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REPORT AND RECOMMENDATION
OF THE
PRESIDENT OF THE
INTERNATIONAL BANK FOR RECONSTRUCTION AND DEVELOPMENT
TO THE
EXECUTIVE DIRECTORS
ON A
PROPOSED LOAN
TO THE
INVESTMENT BANK
WITH THE GUARANTEE OF
THE SOCIALIST REPUBLIC OF ROMANIA
FOR A
POST EARTHQUAKE CONSTRUCTION ASSISTANCE PROJECT

May 17, 1978

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CURRENCY EQUIVALENTS

Currency Unit: Leu (plural Lei)

1. Official Rate

Lei 4.47	=	US\$1.00
Leu 1.00	=	US\$0.22

2. Tourist Rate

Lei 12.00	=	US\$1.00
Leu 1.00	=	US\$0.08

3. Conversion Rate for Traded Goods

Lei 18.00	=	US\$1.00
Leu 1.00	=	US\$0.06

The official exchange rate of lei 4.47 per US\$1 is used only for accounting purposes. The rate used for tourist transactions is lei 12 per US\$1, having been revalued from a rate of lei 14.38 per US\$1 in October 1974. Beginning in March 1978, a trading rate of lei 18 per US\$1 has been used to convert the prices of all traded goods; this rate is considered representative of the average cost of convertible foreign exchange. The rate of lei 18 per US\$1 is being used by the Government to convert national income statistics from lei to dollars. Consequently, this rate has been used as the base rate for calculation in the appraisal.

Fiscal Year

January 1 to December 31

GLOSSARY OF ABBREVIATIONS

NCEE	-	National Center for Earthquake Engineering
INCERC	-	Building Research Institute
NCS	-	National Center for Seismology

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ROMANIA

POST EARTHQUAKE CONSTRUCTION ASSISTANCE PROJECT

LOAN AND PROJECT SUMMARY

Borrower: Investment Bank of Romania.
Guarantor: Socialist Republic of Romania.
Amount: US\$60 million.
Terms: Repayable in 15 years, including 3 years of grace, through semi-annual installments, with interest at 7.5 percent per annum.

Project Description: The project seeks to help the Government meet the remaining needs of delayed reconstruction and deferred construction activities, which resulted from the earthquake. The project would assist damaged enterprises requiring immediate reconstruction, enterprises in critical industrial sub-sectors related to the construction sector in accelerating expansion of capacity, and the National Center for Earthquake Engineering, being developed as part of the Protection Plan. The project faces no special risks.

Estimated Scope of Financing: 1/

<u>Item</u>	<u>US\$ millions</u>		<u>Foreign as % of Total</u>
	<u>Foreign</u>	<u>Total</u>	
Damaged Enterprises	13.5	13.5	100
Producers of Construction Materials	4.5	4.5	100
Manufacturers of Machinery and Plant for Construction Related Industry	25.0	25.0	100
Manufacturers of Construction Equipment	20.0	20.0	100
National Center for Earthquake Engineering	<u>7.0</u>	<u>7.0</u>	<u>100</u>
Total	70.0	70.0	100

Estimated Disbursements:

	<u>US\$ million</u>			
	<u>Bank FY</u>	<u>1979</u>	<u>1980</u>	<u>1981</u>
Annual		30.0	20.0	10.0
Cumulative		30.0	50.0	60.0

1/ This represents the limit out of which items totalling US\$60 million will be financed from the Bank loan.

Internal Economic
Return:

An internal economic rate of return was not calculated for this project since it would comprise a large number of sub-projects in different categories giving different kinds of assistance which constitute a small part of the very large expansion plans of some of the beneficiaries. These also produce for a number of sectors other than the construction sector. Therefore the project does not lend itself to precise quantification of economic costs and benefits. The impact of the project would be monitored during the period of disbursement of the Bank loan.

INTERNATIONAL BANK FOR RECONSTRUCTION AND DEVELOPMENT

REPORT AND RECOMMENDATION OF THE PRESIDENT OF THE IBRD
TO THE EXECUTIVE DIRECTORS ON A PROPOSED LOAN TO
THE INVESTMENT BANK OF ROMANIA
WITH THE GUARANTEE OF THE SOCIALIST REPUBLIC OF ROMANIA,
FOR A POST EARTHQUAKE CONSTRUCTION ASSISTANCE PROJECT

1. I submit the following report ^{1/} and recommendation on a proposed loan to the Investment Bank of Romania, with the guarantee of the Socialist Republic of Romania, for the equivalent of US\$60 million, to help finance a post earthquake construction assistance project. The loan would have a term of 15 years, including three years of grace, with interest at 7.5 percent per annum.

PART I - THE ECONOMY

2. The first basic report on Romania (Report no. 1601-RO, "The Industrialization of an Agrarian Economy under Socialist Planning") was circulated to Executive Directors on April 20, 1978. An economic mission visited Romania in mid-May to collect information on economic performance in 1977 and to discuss the 1978 Annual Plan. The findings of the mission will be reflected in the next President's Report. Country social and economic data are given in Annex I.

3. Over the past 25 years the Romanian economy has undergone a radical transformation and has sustained one of the highest growth rates in the world. The average growth rate of national income during the period has been 9.7 percent per annum. The level and diversification of industrial production has increased rapidly, providing the basis for the modernization and expansion of other economic sectors and a general increase in labor productivity and national income. With the transfer of labor from agriculture to industry, the population has become increasingly urbanized. Standards of living have increased substantially, not only because of the growth of personal incomes but also because of the provision through the state budget of expanded and improved education, medical services, housing and social expenditures of other kinds. Furthermore, Romanian participation in the world economy has changed significantly as the level of trade has risen and its composition altered.

^{1/} This report is based on a project proposal submitted in September, 1977 by the Government of Romania and on the findings of a preparation/appraisal mission consisting of Messrs. El Darwish, Sood, Tsantis and Pepper (Bank) and Messrs. Ostberg and Davey (Consultants), which visited Romania in October/November, 1977.

4. The changes in the level and structure of economic activities between 1950 and 1975 represent the outcome of a development strategy designed to accelerate the rate of growth and to catch up, as quickly as possible, with the level and structure of development in the presently developed countries. The main features of the strategy can be summarized as: high and increasing rates of saving and investment; the creation of a broad industrial base; the development of local natural resources; the reorganization and modernization of agriculture; the balanced regional distribution of production and income; the expansion of foreign trade and international economic relations; and the development of human resources.

5. The main instrument for carrying out the strategy has been the system of comprehensive central planning and management. Economic management is organized along socialist principles which include state and cooperative ownership of almost all productive resources. Economic activity is directed by means of obligatory development planning coordinated by the central party and government authorities. The national plan, drawn up on a five-year time frame and elaborated each year in an Annual Plan, sets out for the economy as a whole, by sector and branch, and on a regional basis, specific tasks for economic and social units. The plan is drawn up through a combination of central directives and aggregation of individual enterprise plans, any differences being reconciled through discussions between the entities involved. During the late 1960s and throughout the present decade, Romania has undertaken measures to improve the planning and management system, to increase the responsibility of enterprises in preparing and implementing the plan and to orient the economy to a more efficient use of resources.

