the whole academic community. With its provisions as a basis, twenty-eight universities designed their own reform programmes, as part of a pilot study coordinated jointly by UNESCO and the World Bank. Eventually, every university made its own reform programme. In November 1994, the Programme was approved by the Government of Romania as the policy framework for higher education reform. Many of its provisions have been put into the new Law on Education.

(c) In 1995, the new Law on Education was passed. It sanctions the diversification of study programmes (undergraduate - short-cycle and long-cycle, and postgraduate - master and doctoral); a different approach to education management (at national level, the Ministry of Education, the National Council on Academic Assessment and Accreditation, the National Higher Education Financing Council, the National Council on University Research, the National Council on Academic Titles and Degrees). The law makes significant changes in higher education financing (core budget block grants, non-budgetary funds, financing tied to quality assessment, competitive research grants, a guaranteed minimum of four percent of GDP allocation for education). Under the new law, accredited private education is part of the national higher education system. Accredited private universities have, by law, the same status as public universities have (private universities are tax exempt, can compete for research grants for development and quality improvement of higher education; talented students enrolled in accredited private universities are eligible for state support: graduate and postgraduate grants for studies abroad and doctoral grants; the diplomas and certificates issued by accredited private universities and public universities are equivalent).

(d) At present (1996), the Law on Education is in force and the Higher Education Reform Programme is under way. Their provisions have largely been implemented. The hours of compulsory instruction have been reduced to 22-28 per week, from 28-36. For the most part, degree programmes have been shorted to four years, from five or six, and short-cycle (two-to-three years) certificate programmes have multiplied. The weight of elective and optional courses in curricular activities has grown. Study credits have partly been used since 1995 to give students more independence and increase their responsibility in setting their academic course all while making the system more efficient by bringing the failure rate down. About 500 postgraduate programmes (including master and PhD programmes, and continuing education programmes) have been licensed. University research has significantly grown through master and doctoral programmes, and the establishment of new research centres. Competitive research grants have become widespread since 1995. There has been a partial introduction of formula funding (HEIs allocations in respect of student members and average student costs by field and level of study). During 1994-96, some 1,800 new programmes given by both public and private higher education institutions have been assessed. Unless minimal standards were met, operation licenses were not issued and some programmes were terminated (about 400 programmes). The new quality assurance and institutional financial mechanisms have been instrumental in reducing programme overlapping and duplication, and to narrow specialization. Student intake is increasingly correlated to labour market demand; while enrolment in fields for which demand is low (engineering) have dropped by 30-50 percent, they have risen by as much as 100-200 percent in areas where demand is high (law, social sciences, accounting, finance, banking, informatics). University autonomy and academic freedoms are embedded in the new charter of every university across the country.

(e) The year 1995 marked a turning point in higher education financing mechanisms and the size of allocations. Public investment in higher education and

average per student expenditures began to grow. The 1996 Budget Law makes provision for a significant increase in public allocation to higher education. The share of capital expenditures and university research expenditures has grown. Public universities have increased the weight of self-financing (tuition fees can lawfully be charged, higher revenues are generated from academic services and property). Private higher education financing cuts a substantial share (about one-third) of total enrolments. Private funding are revenue generation in 1995 accounted for about 25 percent of total recurrent costs of higher education.

In 1996 and the next four-five years, the Government intends vigorously to pursue further implementation of the Law on Education and the Higher Education Reform Programme

(a) Major curricular changes will take place in both structure and content. Programmes will be given in new fields of study and special priority will be given to establish new multidisciplinary programmes. Programmes in some traditional fields of study (such as engineering, agriculture) will be restructured. The new programmes will be financed by competitively allocated grants without limiting the access to grants for any field of studies. The credit system will become widespread as of the 1996-97 academic year. Inter- and intrainstitutional student mobility is to be encouraged. Doctoral studies have been regulated by the Government Decision adopted in 1996.

(b) Quality assurance and improvement will further be pursued and the periodic evaluation of the teaching and research staff performance will be put in place (about 4,000 people every year). Parliament is expected to pass soon the Teaching Staff Statute. The Statute provides for the career diversification of the teaching staff, removal of years-of-experience barriers to promotion, reliance on teaching and scientific performance criteria, and use of short-term contracts. The Statute gives universities a wide measure of autonomy insofar as the teaching and administrative staffing levels, recruitment, and promotion are concerned. In 1996, every university will develop specific criteria and mechanisms for periodic evaluation of teaching and research staff performance. During 1996-98, all programmes offered by public and private universities (some 3,500 in all) will be assessed for quality and steps will be taken accordingly).

(c) Beginning in 1996, a new student support system will be used under which grants to poor but meritorious students will increase (at least 20 percent of scholarship funds will be allocated to these students). Annually, the Ministry of Education may award graduate and postgraduate grants for studies abroad and doctoral grants on national competitive bases; the competitions will be accessible to all students and graduates from public and accredited private higher education institutions.

(d) The reform of the education system management and institutional management will be continued. The Ministry of Education will be such reorganized as to exercise the powers it was given by the Law on Education (1996/97). The National Council for Higher Education Financing , the National Council on Accreditation and

Assessment and the National Council for Academic Research will exercise all the powers they were given by the laws and regulatory acts. Appropriate financial and human resources will be provided for them to operate effectively. The organisation and operation of the National Council for Higher Education Financing and the National Council for Academic Research were regulated by the 1996 Order of the Minister of Education. In addition, a Government Decision will regulate financing of academic research through grants.

(e) The Higher Education Reform Program Implementation Unit will be organised to supervise reform programme implementation, manage external financing and coordinate donors's assistance. Highly significant will be the changes at institutional management level: separation of academic management form administrative management, recruitment of professional administrative managers, widespread use of computer-assisted management, autonomous management of student services. Special management training programmes will be given in an effort to increase the capacity of universities for academic planning, management, and self-governance. Institutional development programmes will be a preliminary condition for grants competition. Evaluation procedures for institutional development programmes will be set (1996). Computerization of all academic activities is to be achieved as the national academic network is to be completed and connected to international networks. Improving the management of higher education and computerization at both the system and institutional levels is to be done largely through a EU assistance programme effective in 1996.

(f) Starting 1996, the new system of higher education financing will be generalised. Core funding through block grants allocated according to a normative funding formula based on enrolment and unit costs will be introduced ensuring that resources follow student demand and funding distortions are corrected.

Starting 1996-1997, almost 70-80 percent of funds for operating grants will be allocated as core budget according to the normative funding formula. This proportion will be gradually increased until, by end of academic year 1998-99, all public funding for core operating budgets will be allocated through the formula. These funds will be provided to institutions through block grants allowing flexibility of expenditures within five broad categories with restrictions only on the movement of funds from capital, personnel and student support budgets.

During the next years, development funds for the HEIs will be allocated only competitively, on the basis of rigorous peer-review. The Government will ensure the increase of the investment-allocated funds within the global budget for public education.

The National Council for Higher Education Financing will set the allocation procedures and mechanisms for allocation of core funding and competitive grants as well as access criteria of public and accredited private institutions to the competition for research grants for development and quality improvement of higher education. These new mechanisms will considerably increase the financial autonomy of higher education institutions.

Concurrently, mechanisms and procedures to increase accountability will also be put in place. As of 1996/7, institutions will be audited for their use of allocations. The share of private financing and cost recovery will continue to grow, to some 30 percent by the year 2000.

Sincerely,

Minister of Education,

Liviu Maior

Minister of State,
p. Minister of Finance,

Florin Georgescu

ANNEX 3: Romania: Higher Education Strategy and Policy Matrix

OBJECTIVES	MEANS	ACTION TAKEN	ACTION REMAINING
I. <u>EXTERNAL PRODUCTIVITY</u> Reorient higher education to make it responsive to market economy, including A.Changing the content; B.Readjusting the size; C.Building in flexibility	<u>A.Changing Content:</u> 1.Introduce new fields 2.Eliminate overspecialization 3.Create interdisciplinary studies <u>B. Adjusting Size:</u> 1.Reduce publicly-funded enrollments in surplus fields (e.g. engineering) 2.Expand in market-oriented fields (e.g. business, accounting) <u>C. Building Flexibility</u>: 1.Restructure higher education programs 2.Reform organization of teaching 3.Reform teacher service	<u>A1.New Fields:</u> -Official program guidelines first established [1994] <u>C1.Restructuring:</u> -Length of degree programs standardized [1995]; -Three-tier structure adopted [1995]; -Courses of varying length introduced, including short courses, continuing education and retraining [1995] <u>C2.Program Organization:</u> -Electives and double majors permitted [1994]; -Student mobility fostered by phased adoption of credit system [1995/6]; -Transfers permitted between programs and institutions [1995/6] <u>C3. Reforming Teacher Service</u> -New law on teachers submitted to Parliament, including provisions for introducing contract employment and salary differentials by field.	<u>A1-3.New fields</u>: -Offer competitive grants for new program development and innovation; <u>A2.Overspecialization</u>: -Offer competitive grants to develop consolidated programs <u>B1-2.Adjusting Size:</u> -Introduce norm-based funding according to enrollments thereby ensuring that resources follow student demand and funding distortions are corrected. <u>C2.Credit System</u>. -Provide incentives for full implementation of credit system, e.g. application of full-time equivalent students as part of funding formula [1996/7] <u>C3.Reforming Teacher Service</u>: -Introduce Government regulations allowing HEIs more autonomy in terms of employment and remuneration of staff.

OBJECTIVES	MEANS	ACTION TAKEN	ACTION REMAINING
II. QUALITY ASSURANCE To revitalize academic programs so as to achieve higher quality standards.	A. Establishment of accreditation mechanism and minimum educational standards B. Introduction of accountability for educational results C. Establish incentives for program innovation D. Achieve better balance in expenditures, i.e. more for development, teacher training, materials and complementary investments E. Development of post-graduate education so as to relieve constraints on expansion of undergraduate enrollments in market fields by expanding output of qualified teachers F. Development of academic research as an integral part of postgraduate education	A.Standards-Appointment of Accreditation Council [1993]; establishment of standards for institutional accreditation [1993]; -Accreditation review process completed for ...institutions and ... programs [1994] -Introduction of terminal testing of graduates in the professions to ensure equivalency [1995] B.Accountability: Periodic (cyclical) review provided in accreditation law and linkage of results to public funding [1994] D.Expenditures: 1996 budget includes about 20% for capital improvements E.Postgraduate Education:-Decision to concentrate available resources in selected postgraduate institutions [1994] -Accreditation begun of master's programs [1994] -Introduction of course-based post graduate teaching [1994] -Introduction of masters degree [1995] -Government adopted regulations for doctoral studies [1996]; -Establishment of international collaboration, mainly through EU F.AcademicResearch:-Establishment of Research Council [1995]; -Academic research program introduced through education budget [1995] G.Academic Research: Provision of peer-review based competitive grants through the Research Council for graduate academic research.	A.Standards: -Development of standards and procedures for cyclical quality evaluation by 97/8 B. Accountability: -Link budget allocations and accreditation to educational results C. Program Incentives: -Provision of competitive grants based on rigorous peer review: (1) through the Financing Council for undergraduate teacher and program development; (2) through the Financing Council for capital investment, such as equipment and libraries; D.Expenditures: -Target: Government to reach/maintain at least 20% of total public education spending on development, innovations and capital investment by 1998/9 E.Postgraduate Studies:-Introduction of two track career streams for research and academic staff in the Teacher Statute -Provision of peer-review based competitive grants through the Research Council for development of postgraduate teaching programs

OBJECTIVES	MEANS	ACTIONS TAKEN	ACTIONS REMAINING
III. INTERNAL EFFICIENCY To control public expenditures on higher education by: A. Making more efficient use of present financial allocations to higher education B. Mobilizing additional private resources for financing higher education expansion and quality improvement	A. More Efficient Use: 1. Rationalize the organization of teaching programs 2. Adopt new budget allocation procedures so as to give incentives for efficiency B. Resource Mobilization: 1. Expand private education 2. Achieve greater cost recovery in public education	A1.Program rationalization: -Length of degree programs reduced [1995] -Short cycle introduced [1995] -Number of hours of compulsory instruction reduced [1995] -Overspecialization reduced [1991-6] A2.Allocation mechanisms:-Public allocations divided into four categories, viz. core funding, development, capital and student support [1995] -Preparation of 28 university multi-year institution development plans as a basis for allocation of capital budget B1.Private Expansion:-Legal basis established, expanded [1993; 1995] -Tax exemptions granted [1995] -Eligibility established to compete for public grants [1995]; -Substantial consolidation into units of economic size occurred through the accreditation process [1994] B2.Cost Recovery: -Institutions enabled to set level of allowable fees [1995] -Institution permitted to retain income from all sources [1995] -Institutions given ownership of assets, which can be used partly to generate income [1995]	A2.Allocation mechanisms: -Introduce normative funding formula based on enrollment and unit costs: Introduce competitive grants for development, innovation; -Base capital expenditures on approved long-term plans -Introduce in stages block grant allocations, permitting internal reallocations: Stage 1 [1996/7] allowance of line-item flexibility, except non-salary to salary categories; Stage 2 [1997-8] increase proportion of core funding transferred through block grants as determined by formula -Prepare guidelines on assessing capital development requests [1996/7], and norms for financing civil works [1996/7] B1.Private Expansion: -Remove constraints on teacher supply [See Objective II] -Financing Council issues guidelines ensuring access of accredited private education to competitive grants for program development and innovation [1997] Target: Private enrollment to reach 30% of total undergraduate enrollment by 1999/00. B2.Cost Recovery: Target: Non-public sources contribute at least 30% of total recurrent budgets in public institutions by 1998/9

OBJECTIVES	MEANS	ACTION TAKEN	ACTIONS REMAINING
IV. EQUITY To ensure that able, but poor students can have access to higher education; and -- in the process-- to mitigate the adverse equity consequences of relying on cost recovery for system improvement and expansion	-Allocate student support on basis of need and merit -Eventually introduce an income-contingent loan scheme, once real incomes stabilize and the country's financial institutions develop	-Principle adopted of basing scholarships increasingly on need as well as merit [1995] -Education Law [1995] permits public sharing of support to students in private higher education institutions	-Introduce new support scheme for students in public institutions [1996/7] -Financing Council to announce guidelines for matching grants of up to 50% of the student support given to poor but talented students in accredited private institutions [1996/7] Target: no less than 20% of scholarships allocated to needy but talented students Target: Limit merit alone scholarships to 3% of overall student support budget;

OBJECTIVES	MEANS	ACTIONS TAKEN	ACTIONS REMAINING
V. SYSTEM AND INSTITUTION MANAGEMENT To rationalize the management structure of higher education, so as to: -Strengthen strategic planning capacities -Promote professional planning and control -Strengthen institutional management and administration	A. Redefine central government role B. Devolve professional functions to intermediary institutions C. Decentralize by delegating authority D. Improve system and institutional management	A. Central Role: -New allocation and control functions for Ministry of Education [1995] -Size of Ministry staff reduced from 800 to 200 positions [1991-1996] B. Intermediaries: Intermediary professional advisory bodies created: -Accreditation Council [1993] -Credentials Council [1995] -Financing Council [1995] -Academic Research Council [1995] C. Delegation: Academic, financial and managerial autonomy of higher education institutions guaranteed in the Education Law [1995] D. Management-28 individual institutional development plans prepared by universities [1995/6] -Efforts begun at establishing new internal institutional governance structures [1995]; -Efforts begun at establishing separate administrative and academic functions at institution level in some key institutions [1995]	A. Central Role: Reorganization of Ministry of Education to reflect new functions planned for 1996/7 B. Intermediaries: Provision of adequate staff and operating expenditures for the Councils D. Management: -Institutional development plans become a pre-requisite for access to competitive grants -Establishment of a review procedure for institutional development plans -Require managements of higher education institutions to select priorities through internal review of competitive grant proposals -Promote institutional development of intermediary bodies and higher education institutions through EU project -Build professional management capacities through separate salary stream and training for administrators - Create management information systems to support institutional and system decision making 02.14.1996

COST BENEFIT/COST EFFECTIVENESS OF HIGHER EDUCATION IN ROMANIA

INTRODUCTION

This annex summarizes the available information on benefits and costs of higher education and gives a preliminary assessment of the problems of carrying out a reliable benefit/cost analysis, including estimating rates of return to higher education. Based upon this preliminary assessment, proposals are made for data collection and analysis that should be built into the project monitoring and evaluation so as to improve assessment of the development impact of the project.

RETURNS TO HIGHER EDUCATION

Since the work of Gary Becker, Jacob Mincer and others on human capital in the 1960s, it has become standard to use earnings differentials by levels of education as an analytical tool for assessing rates of return to investments in education. There is a vast literature on this, with many debates about problems of interpretation of earnings and education data. Nonetheless, if data are available, it is appropriate to see if policy insights can be gained by appropriate analysis.

A national household survey, financed through a Bank project, was conducted from April 1994 to December 1994 to provide a better basis for assessing poverty and living standards in Romania. The tables in the attachment to this annex show the results of estimating a standard Mincerian human capital earnings function for this data set[1]. The results are first described and then some of the implications of this for the earnings-education relationship are discussed below.

The earnings function used was of the form

$$\log Y = a + b*EDU + c*EXP + d*EXP^2 + e*TEN + f*TEN^2 + g*X$$

where log Y is the natural logarithm of gross monthly earnings, EDU is a set of dummy variables for different levels of education, EXP is years of general work experience, TEN is years of tenure at the current firm, and X is a vector denoting other individual, firm or regional variables (see page 1 of this attachment for full set of variables).

1/ These results are taken from a background report The Labor Market and the Poor in Romania, E. Skoufias (December 16, 1995). This report was commissioned as one of the background papers for the Banks's Romania Poverty Assessment.

Regression 1 (see attachment to this annex) shows the coefficients for the above specification of the above earnings function. The coefficient of the dummy variables for education levels is often taken to indicate, at least approximately, the private rate of return to schooling, on the simplifying assumption that the private costs of education are measured by the earnings foregone in fulltime education. The coefficient for four-year college education is 0.53 and for secondary education it is 0.17, with the result that college educated workers earn 36 percent ((0.53-0.17)x100) more than secondary-educated workers. Since university education is four years, this might be taken to indicate that the private rate of return to public higher education would be nine percent. Similarly, the coefficient for the three-year college level also indicates a private rate of return of about nine percent.

Some caveats are needed with regard to giving too precise an interpretation to these coefficients as private rates of return.

(a) There is the issue of how competitive the labor market is in Romania. Privatization has been proceeding at a slow pace and in the 1994 survey only about 10 percent (about 2,000) of the cases involved workers in private firms. To explore the possibility of private-public sector pay differentials, regression 2 (see attachment) that includes terms with an interaction of education dummy variables and private-public sector dummy variables. The results do not indicate any significant difference in pay between private and public sectors.

(b) Wage differentiation in Romania has been much less pronounced than in other Central and Eastern European economies that have been pursuing a faster transition to a market economy. Thus, the usual assumptions about relative wages and relative marginal productivity of labor do not hold with the same force.

(c) The graduates of Romanian higher education studied in this 1994 survey have been through an unreformed curriculum; it can be expected, as a result of the reforms that the project supports, that future graduates will have a much more appropriate knowledge and skills set, thereby raising their labor market productivity further.

(d) The wages in the survey are gross wages, i.e., before taxes, whereas what is required for private rates of return are after tax or net wages. Since tax rates on individuals are not that progressive in Romania, and, also because out of pocket costs of public higher education are not that great, this may not cause as serious an error in private rates of return as the fact that wage differentials are compressed, and actually may understate the relative benefits of higher education.

(e) Adjustments are often made for different unemployment rates of university graduates versus secondary school leavers. The unemployment rates from the 1994 survey are 3 percent for university graduates versus 17 percent for secondary school

graduates. While it is difficult to project unemployment differentials by education over the working life of individuals, the evidence from most OECD economies is that university graduates experience much lower unemployment, both cyclical and structural.

The above considerations suggest that the private rate of return for public higher education indicated by the coefficients of the earnings function is likely to be a lower bound.

While the private rate of return is useful for understanding the private demand for higher education, the social rate of return is the relevant one for public policy. The social rate of return takes into account the costs of public higher education incurred by the government and also uses gross wages in the benefit calculations. In Chapter 3 of the main text, the short cut approach was used to estimate the social rate of return. A more detailed and more accurate method can be used as well that makes use of the coefficients of the earnings functions to construct experience-earnings profiles. This can be done by noting that, since the regression uses log Y as the dependent variable,

$$Y = \text{constant} * \exp(b*EDU + c*EXP + d*EXP^2)$$

where exp represents the exponential function using the base e of natural logarithms, EDU, EXP, b,c and d are as in the equation above, and the constant factor in front represents the effects of the constant term of the regression and the average values of the other personal characteristics used in the regression. The predicted experience-earnings profile of university, relative to secondary graduates, gives an estimate the benefits; the earnings of secondary graduates during the four years of university studies estimate the opportunity costs, and the direct cost of university education come from cost studies (see the following section on costs). The internal rate of return, about 7.5 percent (somewhat less than what the short cut method gives) can be calculated from the estimated cost-benefit stream (see attachment). Again, this should be interpreted as a lower bound to the social rate of return likely to prevail in the future as wage differentials widen. For example, if the coefficient of university education is set at a value that prevails in Poland or Czech Republic, the result for the rate of return is about 11 percent.