6. The technical and functional Ministries are the State's chief agents for the administration of economic activity. They are assisted by subordinate units known as Centrals, which coordinate and supervise activities within a common branch or industry without being directly engaged in production. Enterprises subordinate to the Centrals are responsible for production which is controlled through a system of financial and physical production targets. Production enterprises generally are not authorized to engage directly in foreign trade and rely on specialized foreign trade enterprises for this purpose. In agriculture, large State farms and cooperatives are the predominant units of production.

7. To achieve the objectives of rapid growth and structural change, the Romanian authorities have made great efforts to mobilize domestic resources for development and to maintain a high rate of capital formation. Over the past 25 years, investment has grown at 13 percent per annum, and by the 1971-75 Five-Year Plan, the proportion of national income utilized for accumulation had risen to 34.1 percent (equivalent to 28 percent of GNP). The sectoral allocation of investment throughout the period reflected the priority of industrialization and the creation of a broad industrial base oriented towards self-sufficiency; approximately 50% of investment has been allocated to industry and, of this, by far the largest part was directed to the producer goods sector. This has resulted in rapid growth of the industrial sector, over 13 percent per annum during the last decade, with the producer goods

sector growing more rapidly than consumer goods. In 1976 industry was the leading sector of the economy, accounting for almost 60 percent of national income, and employing approximately 40 percent of the labor force compared with 14 percent in 1950. Heavy industry, led by chemicals, ferrous metallurgy, engineering and machine-building comprised 62 percent of industrial production.

8. This industrialization strategy, however, particularly increased the demand for raw materials and energy. It also necessitated rapid growth of construction. Romania has concentrated on exploiting known local resources of fuels, metals and minerals to be as self-sufficient as possible in these items. The rapid growth of energy consumption, 8.6 percent per annum since 1950, has outpaced the growth of domestic production and, Romania started to import oil in 1968. It became a net importer of energy in 1972.

9. Construction grew rapidly (about 11.5 percent annually) between 1950-1976 to become the third largest sector in the economy, providing 7.6 percent of the national income. However, construction's share in total investment has been diminishing, particularly during the last decade. The construction sector had been able to meet the pressing demands of economic growth through modernization and gradual mechanization. In more recent years, shortfalls in this sector have been the major factors accounting for the markedly slower growth in total investment than planned. These shortfalls reflect the delays in delivery of equipment and spare parts for domestic use; shortages of materials from both the domestic industry and from abroad; delays in the completion of designs; overdesign; inefficiencies in the organization at the site; delay in adoption of modern methods and manpower shortages arising from recruitment difficulties and from slower productivity increases than planned. Improvements have been planned to overcome these problems. Furthermore, growth in construction has, in its turn, led to large increases in the need for building materials, plant for their manufacture, and earthmoving/construction equipment, which have had to be imported until the local industry could respond to growth in demand.

10. Notwithstanding the emphasis on industrialization, agriculture remains a key sector of the economy, still employing 36 percent of the labor force (compared with 74 percent in 1950). Apart from supplying foods and other agricultural products as inputs for agro-industries, the sector also supplies about 30 percent of the nation's convertible foreign exchange earnings. Though agricultural output almost tripled in the last 25 years, the faster growth of non-agricultural sectors has reduced its share in national income to somewhat over 18 percent by 1976. Over the past decade, agricultural performance has improved with the increased emphasis on agricultural development and the increased investment funds made available. However, the level and growth of production have remained below the sector's potential.

11. Romania's population growth is about 1 percent per annum. The rapid growth of industrial employment has therefore drawn labor from the rural areas. The average GNP growth of 9 percent per annum implies a percentage growth in output per head of about 8 percent per annum, up to an estimated GNP per capita of US\$1,450 in 1976, based upon official national income information using the World Bank Atlas methodology.

12. The organization of the economy is such that all labor is employed (in fact, required to work). There is, however, some seasonal labor surplus in agriculture. Income distribution is also relatively equal, through government policy controls over the level, growth and structure of wages. By law the maximum wage/salary is five and a half times the minimum. Monthly wages were increased by 8.3 percent in 1976 to an average of 1964 lei. The Government also promotes its income distribution policies through regional allocation of industrial investment.

13. The Government, in fact, aims to give the population a basic needs package, partly by providing services such as education, health and housing. From this basic level, the Government has planned annual increases in living standards. Real incomes have risen at an annual rate of 6.2 percent, with the growth rate accelerating particularly in the last decade as more benefits of a rapidly expanding national income were channelled to consumption. Prices of essential consumer goods and services such as foodstuffs, rents and urban transport remain low and most social services, notably education and health care, are provided free of charge.

14. The value of Romania's trade grew at an average annual rate of 13 percent in the past 25 years, with a gradual acceleration in the last decade, reflecting not only the effects of international inflation but also an increase in the importance of trade, particularly industrial imports, to the economy. The level of imports rose in response to the need for capital goods and raw materials, reaching US\$6.10 billion in 1976. Exports grew, reaching a level of US\$6.14 billion in 1976, and the share of manufactured goods increased to 50%, reflecting the progress of Romania's industrialization. Trade with LDC's and developed market economies has also been increasing rapidly in response to policies of diversifying sources of raw material supply and as a consequence of exports of more manufactured goods. In recent years, there has also been a tendency to move away from trade on a bilateral basis towards trade involving multilateral payments, within the framework of the general trade cooperation agreements signed with almost all of the country's trading partners. These agreements also covered cooperation in production, technical assistance and economic relations. In 1976, Romania had, for the first time since the mid-1960s, a surplus (of US\$72 million) on its convertible currency trade and also for the first time since 1973 a surplus on overall trade (of US\$43 million). This was the result of a greater growth of exports to the convertible currency area. However, because of the deficit on the invisibles account, Romania had a deficit on current account both in overall terms (US\$20 million) and with the convertible currency area (US\$61 million), but they were both considerably lower than in previous years.

15. In spite of these developments, the structure of Romania's trade with the developed market economies is characterized by exports of natural resources and imports of capital goods. Because of the present low level of reserves, any instability in export earnings, as frequently arises from shortfalls in agricultural output or softening in prices tends to place the import program, largely sophisticated machinery and components, in immediate jeopardy.

Recent Economic Developments

16. The Five-Year Plan under implementation covers the period of 1976-80. The high growth rates experienced during 1971-75 are planned to continue. The pattern of growth planned for this period suggests that the present decade has been viewed as a decisive period in the achievement of long-term objectives, during which Romania will overcome the major constraints on its transformation from a developing country into a developed and technologically advanced country. There have been substantial and comprehensive revisions to the Five-Year Plan targets during 1977 to help accomplish this. In July, increased targets for standards of living were announced and in December, following the Eleventh Conference of the Romanian Communist Party (RCP) revised targets for all other areas of the Plan were announced. Also, in January 1978 important decisions were taken to substantially increase work incentives by allowing workers to participate in sharing the profits of enterprises.

17. According to the revised plan, national income is to grow at 11 percent per annum between 1976-80, practically the same rate as was achieved between 1971 and 1975. Gross industrial production will increase at 11.5 percent, compared with the original target of 10.2-11.2 percent, while gross agricultural production is expected to grow at a rate of 6.9-9.0 percent per annum, which is quite an ambitious target, and an improvement on previous results in that sector. In addition, investment is to increase by 12.7 percent per annum. A campaign to increase the utilization of existing capacities and to make significant economies in the consumption of raw materials and intermediate goods is being implemented throughout the economy, especially in the construction sector. As a result, a reduction of lei 109 billion in investment costs throughout 1976-80 is planned. The volume of foreign trade is to increase by 109.1 percent in real terms over the five years, a much faster rate of growth than in 1971-75 when trade merely doubled in current prices. Furthermore, the Government plans to encourage the growth of exports so that it exceeds that of imports, to pursue its long-term objective of reducing its external debt and allowing for the accumulation of reserves. While the rate of consumption growth will remain below that of production, it will nevertheless be increased. Real wages are now to increase by 32.3 percent over the five years compared with the previous target of 22 percent. As a result, targets for socialist retail trade and services for the population have been increased.