The rate of return estimate to higher education estimated here should not be taken as the rate of return to the project. The purpose of the project is to improve the relevance of the higher education system to the needs of a market economy so as to increase the rate of return above the levels estimated from 1994 data.

COST ANALYSIS

As noted above, costs must also be brought into the picture in order to complete the analysis, especially to take into account the social rate of return as well as the private one.

Cost differentials by field of study should also be taken into account where possible. Table 1 below gives these results based upon a preliminary study of unit costs by fields of study conducted by the Higher Education Financing Council (HEFC). The table shows that relative cost patterns for humanities and technical fields have changed over time, with the technical fields becoming more expensive relative to the average unit costs and the humanities becoming less expensive. The more recent relative cost patterns of 1994 approach the more typical situation in Western higher education systems. However, two fields that stand out in this pattern of relative costs are agriculture and artistic education. In the case of artistic education, the relatively high unit costs of two times the average is a reflection of the method of training with full time salaried staff for a small number of students. In the case of agricultural education, the relatively high unit costs reflects the fact that these universities have sources of funding through agricultural production and sales that are not available to other institutions.

Table 1: **UNIT COSTS OF INSTRUCTION BY AREA OF STUDY**
(In nominal Lei)[2]

Area of study	**1990**	**1991**	**1992**	**1993**	**1994**
1. HUMANITIES	12647	34538	76272	246269	646254
2. TECHNICAL	10470	32927	110468	342301	892469
3. ECONOMICS	8795	23384	68734	176315	764628
4. MEDICINE	16474	44167	110928	355690	987390
5. AGRICULTURE	19340	71731	166932	604245	2030118
6. ARTISTIC	42941	97508	242978	831051	2050564
7. SPORTS	9113	40049	107165	196293	754795
AVERAGE	12371	36348	100033	304653	869061

2/ The unit cost data in this table is based upon a survey of higher education institutions conducted by the Higher Education Finance Council in 1995 as part of the cost study referred to above. This survey will be followed up each year with better unit cost data collected as part of the regular operations of the Higher Education Finance Council.

It would be useful to take this cost data by fields from the unit costs study and combine it with experience-education profiles in the same fields to carry out benefit-cost analysis by fields of study. However, the cost data itself still needs some refinements and another year or two of data collection to ensure that the system is settling down to normal patterns and avoiding some of the anomalies of the early transition period when price and allocation distortions posed problems of using cost data. In addition, the 1994 data set will be analyzed further to see if there is a sufficient number of cases to support a private and public sector comparison of wage earnings differentials by fields of study. This would then allow for a more rigorous comparison of costs and benefits.

Some elements of the reform program were conceived with the aim of achieving more efficiency and cost effectiveness, thereby generating cost savings. The shortening of programs from five years to four years means that the cost of producing a university would decrease by 20 percent, other things being equal. In terms of the short-cut method, this would give a four-year cost of $2400 and would reduce the opportunity cost to $4800, with a correspondingly smaller benefit stream of $720 annually. Other cost reduction measures include the number of compulsory hours of instruction and the introduction of a credit-hour system to generate efficiency gains. This would result in a reduction of the teaching component of unit costs (about 50 percent of total unit costs) by almost one third. In addition, a larger proportion of enrollment will be in the lower cost fields of business and social sciences versus the higher cost engineering fields. However, to generate these efficiency gains requires investments in new programs, libraries, learning materials and staff development that the project would support. The cost savings from efficiency gains should be counted as benefits of the project, in addition to those benefits derived by the earnings functions analysis, providing an additional element of economic justification for the project investments.

ROMANIAN HIGHER EDUCATION COSTS IN INTERNATIONAL PERSPECTIVE

To get an idea of the scope for decreasing costs or improving cost effectiveness, it is useful to compare costs in Romanian higher education with that in other countries. Costs of higher education, as reflected in expenditures, in Romania are low by international standards. Table 2 below compares funding for higher education in Romania to higher education funding in a number of other countries from Eastern Europe, OECD, as well as from the fast growing economies of East Asia.

Table 2: Total Expenditures and Public Expenditures on Education and Higher Education as a Percentage of GDP in Selected Countries

Country	Education, All Levels		Higher Education	
	Public	Total	Public	Total
Romania	3.3	3.4	0.4	0.5
Bulgaria	6.2	NA	1.3	NA
Slovakia	6.2	NA	0.9	NA
Poland	5.2	NA	0.9	NA
Hungary	6.2	6.7	0.9	1.0
Turkey	4.0	NA	1.0	1.1
Spain	4.5	5.6	0.8	1.0
Ireland	5.5	5.9	1.2	1.4
OECD Average	5.2	6.4	1.2	1.9
Korea	3.0	NA	0.5	NA
Malaysia	7.9	NA	2.0	NA
Singapore	5.0	NA	1.8	NA
Thailand	3.2	NA	0.6	NA

Source: UNESCO, OECD, and World Bank estimates (Circa 1993)
For East Asian Countries data is for 1985 (East Asian Miracle, World Bank (1993))

Within the Eastern European context, Romanian higher education expenditure is lower than average. This is also the case compared to the countries of the Organization for Economic Cooperation and Development (OECD), even considering countries at the lower end of the OECD income range, such as Spain or Turkey. Looking even further afield to some of the high performing Asian economies, where higher education has played a role in their economic success, Korea and Thailand show a public spending on higher education as a share of GDP that is about the same as Romania's. However, the private expenditures on higher education in Korea and Thailand is significant, a trend that has started in Romania, and is to be encouraged by policies of the higher education reform.

Comparing some of the East Asian economies with Romania in the late 1970s, when their GNP per capita (not adjusted for purchasing power parities) was not too different from that of Romania at present, shows a fairly similar pattern of enrollments. In the late 1970s, Romania's educational enrollment structure, in terms of primary, secondary and higher education, was roughly the same as that of Korea, Malaysia and Taiwan.

Table 3: GNP per capita in 1978 and Gross Enrollment Rates (1977)
(Source: World Development Report (1980))

Country	GNP per capita	Primary Enrollment Rate	Secondary Enrollment Rate	High Educ. Enrollment Rate
Malaysia	1090	93	43	3
Korea	1160	111	88	11
Taiwan	1400	100	76	12
Romania	1750	102	77	10

Ironically, in the late 1970s Romania's GNP per capita was listed in the World Bank's 1980 World Development Report as being higher than these countries by a significant amount, a situation that has been dramatically reversed by the sustained rapid growth of these economies and the steady economic decline of Romania, whose GNP per capita was about 50 percent of its 1980 level in 1993. While the East Asian economies continued investing in higher education, supported in the case of Korea by a sequence of World Bank sector investment loans, Romania's higher education stagnated. However, the lesson for Romania, and other Eastern European economies, is that as they expand their higher education, they should maintain their strong base of basic education, and they should also pursue a good mix of macro- and micro-economic policies in order to make the most effective use of their investments in human resources, as did the high performing economies of East Asia.

MONITORING COSTS AND BENEFITS OF HIGHER EDUCATION

The costs and benefit indicators discussed above have significant data limitations that prevent as complete an assessment as would be desirable. However, to overcome these data limitations, the project will address some of these data deficiencies by monitoring and refining sources of data and information throughout the project implementation. The household survey will be repeated in 1998 and will be analyzed to assess changes in the earnings-education relationship, especially in the private sector, which should be a larger proportion of total employment by that time. Other survey data will be available as well, such as a time series of employment and unemployment patterns based upon the new labor force surveys which started up in 1994. Special studies, such as tracer studies of graduates, will also be commissioned to keep track of what should be a fast changing labor market.

With respect to cost analysis, the new policy of formula funding for public institutions would generate relevant cost data by fields of study for each institution. This would provide policy relevant information that could be used to judge the efficiency and effectiveness of various programs. Relevant cost comparisons could be made that would help instill an appropriate sense of cost consciousness in higher education, while at the same time striving to improve its quality and relevance.

Attachment

VARIABLE	DESCRIPTION
lnEARN	log (gross monthly salary (last month)/CPI)
poorhh	1 if household is poor, 0 otherwise
male	1 if male, 0 otherwise
married	1 if married, 0 otherwise
gypsy	1 if gypsy, 0 otherwise
oethnic2	1 if german, or hungarian or other ethnic background, 0 otherwise
migrant	1 if ever migrated from place of birth, 0 otherwise
age	age in years
yrsed	years of school attendance (incl. repeated years)
exper	years of labor market (work) experience
exper2	exper*exper/100
tenure	years of work at current firm
tenure2	tenure*tenure/100
educ1	1 if no studies and cannot read or write, 0 otherwise
educ2	1 if no studies but can read or write, 0 otherwise
educ3	1 if completed primary school, 0 otherwise
educ4	1 if completed secondary school cycle I, 0 otherwise
educ5	1 if completed secondary school cycle II, 0 otherwise
educ6	1 if completed professional studies, 0 otherwise
educ7	1 if completed technical studies & apprenticeship, 0 otherwise
educ8	1 if completed technical training for foremen cycle II, 0 otherwise
educ9	1 if completed post-secondary studies, 0 otherwise
educ10	1 if completed 3-yr college, 0 otherwise
educ11	1 if completed 4-yr college, 0 otherwise
age1419	1 if 14<=age<=19, 0 otherwise
age2024	1 if 20<=age<=24, 0 otherwise
age2529	1 if 25<=age<=29, 0 otherwise
age3034	1 if 30<=age<=34, 0 otherwise
age3539	1 if 35<=age<=39, 0 otherwise
age4044	1 if 40<=age<=44, 0 otherwise
age4549	1 if 45<=age<=49, 0 otherwise
age5054	1 if 50<=age<=54, 0 otherwise
age55p	1 if age>=55, 0 otherwise
ifsick	1 if got sick during last month, 0 otherwise
public	1 if the firm is state-owned, 0 otherwise
private	1 if the firm is privately owned, 0 otherwise
mixed	1 if the firm is of mixed (private & public) ownership,
coop	1 if the firm is a coop, 0 otherwise
white	1 if white-collar occupation, 0 otherwise
blue	1 if blue-collar occupation, 0 otherwise
indus1	1 if industry code=1 (agriculture), 0 otherwise
indus2	1 if industry code=2 (mining)
indus3	1 if industry code=3 (processing)
indus4	1 if industry code=4 (public utilities)
indus5	1 if industry code=5 (construction)
indus6	1 if industry code=6 (retail/hotel& restaurant)
indus7	1 if industry code=7 (transport/communications)
indus8	1 if industry code=8 (finance),
indus9	1 if industry code=9 (real estate)
indus10	1 if industry code=10 (public admin)
indus11	1 if industry code=11 (education)
indus12	1 if industry code=12 (health and social assist)
indus13	1 if industry code=13 (social & personal serv)
indus15	1 if industry code=15 (international org)
nadmale	number of adult males (>=14 yrs old) in the household
nadfemi	number of adult females (>=14 yrs old) in the household
nchild	number of children (<14 yrs old) in the household
regstrd	1 if registered in the labor office, 0 otherwise
getben	1 if get unemployment benefits or supporting allowances, 0 otherwise
getpen	1 if get pension, 0 otherwise
lookjob	1 if currently looking for a job, 0 otherwise
avail	1 if available to start working within 2 weeks, 0 otherwise
rural	1 if rural area, 0 otherwise (urban)
reg1	1 if SE region, 0 otherwise
reg2	1 if SW region, 0 otherwise
reg3	1 if NW region, 0 otherwise
reg4	1 if NE region, 0 otherwise
reg5	1 if Bucharest, 0 otherwise

IV.A: DETERMINANTS OF MONTHLY EARNINGS

(g): USING DUMMY VARIABLES FOR EDUCATION LEVEL INSTEAD OF YEARS OF YEARS OF SCHOOLING (S)
(males and females pooled and incl. type of ownership, industry and white/blue collar dummies)

OLS estimates
Number of obs = 19858
F(50, 19807) = 160.20
Prob > F = 0.0000
R-squared = 0.2880
Adj R-squared = 0.2862
Root MSE = .41975

lnEARN	Coef.	Std. Err.	t	P>|t|
educ4	.0420565	.0190049	2.213	0.027
educ5	.1719756	.0201301	8.543	0.000
educ6	.1364151	.0200403	6.807	0.000
educ7	.0733003	.0259505	2.825	0.005
educ8	.2678637	.0251726	10.641	0.000
educ9	.2926688	.0249104	11.749	0.000
educ10	.4515946	.0296587	15.226	0.000
educ11	.5340114	.0228335	23.387	0.000
exper	.009672	.0011075	8.733	0.000
exper2	-.0219979	.0025112	-8.760	0.000
tenure	.0101602	.0012441	8.167	0.000
tenure2	-.015747	.0037285	-4.223	0.000
private	.0250699	.0116594	2.150	0.032
mixed	.0466472	.0223548	2.087	0.037
ccop	-.2595748	.0240571	-10.790	0.000
white	.0666835	.0248048	2.688	0.007
blue	.0009918	.0238039	0.042	0.967
migrant	.056698	.0065165	8.701	0.000
male	.1209105	.0088368	13.683	0.000
head	.0918368	.0083654	10.978	0.000
hungar	-.0182375	.0127331	-1.432	0.152
oethnic2	-.0726629	.0249927	-2.907	0.004
married	.0530471	.00783	6.775	0.000
rural	-.0401479	.0076023	-5.281	0.000
indus2	.5414238	.0181247	29.872	0.000
indus3	.0765894	.0128524	5.959	0.000
indus4	.3485944	.0192637	18.096	0.000
indus5	.1246621	.0161915	7.699	0.000
indus6	-.0818902	.0166777	-4.910	0.000
indus7	.182484	.0152148	11.994	0.000
indus8	.1992164	.0252229	7.898	0.000
indus9	-.0254048	.0424978	-0.598	0.550
indus10	.106242	.0178119	5.965	0.000
indus11	-.0978527	.0173174	-5.651	0.000
indus12	-.0393063	.0192571	-2.041	0.041
indus13	-.0680549	.0190088	-3.580	0.000
indus14	-.2761258	.079192	-3.487	0.000
indus15	.2488297	.1334858	1.864	0.062
reg1	.0617821	.0107259	5.760	0.000
reg2	.0263418	.0108833	2.420	0.016
reg3	.0085941	.0109481	0.785	0.432
reg4	.0275904	.0110922	2.487	0.013
month5	.0230182	.0123996	1.856	0.063
month6	.0653029	.0126128	5.178	0.000
month7	.0618467	.0125496	4.928	0.000
month8	.0878449	.0126158	6.963	0.000
month9	.1015107	.0125668	8.078	0.000
month10	.0864737	.0125149	6.910	0.000
month11	.1118256	.0125958	8.878	0.000
month12	.1737578	.0126883	13.694	0.000
_cons	11.04207	.0318213	347.002	0.000

IV.A: DETERMINANTS OF MONTHLY EARNINGS

(h): DIFFERENCES IN THE MARGINAL RATE OF RETUN TO SCHOOLING BETWEEN PUBLIC AND PRIVATE FIRMS USING DUMMY VARIABLES FOR EDUCATION LEVEL INSTEAD OF YEARS OF YEARS OF SCHOOLING (S)
(males and females pooled and incl. type of ownership, industry and white/blue collar dummies)

OLS estimates
Number of obs = 19858
F(64, 19793) = 127.13
Prob > F = 0.0000
R-squared = 0.2913
Adj R-squared = 0.2890
Root MSE = .4189

lnEARN	Coef.	Std. Err.	t	P>|t|
educ4	.0568199	.0198678	2.860	0.004
educ5	.1773182	.0211228	8.395	0.000
educ6	.1436135	.0209716	6.848	0.000
educ7	.0865295	.0274954	3.147	0.002
educ8	.2664667	.0262579	10.148	0.000
educ9	.2944817	.0259684	11.340	0.000
educ10	.4404123	.0308794	14.262	0.000
educ11	.5395444	.023961	22.518	0.000
exper	.0071847	.0011881	6.047	0.000
exper2	-.0171705	.0026737	-6.422	0.000
tenure	.0117739	.0013209	8.913	0.000
tenure2	-.0188245	.003893	-4.835	0.000
white	.0346941	.0258256	1.343	0.179
blue	-.024322	.024807	-0.980	0.327
private	-.2825018	.0939838	-3.006	0.003
mixed	.0469329	.0223151	2.103	0.035
coop	-.2578456	.0240217	-10.734	0.000
educ4pr	-.1482465	.0662418	-2.238	0.025
educ5pr	-.071732	.067996	-1.055	0.291
educ6pr	-.0766742	.0685436	-1.119	0.263
educ7pr	-.1249651	.08276	-1.510	0.131
educ8pr	.0148888	.0887874	0.168	0.867
educ9pr	.0085454	.0908895	0.094	0.925
educ10pr	.1395807	.1075664	1.298	0.194
educ11pr	-.0760223	.0745452	-1.020	0.308
exppr	.0167035	.003075	5.432	0.000
exp2pr	-.0353711	.0075633	-4.677	0.000
tenpr	-.0030473	.0044318	-0.688	0.492
ten2pr	-.0050912	.016716	-0.305	0.761
whitepr	.3229272	.0746853	4.324	0.000
bluepr	.2514724	.0729323	3.448	0.000
migrant	.056549	.0065067	8.691	0.000
male	.1210161	.0088262	13.711	0.000
head	.0898852	.0083538	10.760	0.000
hungar	-.0173242	.0127133	-1.363	0.173
oethnic2	-.0702948	.024969	-2.815	0.005
married	.0496106	.0078344	6.332	0.000
rural	-.0401678	.0075924	-5.291	0.000
indus2	.5390497	.0181038	29.776	0.000
indus3	.0744609	.0128458	5.797	0.000
indus4	.3475341	.0192322	18.070	0.000
indus5	.1228028	.0161748	7.592	0.000
indus6	-.0937226	.0169302	-5.536	0.000
indus7	.1810907	.0152015	11.913	0.000
indus8	.199536	.0251797	7.924	0.000
indus9	-.0206794	.0425101	-0.486	0.627
indus10	.1104274	.0177964	6.205	0.000
indus11	-.0916772	.0173221	-5.292	0.000
indus12	-.0377656	.0192368	-1.963	0.050
indus13	-.0704058	.0189864	-3.708	0.000
indus14	-.228055	.0794165	-2.872	0.004
indus15	.2351377	.1333407	1.763	0.078
reg1	.0618374	.010711	5.773	0.000
reg2	.0260241	.0108667	2.395	0.017
reg3	.0093747	.0109337	0.857	0.391
reg4	.0290554	.0110799	2.622	0.009
month5	.0230078	.0123792	1.859	0.063
month6	.0669382	.0125932	5.315	0.000
month7	.0627285	.0125303	5.006	0.000
month8	.0875501	.0125961	6.951	0.000
month9	.1013926	.0125467	8.081	0.000

month10	.0883552	.0124956	7.071	0.000
month11	.1121043	.0125789	8.912	0.000
month12	.1743489	.012667	13.764	0.000
_cons	11.07722	.0331718	333.935	0.000

ATTACHMENT: EARNINGS PROJECTIONS

RATE OF RETURN ESTIMATION (earnings and cost data in Romanian Lei)

Cost Benefit Stream	Direct Costs	Opportunity Costs & Sec Earnings	Years of Work	University Earnings
-2391043	-870000	-1521043	1	
-2405531	-870000	-1535531	2	
-2419475	-870000	-1549475	3	
-2432858	-870000	-1562858	4	
771943		-1575663	5	2347606
782093		-1587874	6	2369967
792013		-1599476	7	2391489
801690		-1610454	8	2412144
811114		-1620794	9	2431908
820272		-1630483	10	2450755
829154		-1639508	11	2468661
837747		-1647858	12	2485605
846042		-1655522	13	2501564
854028		-1662489	14	2516518
861695		-1668752	15	2530447
869033		-1674302	16	2543335
876033		-1679130	17	2555163
882685		-1683233	18	2565917
888981		-1686602	19	2575583
894913		-1689236	20	2584149
900473		-1691129	21	2591602
905654		-1692279	22	2597933
910449		-1692685	23	2603134
914851		-1692347	24	2607198
918856		-1691264	25	2610120
922457		-1689438	26	2611895
925650		-1686872	27	2612522
928430		-1683569	28	2612000
930795		-1679534	29	2610329
932740		-1674770	30	2607511
934264		-1669286	31	2603551
935365		-1663088	32	2598453
936040		-1656184	33	2592224
936289		-1648583	34	2584872
936113		-1640295	35	2576408
935511		-1631331	36	2566841
934484		-1621702	37	2556185
933034		-1611421	38	2544454
931162		-1600500	39	2531662
928872		-1588954	40	2517827
926167		-1576798	41	2502965
923051		-1564046	42	2487097
919527		-1550715	43	2470242
915601		-1536821	44	2452422
911278		-1522382	45	2433660

0.0750 IRR (Internal Rate of Return)

CRITERIA AND PROCEDURES FOR SUB-PROJECT SELECTION

COMPONENT II - UNDERGRADUATE AND CONTINUING EDUCATION

1. Objective

1.1 To support program development for undergraduate and continuing education in fields of high student and labor market demand. The sub-component will also support innovations in teaching methods, syllabi and/or assessment as well as new approaches to academic management.