18. The economy was dealt a severe blow on March 4, 1977 when a violent earthquake occurred in the east of the country, causing severe damage in the vicinity of Bucharest. The Government estimated that 1,570 people were killed, 11,300 injured and that it caused damage valued at US\$2 billion. US\$1.4 billion of the total damage was to buildings and associated utilities, of which US\$1 billion was in housing. Of the remaining 30 percent of damage, almost all was in inventories and production. The earthquake also had a substantial detrimental effect on the country's balance of payments' prospects; the net balance of payments cost is estimated to be approximately US\$630 million during 1977 and 1978.

19. Immediately after the earthquake, the Government began clearance and reconstruction work and was remarkably successful in overcoming its immediate effects. Debris was cleared, housing was found for the vast majority of those left homeless, and most enterprises were returned within a few weeks to full production. To deal with the substantial longer-term effects of the earthquake, the Government instituted a comprehensive reconstruction program, which, it is planned, will permit the impact of the earthquake to be eliminated by 1980. The resources for the additional tasks during this plan period are expected to be secured through greater efforts of the population, utilization of the army for reconstruction work and from savings of production expenditures obtained from improvements in efficiency of production which are to be greater than originally anticipated. The reconstruction effort will impose additional tasks upon the construction sector which, in recent years, has been operating very close to its capacity; as a result, the reconstruction program is designed to relieve the constraints of the sector by improving its efficiency, and by advancing the commissioning of new capacity in the construction sector and those industrial branches which supply building materials, construction equipment, and equipment for the building materials industry. Further details are given in Parts IV and V.

20. In 1977, the economy continued its rapid development but except for industrial production, many important plan targets were not met. National income increased by 8.6 percent compared to a plan target of 11.3 percent and an increase in the previous year of 10.5 percent. Industrial production increased substantially more than the plan target (12.5 versus 10.5 percent). In entities damaged by the earthquake, production was restored rapidly through repairing equipment, even if only on a makeshift basis to start with. Part of the lost production due to the impact of the earthquake was also offset by increases in labor productivity which were above plan targets. Plan targets in construction, however, were not met and output was still far short of the growth needed to replace the decrease in the housing stock due to the earthquake. Agricultural output was planned to increase by between 2 and 14 percent depending on weather conditions and exceed the 1976 record production. It actually fell short of 1976 results by 1.3 percent due to less favorable weather. Investments increased by 11.5 percent which, although higher than the 8.2 percent achieved in 1976, fell short of the target of 16.7 percent. The investment plans of some ministries were underfulfilled because of the continuing bottlenecks in construction. While measures were taken to correct these problems, apparently their effect was not fully felt in 1977. Finally the volume of trade increased in current prices close to that planned (14.8 versus 15.5 percent) but both the 1976 (14.5 percent) and the 1977 rates are below the revised Five Year Plan target which requires an increase of over 15 percent per annum in real terms.

21. Published details on the 1978 Plan indicate growth rates similar to those planned for 1977. National income is planned to increase by 11-11.5 percent, industrial production by 10.6 percent and agricultural production by between 6.9 and 16.1 percent. Investment is planned to increase by 16.8 percent and foreign trade by 19.1 percent. Real incomes will increase by 7.9 percent.

External Assistance

22. The expansion of Romania's trade with the non-socialist industrial countries has led to an increased need to obtain convertible currencies to pay for imports from those countries. Romania has met this need both by borrowing abroad and by mounting a major effort to expand exports and tourism. Gross inflows of convertible currency through medium- and long-term loans were US\$946 million in 1976, consisting mostly of financial and suppliers' credits with relatively short repayment periods. This gross inflow represented a net inflow of some US\$464 million after accounting for the country's repayment obligations. In the first six months of 1977 the gross medium- and long-term capital inflow on convertible account was US\$501 million, consisting largely of suppliers' credits. The net inflow for the same period was US\$151 million.

23. As part of its effort to expand its foreign trade and cooperation relationships, Romania has also taken active steps to attract long-term private capital. A regulation passed in 1972 defines the conditions under which foreign firms can establish joint ventures with domestic enterprises, preferably in foreign exchange earning or saving industries. As of December 1977, eight joint venture agreements had been signed and two more announced. In contrast with the earlier ventures, which were of small scale involving total direct foreign investments of about US\$10 to US\$15 million, the latest ventures involve far larger sums. The seventh agreement, signed in early 1977 with Citroen, involves a contract of FF 2.5 billion (about US\$500 million) and will lead to a total capital inflow of approximately US\$250 million. Even larger inflows are expected as a result of an agreement with Kuwait for the construction of a petrochemical complex costing US\$1.25 billion. Romania also receives medium-term trade credits from U.S. Eximbank and trades under ECGD, COFACE, and HERMES credit guarantees with the United Kingdom, France and the Federal Republic of Germany, respectively. During 1977, Romania became the first East European recipient of a Japanese Eximbank loan, receiving US\$80 million for the expansion of the port of Constanta. In 1975 Romania succeeded in securing a US\$100 million, eight-year loan from Kuwait as part of a general cooperation agreement and also a US\$420 million loan from Iran on concessionary terms. During 1977, it also negotiated two Eurodollar loans totalling US\$125 million. In January 1978 Romania negotiated a further US\$100 million on the Eurocurrency market. As part of its strategy to secure long-term energy supplies, Romania has concluded a long-term contract for purchase of coal with a United States coal mine; a banking consortium provided a US\$53 million loan to finance the purchase in April 1978. In addition, Romania has access to non-convertible currency investment credits from the International Investment Bank, Moscow.

24. Romania's access to long-term finance in convertible currencies is still very restricted. The IBRD is the major source of such long-term development finance, though Romania is making efforts to improve its access to financial markets. The Bank's presence on a significant scale would have a positive influence in this regard and serve to build outside confidence in the country, thereby enhancing in the long-term its independent access to the world's financial markets.

Prospects

25. Romania has good potential for further economic growth. Endowed with important natural resources (fuels, some minerals, timber, rich soils and sources of irrigation water for agriculture, and a favorable climate for agriculture and tourism) and located conveniently with respect to its major international markets in the East and West, the country has built a broad industrial infrastructure (power, metallurgy, chemicals) which will serve as a base for the expansion of secondary manufacturing sectors such as machine building and consumer durables. Above all, Romania has a hard-working and increasingly skilled population. To attain its growth objectives, however, Romania will have to rely on a major expansion of exports of manufactured goods in order to finance modern foreign technology and an increasing dependence on imported raw materials and fuel.

26. Economic growth and structural change call for the introduction of new technologies, improvements in the quality of products, more efficient use of materials and factor inputs, and reductions in production costs. The achievement of export targets requires improvements in the quality of products and responsiveness to customer demands, areas in which the economy appears to have lagged in past years. To keep up with these changes and requirements, large programs of education and manpower training have been mounted, investments in scientific and technological research have been emphasized, and efforts are being made to strengthen technical cooperation with industrialized countries and international organizations. The increasing diversity and complexity of Romania's economic structure also require continuing improvements in the efficiency of economic planning and coordination and further refinements in economic management.