2. Implementing Agency

2.1 The sub-component will be implemented by the National Higher Education Financing Council in collaboration with the National Council on Accreditation and Academic Evaluation.

3. Eligibility

3.1 All higher education institutions accredited to award undergraduate degrees, diplomas and certificates may submit applications.

3.2 Proposals must be judged by the National Council on Accreditation and Academic Evaluation to be compatible with the mission of the applying institution(s) and their development strategies in conformity with the Government higher education reform program.

4. Allowable Costs

4.1 Project funding may be used for equipment and library materials, consumables, printing and duplication of teaching and experimental materials, locally funded specialist services, teaching and administrative staff development and training, and minor building rehabilitation.

4.2 Funding will be provided for periods ranging from one to three years, with extension in exceptional cases for one to two years, subject to annual review of progress in achieving agreed objectives.

5. Selection Criteria

5.1 General criteria

Applications are assessed on the basis of rationale, institutional capacity and academic merit. Among the elements considered are:

a. Relevance or significance:

- To what extent does the proposal respond to national priorities of the HE reform?
- How and to what extent does the program curriculum respond to labor market demand, as indicated by employment and student demand?
- Relationship of proposals to long term development priorities established by the HE Councils
- To what extent does the project support important regional development requirements?

- To what extent is the proposal articulated with the institutional development plan?
- To what extent does the program complement any similar programs at other institutions?

b. Effectiveness:

- To what extent is there a sound project design that would achieve objectives, i.e. does the proposal clearly specify objectives, means of achievement and likely benefits?
- Degree of originality and expected contribution; the innovativeness of proposed teaching methods;
- Technical adequacy of the curricula and comparability with practices of leading European and North American institutions;
- Degree of proposed collaboration among institutions;
- Rigor of student selection procedures and criteria;
- Validity of testing/examination procedures.

c. Feasibility:

- To what extent is the program likely to be implemented as proposed?
- Human resource capability: qualifications of teaching staff; originality and quality of previous work;
- Institutional: capacity of the institution to carry out the grant;
- to what extent is the proposal supported by twinning or other external support?
- forecast numbers of students and the absorptive capacity of the institution; evidence of previous successful experience in developing such programs with external support from TEMPUS or other sources;
- impact on physical plant;
- sustainability after completion of grant funding
- Financial: -assurances on other sources of financing
- Scheduling: to what extent is the implementation schedule realistic?

d. Efficiency:

- Are the costs reasonable?
- Are the line items in the proposed budget appropriate?
- Relationship of budget to NHEFC cost norms;
- Cost savings owing to co-financing;
- Are the unit costs projected reasonable?
- To what extent is the proposal likely to lower unit costs and produce measurable benefits?

5.2 Priority criteria

- Proposals responding to the priorities of the Government's higher education reform policy, and which are closely articulated with the academic and budgetary plans of the applicant's institution;

- Proposals with multiple sources of financing;

- Proposals involving collaboration between institutions; and

Joint proposals by institutions serving well defined regional needs.

Priority would be given to programs in economics, management and business administration, and law.

6. Guidelines for Preparation of Proposals

6.1 Applicants must provide a brief description of the innovation to be supported, summarizing its objectives, structure and organization, and entry and graduation requirements. Applications should also present a program rationale providing evidence of student demand, likely employment opportunities, availability of further or complementary studies, an assessment of the unit's academic and administrative capacity to offer the program, curriculum vitae of the principal academic staff involved, a statement of the institution's academic reform strategy identifying programmatic priorities, and a comparison of the activity to similar programs offered by other institutions indicating what benefits would be achieved by funding the proposed activity. Results of any pilot projects should be presented, including lessons learned and corrective actions taken or to be implemented.

6.2 A detailed budget should be given describing all program development and pilot costs and the proportion of first year costs for which funding is requested. It must include justification of any salary, equipment or travel costs, and indicate clearly all institutional funding and any external funding for the activity to be supported, as well as any revenues to be generated.

7. Institutional Assessment of Program Development Proposals

7.1 The chief administrative officer of each eligible institution publicizes the program and distributes forms and explanatory material, receives applications, and organizes and supervises the internal review of proposals. This officer may also be designated the authorized representative of the institution's rector who will certify applications forwarded to the National Higher Education Financing Council.

7.2 Applicants must submit copies of their applications and supporting documentation in sufficient numbers for all members of the institution's review committees and to the chief administrative officer (or equivalent) of their institution. The original application form must be signed by the applicant's department head and dean as well as by the applicant.

7.3 All proposals should be reviewed, recommended and ranked by the appropriate faculty and institutional academic policy and budgetary planning committees.

7.4 The chief administrative officer ensures each recommended application is signed by the rector or his/her representative, and certifies that the review committees have observed proper procedures for evaluating proposals. The officer then submits to the National Higher Education Financing Council all recommended applications (each one in sufficient copies for the Council's Selection Committees), a copy of the reports of institutional review committees, certification that the required institutional procedures have been followed. A list of all members of review committees should also be submitted together with documents describing the institution's academic and budgetary plans and priorities.

8. Responsibilities of National Council on Accreditation and Academic Evaluation

8.1 Receives institutional proposals from National Higher Education Financing Council.

8.2 The National Council on Accreditation and Academic Evaluation reviews the proposals for compatibility with the institution's mission and capacity, as well as with respect to national accreditation standards.

8.3 If a new program is proposed, the relevant commission arranges for a review to establish eligibility for provisional authorization.

9. Responsibilities of National Higher Education Financing Council

9.1 Receives recommendations of the National Council on Accreditation and Academic Evaluation, and refers the reports to a Committee on Programs appointed by the National Higher Education Financing Council on the recommendation of the Council's Executive Committee and President.

9.2 The Committee on Programs reviews institutional submissions and ranks them with respect to financial sustainability, priorities established for development of the higher education system as a whole, reflecting future student demand and labor market needs, and in regard to system level efficiency of resource utilization.

9.3 Institutional submissions requiring capital investments related to program proposals are simultaneously reviewed by a Capital Grants Committee, appointed by the National Higher Education Financing Council on the recommendation of the Council's Executive Committee and President.

9.4 The Capital Grants Committee's recommendations take into account the capital investment plans as well as the facilities master plans prepared by the applying institutions.

9.5 The reports of the Capital Grants Committee are returned to the Committee on Programs which prepares a consolidated set of funding recommendations for review by the Executive Committee, consideration by the Council and decision by the Minister of Education.

10. Announcement of Program Grants and Preparation of Grant Agreements

10.1 On receipt of the Minister's approval of recommendations, notifications of awards and grant agreements are sent to applicants, with copies to the Rector, chief administrative officer, and head of financial services of the institution. A press release summarizing the awards made and indicating a contact for further information will be distributed to the media.

10.2 The grant agreement prepared by the National Higher Education Financing Council will usually stipulate program development "benchmarks" and enrollment targets to be achieved, in addition to institutional financing commitments.

11. Responsibilities of Project Coordination Unit

11.1 The Project Coordination Unit receives and reviews grant agreements approved by the Minister and signed by the authorized institutional representative, and makes periodic reports to the Bank.

11.2 The Unit advises institutions on procurement procedures, receives procurement requests, reviews them for correspondence with Bank and Government policies and authorizes these requests.

11.3 The Unit may assist institutions with procurement, particularly in the case of items requiring international competitive bidding.

11.4 The Unit prepares disbursement requisitions for execution by the budget offices of the Ministry of Education according to the terms and conditions of the grant agreements.

11.5 The Unit requests, receives and reviews interim and final financial and substantive reports from

institutions according to the monitoring schedule specified in the grant agreements.

12. Responsibilities of Ministry of Education

12.1 Receives payment requisitions from the Project Co-ordination Unit, and verifies them for completeness.

12.2 On receipt of duly completed requisitions for interim and final payments, issues payments.

12.3 Records all transactions according to agreed procedures, and reports them quarterly and annually to the Minister and the Project Co-ordination Unit.

13. Responsibilities of Recipient Institutions

13.1 Designates a chief administrative officer to be responsible for all aspects of the program at the institution.

13.2 Ensures complete information and application forms are widely publicized and available, and that the internal review processes are open, transparent and competitive.

13.3 Ensures that all terms and conditions of grant agreements are complied with in a prompt and efficient manner.

13.4 Maintains complete records of the activity supported and periodically monitor progress in achieving program objectives.

13.5 Ensures the completion and submission of interim and final substantive and financial reports, receipt of satisfactory final reports being a condition of disbursement of the last financial installment.

14. Monitoring and Auditing

14.1 The National Higher Education Financing Council monitors outcomes of program grants, particularly: a) enrollment, retention and completion rates; b) unit costs and costs per graduate; c) sustainability from institutional and self financing; and d) employment and earnings of graduates.

14.2 Programs developed with support from the National Higher Education Financing Council will be subject to evaluation by the National Council on Accreditation and Academic Evaluation as well as to mandated periodic quality review by the recipient institutions.

14.3 The National Higher Education Financing Council also reviews periodic financial reports from recipients for compliance with terms and conditions of grant agreements as well as with procurement, disbursement and accounting procedures stipulated by the loan agreement.

COMPONENT III - POSTGRADUATE EDUCATION AND RESEARCH

1. Objective

1.1 The overall objective of this component is to develop the next generation of academic staff needed to sustain and deepen higher education reform and prepare a cadre of professionals with advanced training

in the new fields required by a market economy.

2. Implementing Agency

2.1 Because postgraduate programs combine teaching and research activities, the National University Research Council will implement this component in collaboration with the National Council on Accreditation and Academic Evaluation, the National Council on Attestation of Academic Titles and Decrees, and the National Higher Education Financing Council.

2.2 The National University Research Council will make program grants to institutions, mainly for doctoral studies, and in exceptional cases, for Master's programs. These grants will in most cases lead to programs that will be sustained by core financing allocated through a formula by the National Higher Education Financing Council, giving funding priority to expanding postgraduate enrollments and strengthening second and third cycle programs.

2.3 The National University Research Council will also be responsible for making grants for research related training to individuals and teams of principal investigators of exceptional merit. The Council will provide such support through funding a major research grants program and a program supporting the establishment of multi-user facilities centers for advanced training. These programs will facilitate concentration of scarce research funding on centers of excellence especially for doctoral training.