27. The growth rate is expected to remain quite high by international standards and if its present momentum is maintained, Romania will be among the more developed of the high-income, developing countries in the 1980s. The Government plans to achieve this high growth rate by emphasizing, first, the utilization of the country's own resources and a large local investment effort, and second, more effective use of human, capital and natural resources. However, in order for Romania to attain its growth targets and its long term plans for creating a competitive industrial economy, it will have to attract foreign resources and technology and secure loans to support its development efforts. The earthquake has accentuated this need for international resources.

Creditworthiness

28. As of June 1977, Romania's total medium and long-term external debt amounted to US\$3,266 million. Most of these debts (US\$3,174 million) were denominated in convertible currencies, the major creditor countries being Germany, France, UK and Italy. While the total debt does not appear excessive in relation to the volume and growth of external trade, average maturities are relatively short and convertible debt service payments are estimated to be in the order of US\$700 million a year in 1978 and 1979. The convertible debt service ratio is estimated to have been 19 percent in 1977 and is expected to be 18 percent in 1978.

29. The organization of economic activity in Romania, the pursuit of a development strategy involving high investment and saving rates, and rapid income growth ensure the effective use of foreign credits. Moreover, the country's major efforts to expand exports (particularly to convertible currency areas) are increasing the foreign exchange available for debt service. Convertible export earnings rose from US\$830 million in 1971 to US\$3,403 million in 1976. The preferential trade status accorded to Romania by the European Communities in June 1973 is facilitating the expansion of such exports as is the granting of most favored nation status by the U.S. Since the early 1970s, the Government has restricted the use of short-term credit from western suppliers in an effort to improve the structure of the country's external debt. In view of the earthquake's impact upon the balance of payments, the Government indicated that there would be a temporary reversal of this trend and short-term debt increased again in the first six months of 1977. Assuming a continuation of present export and debt management policies, we estimate that the debt service ratio will be somewhat above 20 percent during the remainder of the 1976-80 plan period, after which it will decline, reaching about 15 percent in 1985. The country's present outward-looking posture, the success of both its domestic growth and foreign trade policies, and its potential for continued development, all support the judgment that Romania is creditworthy for substantial Bank lending.

30. When Romania joined the Bank, most pre-war foreign debts of the country had been settled. Settlements which were still under discussion at that time concerned claims in the United Kingdom and in the United States. With regard to the settlement of these claims, the final payments of U.S. claims began in September 1975 and were completed in October 1976 based upon agreements reached in May 1975. Settlement of British claims proved more difficult, but a final agreement was signed in January 1976. The Bank was also informed in late 1976 of certain Swedish claims concerning public loans from the pre-war period, nationalized Swedish property and other interests, such as concessions granted to Swedish companies before the Second World War. The eleventh meeting to discuss settlement of these claims was held in Bucharest in October 1976 and further discussions were planned at a date to be established through diplomatic channels. The Bank has been unable to obtain a consistent picture from the two Governments of the present status of this matter and has, therefore, urged the Romanian and Swedish authorities to clarify their respective positions directly with each other as soon as possible.

PART II - BANK GROUP OPERATIONS IN ROMANIA

31. The proposed loan would bring total Bank commitments to Romania to US\$882.8 million for seventeen loans in agriculture, industry and power. Disbursements under the Bank's initial loans were slow during 1975, but this situation improved considerably during 1976 and 1977. Annex II contains a summary statement of Bank loans to Romania and notes on the execution of ongoing projects as of April 30, 1978.

32. Foreign exchange, especially in convertible currencies, continues to be a major constraint and one of the major objectives of Bank lending continues to be to help alleviate the country's shortage of foreign exchange by providing long-term external capital and by financing projects which will expand foreign exchange earnings or savings. Bank lending also aims at supporting the Government's efforts to introduce new industrial technologies, to improve the quality of products and production efficiency, to reduce production costs and to provide for necessary electric power development. Market aspects and marketing, especially for export goods, are also emphasized. Special attention is given to agriculture which is heavily dependent upon favorable weather and where productivity levels are still comparatively low.

33. A number of further loans are under consideration. Projects for irrigation and drainage, power, poultry production, pig production, horticulture, chemical plants, and seamless pipe production have been proposed. The Government has also requested that the Bank consider lending for a major navigation canal linking the Danube and Black Sea.

34. In addition to lending, the Bank (through EDI) has assisted Romania by conducting industrial and transportation project appraisal training courses for Romanian officials in Belgrade in October 1973 and in Bucharest in January/February 1975, November/December 1975, January/February 1976, October/November 1976 and November/December 1977. Additional courses, including one in agricultural project appraisal, are planned. The methodology taught in these courses is becoming more widely known in Romania and is expected to begin to supplement the methodology normally used by the Romanian planning authorities.

35. The projects, for which assistance has been committed or is being considered, represent only a small portion of Romania's total need for external financing and of its total disbursed convertible debt. However, they will provide a substantial net addition to the inflow of convertible currency finance, and may set a pattern for obtaining longer-term convertible finance from other sources. The disbursed debt outstanding to the Bank is expected to constitute about 12 percent of Romania's total projected convertible currency debt in 1980; the Bank's share in Romania's debt service payments in 1980 would be about 3 percent.

PART III - RATIONALE FOR SCOPE AND BENEFITS OF PROPOSED BANK ASSISTANCE

36. The March 4 earthquake struck at a time when the construction sector was already emerging as a constraint to Romania's development (para. 9). The reconstruction requirements have further aggravated the difficulties, particularly the availability of materials and equipment. The Government's strategy has been to meet immediate reconstruction requirements by diverting resources from construction activities in non-productive sectors, by deferring other planned construction, and by advancing projects in its 1976-80 Plan that increase output of building materials, equipment to produce building materials, and earthmoving equipment. It is also strengthening institutions for earthquake monitoring, and construction design and research. As foreign exchange

is critical to the country's planned development and continues to be a constraint, the Government minimized its reliance on increased imports and reduction of planned exports to reduce adverse effects on its balance of payments position. The country averted the urgent need for massive imports of materials by accommodating earthquake victims in housing planned to relieve shortages existing before the earthquake, and by other provisional measures. The country, nonetheless, needed to increase imports and to defer exports of products needed for the reconstruction effort, and was forced to increase its international borrowing significantly. Thus, the bulk of the burden of recovery has been borne by the Romanian population with some external rehabilitation assistance (see paras. 49-55).

37. The Government is using domestic resources as much as possible to finance the needs of delayed reconstruction and deferred construction activities. This program is being implemented within the context of the overall plan to strengthen the construction sector so that it can in parallel meet the needs of rapid industrial growth. The proposed project would assist the Government with its remaining rehabilitation efforts, which have been constrained due to large import requirements, and in implementing this program. The program requires imports of specialized equipment, machinery, and components to expedite expansion of capacity in critical construction-related industries. The proposed loan would assist in financing these imports for the expansion of some of the country's largest enterprises engaged in the manufacture of construction materials, construction equipment, industrial equipment and machine tools. The loan would contribute both to reconstruction, and would substantially strengthen the overall and long-run position of the country's construction related industries. This would alleviate a significant constraint to Romania's construction sector which was becoming a bottleneck to the country's rapid economic development. Finally the country's efforts to develop adequate designs and building methods to prevent extensive damage from future earthquakes also rely on imports of very modern equipment, which would also be financed under the project.