A. Postgraduate Program Development

3. Objective

3.1 Sub-projects would support development and strengthening of Master's and especially doctoral studies through provision of critical instructional and research inputs and collaboration with domestic and foreign institutions.

4. Eligibility

4.1 Accredited higher education institutions whose postgraduate programs have been authorized by the National Council for Accreditation and Academic Evaluation and whose procedures for awarding doctoral degrees are in conformity with the standards established by the National Council for the Attestation of Academic Titles and Degrees.

4.2 Proposals for new postgraduate programs must be submitted to the National Council for Accreditation and Academic Evaluation for authorization and funding is contingent on the Council's approval of such requests.

5. Allowable Costs

5.1 The following costs are eligible for support: costs of equipment and library materials; consumables; printing and duplication of teaching materials; locally funded specialist services; teaching and administrative staff development; and minor building rehabilitation.

5.2 Funding will be provided for periods ranging from one to three years, with extensions in exceptional cases for one to two years, subject to annual reviews of progress in achieving agreed objectives.

6. Selection Criteria

6.1 General criteria

Applications are assessed on the basis of rationale for support, institutional capacity and academic merit. Among
the elements considered are:

a. Relevance or significance:

- To what extent does the proposal respond to the long term developmental priorities established by the NHEFC for the higher education system?
- How and to what extent does the program curriculum respond to labor market demand, as indicated by employment and student demand?
- Relationship of proposals to long term development priorities established by the Higher Education Councils
- To what extent does the project support important regional development requirements?
- To what extent is the proposal articulated with the institutional development plan?
- To what extent does the program complement any similar programs at other institutions?

b. Effectiveness:

- To what extent is there a sound project design that would achieve objectives, i.e. are objectives clearly specified, means of achievement and likely benefits?
- Degree of originality and expected contribution; the innovativeness of proposed teaching methods;
- Technical adequacy of the curricula and comparability to practices of leading European and North American institutions;
- Degree of proposed collaboration among institutions;
- Rigor of student selection procedures and criteria;
- Validity of testing/examination procedures.

c. Feasibility:

- To what extent is the program likely to be implemented as proposed?
- Human resource capability: qualifications of teaching staff; originality and quality of previous work;
- Institutional: capacity of the institution to carry out the grant;
- to what extent is the proposal supported by twinning or other external support?
- forecast numbers of students and the absorptive capacity of the institution;
- impact on physical plant;
- sustainability after completion of grant funding
- Financial: -assurances on other sources of financing
- Scheduling: to what extent is the implementation schedule realistic?

d. Efficiency:

- Are the costs reasonable?
- Are the line items in the proposed budget appropriate?
- Relationship of budget to NHEFC cost norms;
- Cost savings owing to co-financing;
- Are the unit costs projected reasonable?
- To what extent is the proposal likely to lower unit costs and produce measurable benefits?

Priority would be given to development of advanced training in the applied social sciences, the professions, and also to new course as well as research based programs in technical fields designed to broaden and raise students' expertise to the highest international standards.

6.2 Priority criteria

- Proposals which support well defined research and training missions of the sponsoring institution;

- Proposals to establish or expand doctoral training in fields of high student demand at the undergraduate level where staffing needs are greatest;

- Proposals to establish or strengthen inter-disciplinary studies or programs, involving collaboration of two or more academic units;

- Joint proposals to strengthen collaboration between higher education and research institutions in advanced scientific training; and

- Proposals which build on twinning or other formal collaborations with foreign higher education institutions supported by bi or multi-lateral funding.

Priority would be given to development of advanced training in the applied social sciences, the professions, and also to new course as well as research based programs in technical fields designed to broaden and raise students' expertise to the highest international standards.

7. Guidelines for Preparation of Proposals

7.1 Applicants must provide a brief summary of the activities to be supported, summarizing the objectives, scope of work to be carried out, beneficiaries and expected outcomes. Proposals to support new programs should describe: a) the structure and organization of coursework; b) entry and graduation requirements; c) projected enrollment; d) core staff and their qualifications; e) available instructional facilities, library holdings, and research equipment; and f) future staffing and facilities requirements.

7.2 All proposals should also present a program rationale providing data on student demand and likely employment opportunities for graduates, availability of further or complementary studies and/or research training, evidence of the unit's capacity to offer the proposed program or studies, and a comparison to similar offerings at other institutions indicating what benefits would be achieved by supporting the proposed program or activity.

7.3 Proposals should be accompanied by a comprehensive multi-year budget describing all investment and recurrent costs associated with the proposed program or activity, and the sources of financing, including institutional, private, and/or foreign funding--obtained or anticipated--as well as a detailed statement of the funds requested.

8. Institutional Assessment of Proposals

8.1 The chief administrative officer of each eligible institution receives applications, and organizes and supervises the internal review of proposals.

8.2 The original application form must be signed by the applicant's department head and dean as well as by the applicant.

8.3 All proposals should be reviewed, recommended and ranked by the appropriate faculty and institutional academic policy and budgetary planning committees.

8.4 The chief administrative officer ensures that each recommended application is signed by the rector or his/her representative, and certifies that the review committees have observed proper procedures for evaluating proposals.

9. Responsibilities of the National Councils on Accreditation, Attestation of Academic Titles, and Higher Education Financing

9.1 Disciplinary commissions of the National Council on Accreditation and Academic Evaluation review new program proposals for compatibility with national guidelines for development of postgraduate programs.

9.2 The National Council on Attestation of Academic Titles and Degrees reviews all proposals involving doctoral programs or doctoral studies for adherence to national standards relating to the requirements of the doctoral degree, including policies pertaining to the qualifications of staff authorized to guide doctoral students and the examination of dissertation research.

9.3 The National Higher Education Financing Council receives proposals vetted by the councils on accreditation and attestation of academic titles, and evaluates them on the basis of financial feasibility, institutional capability, and national need.

10. Responsibilities of the National University Research Council

10.1 Disciplinary panels of the National University Research Council, receive all proposals which have been favorably recommended by the other councils, and review, score and rank them for funding according to academic merit and the research credentials of core staff.

10.2 The Council's secretariat gives each panel a preliminary estimate of the funds available for allocation, reflecting the distribution of requests, previous budget commitments, and priorities established by the Council.

10.3 The Council's secretariat normalizes scores given by the panels, prepares a consolidated ranking of proposals to the Council, and establishes a threshold score based on available funding.

10.4 The Council may adjust this threshold and/or adjust the "cut-off" scores recommended for particular panels, and prepares a consolidated recommendation for decision by the Minister of Education.

10.5 On receipt of the Minister's approval of recommendations, the Council makes a public announcement of awards, and prepares grant agreements which will usually stipulate program development "benchmarks" and enrollment targets to be achieved, in addition to institutional financing commitments.

11. Grant Disbursement, Reporting, Monitoring and Auditing

11.1 The Project Coordination Unit receives and reviews grant agreements approved by the Minister and signed by the authorized institutional representatives, and makes periodic reports to the Bank.

11.2 The Unit advises institutions on procurement procedures, receives procurement requests, reviews and authorizes disbursement by the budget office of the Ministry of Education according to the terms and conditions of the grant agreements.

11.3 The recipient institution shall maintain complete records of the activity or program supported, and ensure submission of interim and final substantive and financial reports to the National University Research Council according to the monitoring schedule specified in the grant agreements.

11.4 The National University Research Council audits the use of grant funds and forwards substantive and financial reports to the Project Co-ordination Unit for review and approval.

11.5 Receipt of a satisfactory final substantive and financial report is required for release of the last financial installment.

11.6 Postgraduate programs supported by the National University Research Council shall be subject to evaluation by the National Council on Accreditation and Academic Evaluation as well as to mandated periodic quality review by the recipient institution.

11.7 The National University Research Council monitors the outcomes of program grants, particularly, the output and placement of doctoral students in positions in Romanian higher education and research institutions.

B. Major Research Awards

12. Objective

12.1 The objective is to support staff projects which provide research training for Master's and doctoral students in order to improve the quality and increase the output of postgraduate programs.

13. Eligibility

13.1 All academic staff working in accredited higher education institutions.

13.2 Staff may apply for support individually or as members of research teams.

13.3 Research team members may be affiliated to institutes of the Romanian Academy or other public research institutions engaged in collaborative studies with staff or students in an accredited higher education institution.

14. Allowable Costs

14.1 Funding would be provided to purchase of equipment and consumables, acquisition of scientific documentation, for professional travel, locally funded specialist services (including research assistants, technicians, and principal investigators), and costs of minor building rehabilitation.

14.2 Funding would be granted for projects of between one to three years in duration, subject to annual review of progress in achieving agreed objectives.

15. Selection Criteria

15.1 General criteria

Priority will be given to proposals which meet the following criteria:

a. Relevance and significance:

- To what extent proposals will expand and strengthen the capacity of research units and researchers who are active in postgraduate training;
- Potential contribution to training highly qualified personnel in fields where staffing needs are greatest in the higher education system, and the actual and potential contribution of the proposed research program to strengthening national and foreign scientific cooperation and collaboration;
- To what extent proposals will support expansion of training in fields and at institutions of importance to regional development where economic opportunities can be demonstrated.

b. Effectiveness:

- Research achievements of the principal investigators;
- Policies governing access, and in particular, access for Master's and doctoral students;
- Potential for developing effective research networks within and outside the recipient institution;
- Appropriateness of and demand for the equipment or facility.

c. Feasibility:

- Demonstrated success of principal investigators in generating research funding,
- Capacity of principal investigators to give effective support to a network of research activities within and outside the recipient institution;
- Proposals which will build on the comparative advantage of particular units and institutions in the national context of postgraduate training and research.

d. Efficiency:

- The extent of multiple sources of financing;
- Potential for using the equipment or facility beyond the life of the current and proposed projects.

15.2 Priority criteria:

- Principal investigators with demonstrated scientific accomplishments;

- Proposals supporting well defined research tasks for Master's and doctoral students leading to the fulfillment of their thesis requirements;

- Requests that will strengthen national and particularly foreign scientific collaboration in advanced training; and

- Projects that will be co-financed from domestic or foreign research funding bodies.

The distribution of funding among fields would depend on, in addition to the quality of proposals and the extent of selectivity, priorities established by the National University Research Council reflecting the Government's overall economic reform strategy.

16. Guidelines for Preparation of Proposals

16.1 Applicants must furnish a project proposal describing the scope and objectives of the study or studies to be carried out, its theoretical or practical significance, a summary of related research, the methodology and instrumentation to be employed, the plan of work, and an indication of the roles and responsibilities of principal investigators and all postgraduate students involved in the activity.