PART IV - THE 1977 EARTHQUAKE AND ITS CONSEQUENCES

Background

38. Romanian development has suffered serious setbacks as a result of natural disasters, including the 1975 Flood (Loan 1169) and severe earthquakes. The country is an active earthquake area and has a long history of severe earthquakes, the last in 1940. It has a number of small active earthquake centers. The major center lies about 200 kilometers northeast of Bucharest where the north-south range of the Carpathians meets the east-west range. At this point, three tectonic plates meet and energy accumulates in the subcrustal zone of the Carpathian arch as a result of the south and east tectonic plates moving down below the arch and pushing against the north-west Transylvanian plate.

39. On March 4, 1977, there was a strong earthquake, centered on the judet (district) of Vrancea, and measuring on the Mercalli scale 9 in

Bucharest, 8 at Focsani and Iasi, 7-8 at Bacau, 7 at Cimpulung-Muscel and 4 at Timisoara. (See Map no. 13523). The shock waves extended largely in a north-east to southwest direction, covering approximately 10,000 square kilometers of eastern Romania and also affecting areas of the Soviet Union and Bulgaria. Waves were also propagated in a southerly direction. The force and characteristics of the 1977 earthquake varied from area to area, depending upon soil conditions and location. In Bucharest, the earthquake generated at soil level a maximum horizontal force equivalent to 25 percent of gravitational acceleration (981 cm/sec). This force was responsible for most of the damage.

Impact of the 1977 Earthquake

40. The earthquake had serious effects upon both the population and the economy. One thousand five hundred and seventy people were killed and more than 11,300 were injured, many seriously. A substantial number of those trapped by collapse of buildings were rescued due to the prompt mobilization of the armed forces, militia and the population in general. The damage left thousands of families homeless and destroyed US\$95 million worth of the population's possessions.

41. An inventory of damage to assets and potential production losses was prepared immediately after the earthquake and is summarized by sector and by type of damage in the following table.

Table 1: INVENTORY OF DAMAGE CAUSED BY THE EARTHQUAKE
(in millions of US\$)

Sector	Total damage	of which			
		Construction (buildings, water supply etc.)	Equipment Installations and transport	Raw materials, intermediate products and consumer goods	Pro- duction losses
1. Industry	447.3	102.7	20.0	28.4	296.2
2. Agriculture	124.4	46.4	10.7	17.0	50.3
3. Transport, Communications and Retail Trade	93.2	52.1	14.4	14.7	12.0
4. Health, Education and Socio-cultural	167.3	147.5	18.1	-	1.7
5. Housing	1,032.8	1,015.0	17.8	-	-
6. Local Industry, Utilities and Construction	87.6	56.4	23.3	3.4	4.5
7. Miscellaneous Private Goods	<u>95.4</u>	<u>-</u>	<u>-</u>	<u>95.4</u>	<u>-</u>
Total	2,048.0	1,420.1	104.3	158.9	364.7

42. Most of the damage caused by the earthquake was to buildings and other types of structure, in particular to housing. Most of the destruction

of the equipment, machinery and other fixed installations was due to the collapse of buildings. Losses in fixed assets and working capital, coupled with the disruptive effects of the earthquake, led to the significant losses in production shown in the above table.

43. The billion dollar damage in housing was a consequence of over 156,000 apartments being destroyed or very seriously damaged in the urban areas and approximately 21,500 in rural areas. In addition, almost 366,000 apartments in urban areas and 117,000 houses in rural areas needed repair. In industry, a large number of enterprises in different subsectors, especially machine building, light-industry and chemical plants, suffered losses to buildings and equipment in addition to loss of inventories. These industrial branches consequently suffered most of the reported production losses. A large number of industrial plants had to temporarily reduce production. Subsequent restoration of normal or near normal levels of production was accomplished through temporary arrangements in a number of cases, and by producing under conditions that affect the quality of the product, such as at Viscofil, a producer of rayon fiber, which suffered extensive damage.

44. In agriculture, there was damage to buildings, silos, stores and some losses of livestock. In the transport and telecommunications sector, the major damage to fixed assets was to the Computer Center which collapsed, leading to difficulties in the Ministry of Transport and Telecommunications' planning and control functions, significantly of freight transport.

45. The regional distribution of the earthquake's impact was widespread; damage was reported in 23 of the 40 judets. However, in most of the districts outside the transmission path of the shock-waves, the damage was relatively small and scattered. The major impact was felt in those judets lying to the southeast, south and northeast of the epicenter (Teleorman, Dolj and Prahova), and most especially in the Bucharest municipality which suffered US\$1.4 billion of the US\$2 billion of total damage caused by the earthquake.

46. The impact of the earthquake has also been felt, and continues to be felt, in the external sector. The Government has estimated that the overall impact on the current account in 1977 and 1978 will be approximately US\$630 million. US\$250 million is expected to be lost in exports over the two years, partly because building materials and machinery and equipment will be used domestically for the reconstruction effort and partly because export orders from trading partners have been lost. US\$350 million is expected to be the additional amount of imports, chiefly in the form of machinery, equipment, and basic raw materials, required by the reconstruction effort and the expansion of the construction sector's capacity. Finally, the Government has estimated, that during 1977, tourism receipts were US\$30 million lower than expected.

The Reconstruction Effort

Organization and Strategy

47. The rehabilitation and reconstruction effort was swiftly organized in two phases and has been highly effective. The first phase consisted of

debris removal, search and rescue operations, providing medical care and emergency shelter as needed, and meeting the basic food needs of the population. The second phase concentrated on the resettlement of the affected families and the return of production to normal levels. Both these objectives were given top priority. In the first week, the bulk of the efforts were concentrated in the heavily affected Bucharest area and were managed by an inter-ministerial and inter-agency central commission. Under the second phase, in order to accelerate reconstruction and meet more effectively the needs of each district affected by the earthquake, the responsibility was decentralized to the chairman of the People's Council in each district and to the mayor of Bucharest. The responsibility for debris clearance and rehabilitation for specific areas was placed with individual construction enterprises.

48. The Government's strategy has been to undertake the rehabilitation and reconstruction effort without significantly affecting the overall implementation of output targets in the Five-Year Development Plan. The new requirements for materials, equipment and manpower necessitated by the reconstruction have been integrated with those of Romania's longer term development needs within the context of the plan. They are largely met by an extensive additional resource mobilization effort, discussed further below. With the integration of reconstruction in the ongoing development program, priority has been given to those efforts that do not require any substantial reallocation of either investment funds or equipment that may adversely affect other enterprises' performance in meeting plan targets.

Resource Mobilization

49. An intensive resource mobilization effort was organized immediately following the earthquake and the population provided spirited support with volunteer labor and financial resources. On the domestic front, this effort consisted of both enacting new measures to assist in alleviating the impact of the earthquake, as well as strengthening and/or accelerating, on account of the earthquake, the implementation of measures already in progress. Externally, the Government sought material and monetary assistance, initially for emergency relief and subsequently for rehabilitation and reconstruction, from other government and multilateral organizations and through recourse to borrowing from the international capital markets.