16.2 Principal investigators should supply a curriculum vitae as well as a comprehensive list of all funded research, postgraduate students supervised, and publications in collaboration with present and former students and collaborators.

16.3 Project budgets should be submitted with a detailed justification of requests particularly for funds to acquire scientific equipment and professional travel, and sources and amounts of non-institutional co-financing likely or already obtained.

17. Responsibilities of Sponsoring Institution

17.1 Proposals and project budgets should be authorized by the research grants officer of the institution sponsoring the project.

17.2 The sponsoring institution agrees to provide specialized facilities and services needed to successfully complete the proposed project, and any resources for normal operating or maintenance expenses.

17.3 The sponsoring institution ensures that the proposed research activities conform to accepted ethical guidelines relating to research with human or animal subjects and/or research posing health or environmental hazards.

17.4 Review is the responsibility of institutional ethnics review committees established to implement guidelines prepared by the National University Research Council.

17.5 The sponsoring institution agrees to all terms and conditions of grant agreements, and ensures that these are complied with in a prompt and efficient manner.

17.6 The sponsoring institution maintains all financial records and ensures completion and submission of interim and final substantive and financial reports, receipt of a satisfactory final report being a condition of disbursement of the last financial installment.

18. Responsibilities of the National University Research Council

18.1 Each disciplinary panel identifies up to three external assessors or reviewers for the proposals referred to it.

18.2 Panels review, score, rank and make recommendations for funding proposals according to academic merit, taking into account assessors reports and available resources. Importance will be given to: a) past academic results as demonstrated by publications, research awards, students graduated, and professional distinctions of the principal investigators; b) the proposed project's potential contribution to knowledge; and c) especially to how the project would strengthen postgraduate training capacity.

18.3 The Council shall ensure that there shall be no conflict of interest in evaluating proposals.

A member of the Council, a selection panel, or an assessor is in a conflict of interest when the member:

- is the applicant, co-applicant or co-signer of a proposal; or
- is from the same institution/institute or belongs to the same research unit as the applicant; or
- has an administrative or family link with the applicant (e.g., head of the department or unit, dean of the faculty, etc.); or
- is or has been recently involved in a dispute with the applicant or an important member of the applicant's team; or
- is or has been the supervisor of the applicant when the applicant was a student.

18.4 The Council's secretariat normalizes the results of the evaluations of the various panels and prepares a consolidated ranking of projects recommended for approval by the Council.

18.5 The Council makes final recommendations on research awards to the Minister of Education, taking into account the number, distribution and quality of requests, available resources, and postgraduate training priorities for the higher education system reflecting present and future staffing needs.

18.6 On notification Ministerial approval of its recommendations, the Council makes a public announcement of the results of research competitions and prepares grant agreements stipulating the terms and conditions of awards, including "benchmarks" for the output of Master's and doctoral graduates.

18.7 The Council advises the Project Co-ordination Unit on procurement and also disbursement of budgetary requests which will executed by the budget office of the Ministry of Education according to the terms and conditions of grant agreements, subject to authorization by the Project Co-ordination Unit.

19. Monitoring and Auditing

19.1 The National University Research Council receives and audits all financial reports for conformity to Government and Bank procedures, prior to their review by the Project Co-ordination Unit.

19.2 The National University Research Council monitors the performance of all major research grants, especially, publications resulting from funded activities, external research co-financing obtained, the number of postgraduate students graduated, length of training and placement of graduates, and the growth in the number of applications for Master's and doctoral studies in the academic and research units involved.

C. Multi-User Centers for Advanced Training

20. Objective

20.1 The objective is to create centers of excellence in the higher education system by providing resources to support collaboration among researchers and research groups in advanced scientific training.

20.2 The program would stimulate regional training and research capabilities, reducing institutional duplication, and allowing scarce national resources to be employed more efficiently.

21. Eligibility

21.1 All accredited higher education institutions with authorized postgraduate programs in the fields proposed for support.

21.2 Any institute of the Romanian Academy or other public research institute with the capacity to offer doctoral studies which has entered into a collaboration with a higher education institution to support advanced training.

21.3 Any consortium of higher education and research institutions led by one or more of the institutions which satisfy the above requirements.

22. Allowable Costs

22.1 Funding would be provided for the acquisition of major research equipment/instrumentation, expansion of faculty or central libraries, to establish or augment existing Internet and interactive communications capabilities, for necessary building rehabilitation, and to support short term studies at foreign laboratories and higher education institutions possessing facilities or equipment unavailable in Romania.

22.2 No funding would be made available to support direct research costs or operations and maintenance costs associated with these investments as these costs are to be financed by external research funding, private financing, user charges, and institutional core budget contributions.

23. Selection Criteria

23.1 Program funding will be concentrated on expanding the capacity of academic and research units, teams, and institutions which have demonstrated success in generating research funding, are active in postgraduate training and which can function effectively as a locus for supporting a network of research and training activities within and outside the recipient institution (s).

Applications are assessed on the basis of rationale, institutional capacity and academic merit. Among the elements considered are:

a. Relevance or significance:

- To what extent does the proposal respond to national priorities of the Higher Education reform?
- Relationship of proposals to long term development priorities established by the NURC.
- To what extent does the project support important regional development requirements?
- To what extent does the proposed center complement activities at other institutions?
- To what extent will it contribute to training of highly qualified personnel?

b. Effectiveness:

- To what extent is there a sound project design that would achieve objectives, i.e. are objectives clearly specified, means of achievement and likely benefits?
- The originality and significance/quality of previous work of principal investigators, and the degree of originality and expected contribution;
- Degree of proposed collaboration among institutions;
- Suitability of theoretical perspectives;
- Appropriateness of research strategies or methodology;
- Feasibility and soundness of design;
- Plans for communication of results.

c. Feasibility:

- Demonstrated success in generating research funding;
- Extent of contribution to postgraduate training;
- Potential to function effectively as a locus for supporting a network of research and training activities within and outside the recipient institution(s);
- To what extent is the program likely to be implemented as proposed?
- Human resource capability: qualifications of principal investigators (originality and quality of previous work; monographs and refereed publications; published reviews of applicant's work; research reports and papers; contributions to training highly qualified personnel; previous competitive grants received; participation in collaborative research activities/networks; academic awards and distinctions; other contributions to the field; etc.);
- Institutional: capacity of the institution to carry out the grant;
- to what extent is the proposal supported by twinning or other external support?
- forecast numbers of postgraduate students and the absorptive capacity of the institution;
- impact on physical plant;
- Financial:
  - assurances on other sources of financing
  - sustainability after completion of grant funding
- Scheduling: to what extent is the implementation schedule realistic?

d. Efficiency:

- Are the costs reasonable?
- Are the line items in the proposed budget appropriate?
- Relationship of budget to NURC cost norms;
- Cost savings owing to co-financing;
- Are the unit costs projected reasonable?
- To what extent is the proposal likely to lower unit costs and produce measurable benefits?
- Contributions in kind and funding from other sources, including the host institution.

23.2 Priority will be given to requests that:

- will foster a tradition of excellence in advanced training and research as well as strengthen documented inter and intra-institutional collaborations;

- will have the maximum impact on expanding the training capabilities for Master's and

doctoral students in fields where staffing needs are greatest in the higher education system;

- will support expansion of training in fields and at institutions of importance to regional development where economic opportunities can be demonstrated; and

- will build on the comparative advantage of particular units and institutions in the national context of postgraduate training and research.

The distribution of funding among fields would depend on, in addition to the quality of proposals and the extent of selectivity, priorities established by the National University Research Council reflecting the Government's overall economic reform strategy.

24. Guidelines for Preparation of Proposals

24.1 Requests should be accompanied by: a) a full justification for the special instrumentation, scientific documentation or special equipment to be obtained, including information on the availability of similar equipment and facilities elsewhere in the country, or the lack of thereof; b) a brief description of the characteristics and requirements of all likely present and future users, their academic units and institutional affiliations, research needs, and funding sources; c) identification of the facility in which any equipment/instrumentation will be located, its size, physical characteristics as well as the availability of related instrumentation and technical and service personnel; d) a proposal indicating how access to the facilities or equipment to be acquired will be regulated, charges for services and consumables recovered, the maintenance plan, and procedures for monitoring utilization; and e) a description of how the facility will be administered, access procedures and how any incremental recurrent costs of acquisitions of equipment or documentation will be financed.

24.2 Proposals should also contain all relevant supporting documentation such as letters of agreement among participating academic units and institutions describing arrangements for sharing of facilities and equipment as well as the associated costs, detailed information on the number and fields of study of postgraduate students to be involved, the curriculum vitae of core staff, and a development plan for the center endorsed by the chief administrative officers of the participating institutions.

24.3 Budget requests should include technical specifications and cost estimates for major acquisitions, including an assessment of options, an assessment of all facilities requirements and rehabilitation needs, and a multi-year budget plan showing projected operating and investment costs, cost-recovery, institutional and other sources of financing.

25. Responsibilities of Recipient Institutions

25.1 Documentation, instrumentation or special equipment acquired under this program shall become the property of the institution which provides the necessary facilities, administrative, technical and support services for their use.

25.2 In the case of consortia of institutions seeking support, letters of agreement must specify how major acquisitions will be distributed and describe procedures governing accessibility and cost-sharing.

25.3 Recipient institutions are responsible for all major rehabilitation involving costs above US$25,000 and for all incremental recurrent costs, including costs of consumables, maintenance contracts for scientific instrumentation, and salaries of technicians.

25.4 Recipient institutions are responsible for ensuring access to specialized facilities as well as for

monitoring their utilization and management.

25.5 Recipient institutions shall seek the prior approval of the National University Research Council for any major changes in the location, configuration of equipment/instrumentation, management, or use of the specialized facilities supported.

26. Responsibilities of the National University Research Council

26.1 An ad hoc committee of the National University Research Council, composed of representatives of its disciplinary panels, shall receive funding requests, select external assessors (including foreign experts where appropriate), review and short list applications, organize site visits to institutions, and make recommendations to the Council for funding.

26.2 The Council shall make final recommendations to the Minister of Education, taking into account the postgraduate training capacity development priorities, the training and research needs as well as institutional capabilities of the different regions, and the objective of balanced regional development of the higher education system.

26.3 On notification of Ministerial approval of its recommendations, the Council makes a public announcement of the results of the competition and prepares grant agreements with the recipient institution (or with the lead institution in a consortium), stipulating the terms and conditions of the award, including "accessibility"and utilization norms, co-financing targets, as appropriate.

26.4 The Council will assist the recipient institution on the procurement of special equipment/instrumentation or scientific documentation, and will advise the Project Co-ordination Unit on procurement matters and also on disbursement requests which will be executed by the budget office of the Ministry of Education according to the terms and conditions of the grant agreements, subject to authorization by the Project Co-ordination Unit.

27. Monitoring and Auditing

27.1 The National University Research Council shall make periodic inspections of the centers supported to ensure compliance with grant agreements, and make recommendations concerning improvement of the utilization and management of facilities.

27.2 Corrective actions should be taken within three months of the receipt of reports to the chief administrative officer of the recipient and/or lead institution, or sanctions shall be imposed against such institution(s), including in extreme cases, loss of eligibility for all research support provided by the Council.

27.3 The National University Research Council shall commission studies to monitor the training and research impact of the centers, including the volume of published research produced by staff and students using center facilities, amount and sources of research grant funding obtained by principal investigators, the number and distribution of research and training collaborations, and the number of Master's theses and doctoral dissertations produced by students involved in research teams.

SECTOR AND PROJECT MONITORING INDICATORS

Sector Indicators

Macro:

Higher increase in real public expenditure for compulsory versus higher education

Increase in private share of total higher education expenditure

Increase in private share of recurrent costs of public higher education

Increase in cost recovery from students as a proportion of private financing in public higher education

Increase in per student expenditure in public and private higher education

Increase in proportion of state budget allocation used for program and capital investments

Increase in proportion of state budget allocation used to support teaching budgets

Decrease in proportion of state budget allocation for student welfare

Increase in proportion of student support directed to needy but talented students

Reduction in variation in undergraduate unit costs among institutions and between fields

Increase in the proportion of public R&D expenditure used to support academic and fundamental research

Enrollment:

Increase in private share of total higher education enrollment

Increase in absolute and relative number of full time equivalent students in part-time and continuing education programs

Increase in the proportion of full time students enrolled in diploma (short-cycle) and certificate programs

Increase in the postgraduate share of full time equivalent enrollment in public higher education institutions with 10,000 or more students

Increase in the number of Master's students

Increase in the number of full-time doctoral students

Increase in the proportion of undergraduate students graduating with double majors or major and minor concentrations

Programs: Increase in the number of elective programs and proportion of elective coursework offered at the undergraduate and collegiate levels

Reduction in the number of specialized degree programs offered in engineering fields

Increase in number of short-cycle collegiate programs

Increase in the number of continuing education and part-time courses

Increase in the number of certificate programs

Increase in the number of course based doctoral programs

Reduction in the number of hours of compulsory instruction for undergraduate programs

Increase in the number of institutions using a credit system for undergraduate degree, diploma or certificate programs

Staffing: Increase in student to staff ratio in agriculture, engineering and performing arts

Reduction in variation in student to staff ratio in economics, management, social sciences and law.

Reduction in the number of academic staff vacancies

Increase in the proportion of academic staff at the level of lecturer or above qualified with doctoral or equivalent degrees

Increase in the proportion of full time to total staff in private higher education institutions

Increase in student to staff ratio in institutions with 5,000 or fewer students

Costs/Efficiency: Decrease in the absolute number of higher education institutions and teaching faculties

Increase in the number of higher education institutions sharing research, teaching, residential and catering facilities

Increase in the number of privately operated/managed student hostels and

refectories

Increase in space utilization in engineering and technical institutions

Reduction in the number of years needed to complete doctoral programs
Increase in the proportion of students who complete undergraduate diploma and degree programs in the normal length of study

Increase in the ratio of un-tenured to tenured academic staff

Reduction in the ratio of non-academic to academic salary costs in institutional budgets

Quality: Increase in selectivity in admissions to undergraduate and collegiate programs

Increase in selectivity in admissions to postgraduate programs

Increase in the number of foreign students applying for and admitted to postgraduate programs

Increase in the minimum academic standards for awarding and determining renewal of student support

Increase in the proportion of programs and institutions "authorized" by National Council on Accreditation and Academic Evaluation as well as in its proportion of students pursuing equivalency examinations

Increase in the number of postgraduate and postdoctoral fellowships awarded to Romanians from foreign sources

Increase in amount and ratio of foreign research funding to domestic funding secured by academic staff

Increase in the volume and success rate of Romanian researchers seeking research funding from competitive European funding sources

Increase in the volume of mainstream scientific research surveyed by the Institute for Scientific Information, in the number of authors and in number of citations per paper

Increase in number of citations in mainstream research to papers in Romanian scientific journals and publications

Increase in the number of academic staff/postgraduate and postdoctoral students involved in funded collaborative research with colleagues in foreign countries

Governance/ Management:

Increase in the number of institutions with independent governing boards

Increase in the number of institutions with separate structures for administration and academic management

Increase in the number of institutions which select academic managers and administrators through a panel review process

Increase in the number of institutions with planning, management information and budgeting units

Increase in use of forward budget planning by institutions and cost, efficiency performance based internal resource allocation mechanisms

Increase in the number of institutions carrying out cyclical review of academic programs

Increase in the proportion of institutional budgets allocated on a discretionary basis

Increase in the number of institutions establishing specialized units with professionally trained staff to manage student financial support and services, recruit private financing, use of physical and financial assets and alumni relations, use of instructional and research facilities, instructional support services, research funding and industrial relations, and personnel services

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3.18 Bratianu, C. and Dumitrache, I., "Income Generating Activities in Higher Education."

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4.9 Stanescu, V., "The Financing of Activities of the Romanian Academy by the Elias Foundation."

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6.2 Aresta, S., "The U.S. System of Financing Higher Education and the Role of Admission, Career and Alumni Departments."

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INSTITUTIONS PARTICIPATING IN THE PILOT STUDY
ON INSTITUTIONAL REFORM

1. The Polytechnics University of Bucharest
2. University of Bucharest
3. The "Carol Davila" University of Medical Studies of Bucharest
4. The "Ion Mincu" University of Architecture of Bucharest
5. The Academy of Film and Theater of Bucharest
6. The "Alexandru Ioan Cuza" University of Iasi
7. The University of Timisoara
8. The University of Craiova
9. The "Ion Ionescu de la Brad" Agricultural University of Iasi
10. The University of Medical Studies of Timisoara
11. The "Gheorghe Dima" Academy of Music of Cluj-Napoca
12. The Institute of Civil Marine of Constanta
13. The "Dunarea de Jos" University of Galati
14. The "1 Decembrie" University of Alba-Iulia
15. The Technical University of Timisoara
16. The "Iuliu Hatieganu" University of Medical Studies and Pharmacy of Cluj-Napoca
17. The "Transilvania" University of Brasov
18. The University of Agricultural Sciences of Cluj-Napoca
19. The Technical University of Cluj-Napoca
20. The University of Agricultural Sciences of Banat
21. The University of Ploiesti
22. The Academy of Economic Studies of Bucharest

PILOT STUDIES CARRIED OUT BY ROMANIAN CONSULTANTS IN 1995 AND EARLY 1996

Pilot Study on Unit Costs Paper

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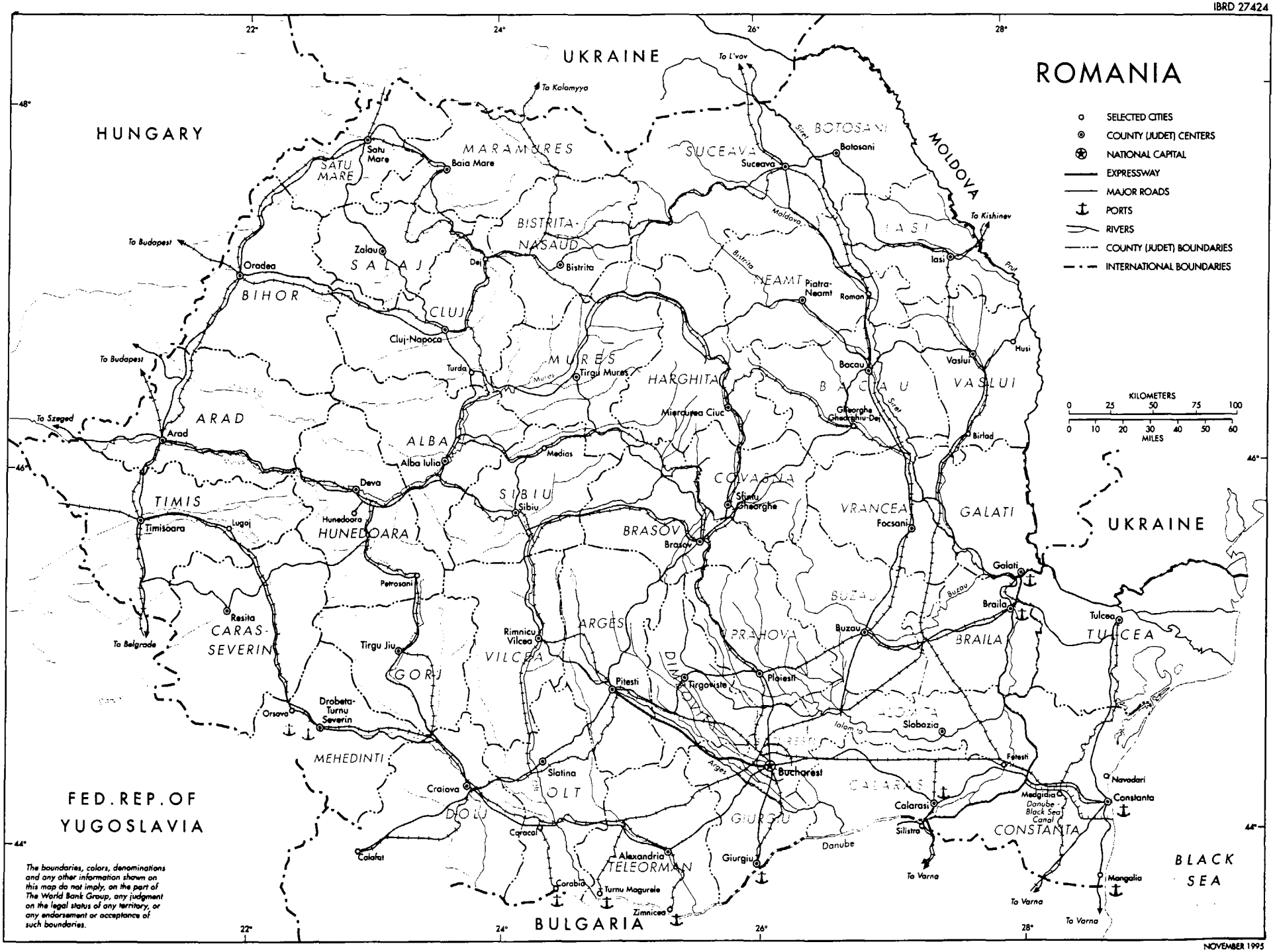

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