The Domestic Effort

50. Measures implemented to meet the urgent manpower, materials, and equipment needs for debris clearance and rehabilitation were:

- (i) the extension of work into all Sundays in March, two Sundays in April and May and one Sunday per month throughout the remainder of 1977;
- (ii) the mobilization of the working population not directly involved in the production process, i.e., white collar workers and technical, professional and managerial staff of enterprises and ministries, as well as of youth and student organizations;

- (iii) the reallocation of construction workers from non-affected parts of the country and use of the army in the rehabilitation process;
- (iv) the postponement of the planned shortening of the work week (from 48 to 44 hours) from 1978 to 1979;
- (v) the diversion of all equipment not directly used in production process to construction enterprises;
- (vi) the reduction of exports of construction materials such as cement, timber, pipes, tubes and fuels; and
- (vii) the postponement of some regular construction activity.

51. In addition, the Government intensified its campaign to increase efficiency in the utilization of existing construction capacity and to effect significant economies in use of construction raw materials and intermediate goods. The Central Institute for Research, Design and Guidelines on Construction accelerated its production of standardized designs which seek to minimize the use of materials, especially steel and cement.

52. It is difficult to quantify this effort, but unpaid extra days worked (roughly 90 million) amount roughly to 6.3 billion lei. Army, youth organization and other reallocated effort would probably be somewhat more. Contributions in pledges of earnings and direct donations not mentioned above are estimated to amount to roughly another 6.5 billion lei. This adds up to almost 20 billion lei in addition to the private homeowners contribution for damages beyond the small amounts they received under the prevailing insurance system, because almost all homeowners were very underinsured.

53. An additional workers' contribution consisted of pledges of both the affected and non-affected enterprises to achieve higher production targets than previously planned and to reduce the norms of consumption of material expenditures in production beyond the initially envisaged plan levels. This contribution has ramifications both for 1977 and for future years, as the implied higher productivity levels and improved norms are being used as a basis for bonuses and for projected improvements in future years.

International Assistance for Rehabilitation and Reconstruction

54. The international community responded swiftly to Romania's immediate post-earthquake needs. Initial world response, substantially coordinated by the United Nations Disaster Relief Organization (UNDRO) in Geneva, was oriented towards meeting emergency medical and basic food needs. The World Food Program made a contribution of US\$3 million in food aid to the homeless and to volunteers engaged in rescue operations, removal of debris and demolition of dangerous buildings. Within a week however, the appeals for emergency aid were halted and additional needs were met on a selective bilateral basis between the Government and missions of donor governments.

55. In total, 55 countries and 12 multilateral organizations contributed US\$35 million in cash and substantial contributions in kind. These included construction of a 450-bed hospital in Zimnicea, industrial equipment and spare parts, and construction materials and equipment. The U.S. provided the largest cash contribution of about US\$20 million. The U.S.S.R. contribution, the largest in kind, included among others, a complete plant with a production capacity of 70-80,000 sq. m. per year of concrete prefabricated building elements. In addition to receiving a UNDP contribution of US\$1.6 million, Romania also negotiated credit facilities totalling SDR 111.6 million (US\$130.3 million) under the compensatory and stand-by arrangements with IMF. As of May 1, 1978, Romania had drawn SDR 72.5 million (US\$84.6 million) from the facilities.

The Status of the Reconstruction Program

56. The extensive mobilization of resources and the effective control in their allocation have led to a swift implementation of the immediate rehabilitation and reconstruction program. Progress achieved is evident even to a casual visitor, especially in Bucharest.

57. All those whose residences were destroyed have been housed (mainly by giving them priority for newly completed housing) and provided with essentials by the State. All manufacturing enterprises affected by the earthquake except one, Viscofil, a rayon producer, are again at or close to full production.

58. The bulk of the emergency reconstruction effort will have been undertaken by the end of 1978. The longer term reconstruction activities to be undertaken last are those requiring large amounts of materials or equipment. For example, although the displaced families have been provided new housing, collapsed buildings have been cleared but not rebuilt. Also, construction activities from which resources were diverted remain to be undertaken. In line with the Government's strategy, these will be undertaken, within the longer term plan for the strengthening of the construction sector, by accelerating domestic capacity in the industrial subsectors that support construction through the production of materials and equipment.

Preventive Measures

Seismic Research and the National Earthquake Protection Plan

59. Systematically-kept seismic records in Romania date from 1935, although specific studies on seismic activity were started around 1890. Over the past 30 years, most of the seismic research in Romania has been concerned with earthquake engineering, and the collection of data for the design of risk maps, which plot the probability of earthquakes of different intensities. At present, a seismic risk map is under preparation by the National Center for Seismology (NCS). NCS was set up on February 15, 1977, to develop a national network of seismological centers linked to a computer center. This Center is receiving US\$1.16 million during 1977-79 from UNDP for equipment, fellowships

and consultants, and also, contributions from the People's Republic of China, the Federal Republic of Germany, USSR and Yugoslavia.

60. Romania has also been involved in a regional scheme for seismic research since 1970, with the collaboration of experts from USA and USSR. Regional cooperation has been continued and expanded to cover earthquake engineering problems, in particular seismic microzoning. The latter aims to determine suitable zones for locating different structures based on the characteristics of different soils and rocks in transmitting seismic waves.

61. Seismic studies and records, and the experience of the 1940 earthquake, also provided the basis for the seismic standards written into the building code introduced in 1941. The code was updated in 1950 and rewritten in 1963. Over the post-war period, experimental research has been carried out within the Building Research Institute (INCERC) on the design of large buildings and other structures and upon new construction methods, particularly prefabrication, and on their resistance to earthquakes. Using information gained from these experiences, the building code was being further revised in 1977 when the earthquake struck. The code was modified further and reissued towards the end of 1977 with more stringent seismic standards based on the seismic data gained from the latest earthquake. Additionally all new building methods must now be tested for resistance to earthquakes.

62. In the past, lack of resources has prevented testing of all new designs and construction methods. To remedy these deficiencies, it is now planned to expand the National Center for Earthquake Engineering (NCEE), which was established recently within INCERC. The expansion would require NCEE to be equipped with modern experimental equipment and instruments in order to conduct laboratory and on-site tests to determine earthquake standards for structures and construction systems using advanced simulation techniques. These tests will support the Center's work, which will be carried out in collaboration with INCERC and the Central Institute for Research Design, in developing experimental models and structures, designing construction technologies, developing criteria for seismic designs and developing microzoning seismic maps. The Center has received US\$176,000 from UNDP for development of its facilities, but is in urgent need of substantial additional equipment if it is to become fully operational in 1980, as currently planned.

63. The Center's work is being done as part of a National Earthquake Protection Plan. Immediately after the earthquake, NCEE, jointly with NCS, was charged with developing this plan by early 1979. It will contain building standards, criteria for urban and rural planning, and special studies upon the impact of earthquakes on special structures, such as dams, and upon the psychological impact on the population. It will also propose arrangements for human safety in earthquake-prone areas. The development of the plan and the activities of NCEE and NCS are to fall under the Office for Protection in Seismic Regions, which is under the leadership of the Vice Prime Minister and contains representatives of Ministries and other concerned agencies, such as the Red Cross and the army.

PART V - THE CONSTRUCTION SECTOR AND RELATED
MANUFACTURING INDUSTRIES

The Construction Sector

64. Expansion and efficient operation of the construction sector is essential to enable Romania to meet the needs of construction work deferred by earthquake rehabilitation activity and for the implementation of its planning targets. Also, the industrial subsectors that support construction (manufacturers of building materials, earthmoving and construction equipment, and equipment to produce cement and other basic materials) will need to be expanded under an accelerated time schedule. A brief overview of the importance of these subsectors in the economy, the main constraints they face and government measures to alleviate these constraints are given below. (A more detailed discussion of the role, performance, organization, planning and prospects of the industrial and construction sectors is given in the basic economic report. 1/) The basic importance of the construction sector to the economy (7.6 percent of national income), its rapid growth rate (11.5 percent annually) and its principal constraints are summarized in para. 9 above. Structurally, about 85 percent of organized construction is in the producers' goods sector, with over 50 percent in industry. The share of housing has increased steadily in recent years from 6.4 percent in 1971 to about 11 percent in 1976. The sector employs about 850,000 workers, about 8 percent of the labor force.

65. Since rapid growth of the economy relied recently more on modernization and expansion of existing enterprises than on new plants, the construction sector has been able to respond to the growth despite relatively less rapid investment in the sector. The sector has also become somewhat more efficient especially in the last decade, although a great deal more remains to be done. The biggest transformation in the sector has been in mechanization as part of a general policy of modernization and increased efficiency. As a result, about 90 percent of earthwork is now being undertaken by mechanical means.

66. Total construction activity will amount to 400 billion lei, according to the modified targets of the 1976-80 Plan, with revised annual growth of 9 percent. About 50 percent of the construction activity will be in the industrial sector, 10 percent in agriculture and 7 percent in transport and telecommunications. Due to the earthquake and the Government's desire to eliminate the housing shortage by 1990, the Five-Year Plan targets for the housing sector have also been modified, providing for a substantial increase in the units to be built. The initial target of 815,000 apartments over 1976-80 was increased to 1,005,000 units.

1/ Romania: The Industrialization of an Agrarian Economy under Socialist Planning (Report No. 1601-RO March 31, 1978, Chapters Ten and Twelve).

67. The targets for the sector are quite ambitious and performance in 1976 and 1977 has been disappointing. While in the past plan periods, construction sector efficiency has generally increased, certain difficulties have been experienced in the sector which have adversely affected its performance. Construction work has been behind plan targets; in 1976 only half of the target was fulfilled. Shortfalls were also experienced in 1977. The shortfalls in the construction sector were the major factors accounting for the markedly slower growth in total investment than planned.

68. These shortfalls reflect: the delays in delivery of equipment and spare parts for domestic use; shortage of materials from both the domestic industry and from abroad; delays in completion of designs; overdesign; inefficiencies in the organization at the site; delay in adoption of modern methods; and manpower shortages arising from recruitment difficulties and from slower productivity increases than planned. Construction is emerging as a general constraint in the current Five-Year Plan since the shortfall in meeting its plan targets has also affected the fulfillment of targets in industry in general. The situation has been considerably aggravated by the additional requirements of the post-earthquake reconstruction effort.

69. In order to ensure that the sector does not become a constraint in the reconstruction effort and in the implementation of the development plan, a series of measures has been taken by the government, the most important of which are:

- to increase the sector's capacity, by increasing the supply of construction material and equipment from the local industrial subsectors that produce them;
- to improve efficiency by providing for more universal and better planned mechanization through the provision to the construction enterprises of needed modern equipment;
- to improve quality of building materials;
- to expand and improve design capabilities;
- to increase prefabrication in construction and adopt other modern methods to provide better quality control, reduce the quantity of materials consumed and, most significantly, lower on-site manpower use through higher productivity;
- to extend the daily period of on-site operations up to 20-24 hours, as compared to 10-12 hours in the previous years with special wages as a recruitment incentive.

70. All these measures have been assessed and found to address the core of the difficulties in the sector and are bound to have an impact in correcting them. Their results, however, could only be judged in about two years' time when sufficient lead time has been allowed for most of them to work out.

In order to undertake these measures, the investment funds to the construction sector over the 1976-80 Plan period have been increased, in December 1977, from 34.1 billion lei to 40 billion lei. In addition, substantial changes have been made in the investment plans of the construction-related subsectors to increase their ability to supply construction material and equipment.

Industries Manufacturing Construction Materials and Equipment

71. The development of the construction sector to meet investment and reconstruction requirements is being supported by strengthening of all construction-related industry. Production of construction materials and equipment is being increased and is in turn supported by intensified manufacture of basic machinery and equipment for these industries. Revised investment plans following the earthquake indicate a 7.3 billion lei increase in the construction materials category between 1978-80, and a 11.0 billion lei increase in the engineering and metalworking subsector responsible for manufacture of equipment and machinery. A brief review of these industrial subsectors and the impact of the earthquake on their development is presented below. (A more detailed discussion of the industrial sector and its component subsectors is provided in the basic economic report. 1/)

72. The construction materials subsector has maintained its relative importance in the industrial structure over the past decade, and in 1976 contributed 3.1 percent of industrial product and accounted for 4.2 percent of industrial employment. Output growth in the subsector averaged 9.8 percent in the last Plan (1971-1975), falling short of the established target of 12.8-14.2 percent. The shortfall primarily resulted from the fact that the targets are unrealistic in view of the existing capacities. Following further efforts to increase production, the subsector output rose by over 14 percent in 1976. Of the key products, cement production exceeded 13 million tons of which 2.7 million tons was exported. Output of glass rose to 71 million square meters, with around 17 million reaching export markets. Exports for both these products more than doubled between 1970-76 contributing significantly to Romania's need for foreign exchange. The most significant growth in the 1970-76 period was shown by prefabricated reinforced concrete elements, where output increased around 13 percent annually reflecting planned emphasis on increased prefabrication.

73. Production in the subsector is carried out by over 200 enterprises spread across the country; cement capacity has been developed at ten locations to meet regional requirements. In cement and associated products the country enjoys the advantage of local availability of all inputs, except direct and indirect energy, in which Romania is now a net importer, and of using largely domestic plant. The technology in the subsector as a whole is uneven, with modern facilities functioning along-side others employing outdated technologies.

1/ Romania: The Industrialization of an Agrarian Economy under Socialist Planning (Report No. 1601-RO), March 31, 1978, Chapter Ten.

74. The initial 1976-80 Plan established a target growth rate of 9.0-10.0 percent per year for the subsector based on the expected growth of construction activity. The targets also took into account plans to reduce material consumption by elimination of over-dimensioning, the use of light-weight materials produced domestically, method of improvements and design modifications. Cement production was planned to grow at an average rate of 11.2% reaching 20 million tons by 1980, with exports rising 13.5 percent annually to a level of 4.5 million tons. The production of prefabricated concrete elements was also planned to grow but at a lower rate of 8.3 percent in view of the limitations of the technology currently available locally and constraints in domestic equipment manufacture.

75. Following the earthquake, capacity additions in most construction materials have been advanced within the Five-Year Plan in line with the Government's reconstruction strategy. For 1978-80, investment in the subsector has been supplemented by 7.3 billion lei and output is expected to exceed initial plans by 16.0 billion lei. Planned growth of exports is being curtailed in light of domestic needs. For cement, 30 percent of the reconstruction requirements estimated at over 5 million tons are planned to be met by expanding capacity at existing locations one to two years ahead of plan, while 70 percent should be met through reduction/deferral of exports. The past emphasis on prefabricated elements is being stepped up. A number of new units, around 50, are now planned leading to an additional 2.7 million cubic meters in supplementary production in the Plan period, and a growth rate of 11.8 percent as against initial plans of 8.3 percent. Similar changes are in effect for other materials.

76. The growth strategy in the subsector appears to be sound. Expansion in the first instance geared to make up for delays and deferrals caused by the earthquake continues to be based on the objective of regional development. Modern technologies are being introduced to supplement and eventually replace outdated operations. In the production of cement, the plan aims at significant reductions of energy consumption through the conversion and phasing out of energy-inefficient capacities. The increased emphasis on prefabrication offers the dual benefit of better quality control and reduction of on-site labor requirements. The plans to accelerate these developments to meet requirements for catch-up construction activities, which have been postponed due to the earthquake, are largely constrained by equipment requirements. Though much of the cement plant is planned to be manufactured domestically, specialized equipment and components must still be imported. To accomplish the objectives of increased prefabrication, new units require a number of imported production lines incorporating modern technologies to supplement those of domestic manufacture. Consequently, success of this strategy and plans in material production depends on the availability of these imports, and on the ability of the domestic machine-making subsector to respond effectively.

77. The engineering and metalworking subsector has recently been the leading growth area in industry. Strong Government emphasis has resulted in average annual growth rates of well over 15 percent since 1950. The subsector has increased in importance from a share of 13.3 percent of industrial product in 1950 to 33.3 percent in 1976. The rapid growth has been accomplished by

the assimilation of large amounts of technology and know-how in a short time. The industry continues to rely on imports for its high technology requirements.

78. The production of plant/equipment for different industries including construction materials, machine tools, and equipment for construction, agriculture, and transportation has advanced significantly. In each product category, production is concentrated in a small number of large plants. These end-product plants are adequately backed by other facilities supplying parts and components. Research and development activities are receiving increased investment and requirements of skilled labor are being met by extensive training programs and by using existing large plants as training grounds to prepare personnel for new facilities.

79. The industry's progress is also reflected in its development of export markets, where domestic markets alone did not justify economic-sized plants. Subsector exports increased their share of total exports from 18.8 percent in 1965 to 25.7 percent in 1976, primarily comprising: simple machine tools; plant for power generation/transmission, exploration, and chemical/petrochemical industries; and farm equipment, including tractors. However, there is a continued need for new technology and import of sophisticated machine tools.

80. For the current Five-Year Plan, the subsector has been allocated 21 percent of total planned investment and was expected to grow at an annual average rate of 11.8-12.6 percent, almost 2 percent faster than industry as a whole. The majority of investment funds were earmarked for large engineering projects reflecting a continued Government strategy of intensification for basic equipment manufacture.

81. After the earthquake, production targets for construction-related output have been significantly increased to meet the requirements related to reconstruction and to increase the supply of equipment to the construction sector. Production of cement and prefabricated plant equipment is planned to increase by 10,000 tons between 1977-80. The increases will be achieved by advancing present implementation schedules and in some cases through product-mix changes. At Intreprinderea de Utilaj Greu (I.U.G.) Iasi, a production level of 150,000 tons/year planned to be achieved after 1982 is now targeted for 1980 partly to support capital equipment demands of the construction materials industry. Intreprinderea de Masini Grele (I.M.G.) Bucharest started production of large cement kilns in 1977, one year ahead of plan, in lieu of other products such as turbine casings, to meet the requirements of advanced installation of cement lines. Intreprinderea de Masini-Unelte si Agregate (I.M.U.A.) Bucharest will begin production of more advanced machine tools reaching a total annual capacity of around 50,000 tons by 1979, one year ahead of plan. This will increase output of machinery by over 5,000 tons between 1978-80. Overall production of machine tools has been supplemented by 20,000 tons in this period, partly to support the manufacture of equipment for the construction materials industry and of construction equipment. Production targets for construction equipment have also been increased 10-15 percent across a broad range of items including excavators, graders, scrapers, cranes and dump trucks. The introduction of new large capacity models has been advanced.

82. These plans generally reflect an intensification of past strategy where industrialization has been successfully led by the growth of the engineering and chemical subsectors. Accomplishment of accelerated plans is again constrained by the need for imports. The subsector enterprises are faced with large requirements of special machine tools, control equipment and special components. Despite parallel expansions in the machine tools industry, many of the larger specialized machine tools cannot be manufactured domestically and need to be imported. Manufacturers of construction equipment are also faced with the need for higher imports of components to supplement local manufacture. Where introduction of new models has been expedited, the development of components for domestic manufacture is planned to proceed concurrently with production in the early years. This timing forces more intensive reliance on imports in the short-term.

PART VI - THE PROJECT

Background

83. The Romanian Government requested in early March 1977 Bank assistance, to help overcome the damage caused by the earthquake. In response to the Bank's request for a concrete proposal, the Government provided a statement of the damage in July, and information on specific enterprises to be financed, required to develop a project, in September. A preparation/appraisal mission visited Romania from October 25 to November 9 and there was a brief follow-up mission from March 27-30, 1978. The proposed loan has been formulated on the basis of the missions' findings. Negotiations were held in Washington in April, 1978. The Romanian delegation was led by Mr. O. Cezarie, Vice-President, Investment Bank and included representatives of the Ministry of Finance and the Investment Bank.

Project Objectives and Description

84. The objectives of the proposed project are to assist the Government in its efforts to:

- (i) carry out remaining short-term reconstruction;
- (ii) strengthen domestic construction capability to meet the needs of the current development plan, during which period all earthquake damage is now scheduled to be repaired;
- (iii) maximize domestic manufacture of building materials, of equipment that produces them, and of construction equipment; and
- (iv) limit damage from future earthquakes through the National Earthquake Protection Plan.

The proposed project would supplement the enormous domestic expenditure and efforts in manpower, management and institution-building described in paras. 49-53 with vitally needed imports of special equipment incorporating advanced technology, machinery and components.

85. To achieve these objectives the project would assist: damaged enterprises requiring immediate reconstruction (up to US\$13.5 million); enterprises in critical subsectors related to construction in accelerating expansion of capacity for the production of construction materials, machinery and plant for construction related industry, and construction equipment (up to US\$49.5 million); and the National Center for Earthquake Engineering being developed as part of the Protection Plan (up to US\$7 million).

86. The project would finance direct imports for selected eligible enterprises. The project consists of a specified list of imports amounting to US\$70 million for those beneficiaries, from which US\$60 million will be financed by the Bank. The project scope excludes local cost items, indirect imports and those direct imports, for which procurement was very advanced at appraisal, making it difficult to apply procedures according to Bank guidelines.

Eligible Beneficiaries and Project Impact

87. The enterprises to be assisted are: the Computer Center serving the Ministry of Transport and Telecommunications and two industrial enterprises, which were damaged in the earthquake; nine manufacturing enterprises in construction-related subsectors; and the National Center of Earthquake Engineering.

88. The Computer Center for the Ministry of Transportation was established and equipped in 1968. Additional equipment was added through 1976 to provide capacity to meet increased requirements. The Center was staffed with over 400 specialists. It provided all computing services required by its Ministry. The Center collapsed completely in the earthquake resulting in irreparable damage to most equipment. Currently staff are expected to provide essential services, as efficiently as possible, from seven different locations on an available capacity basis. The two damaged industrial enterprises are Viscofil, a producer of rayon fiber in Bucharest, and I.M.U.A. Bucharest, one of the country's leading producers of machine tools. Viscofil was amongst the enterprises most seriously affected. It is presently operating in a makeshift fashion, at around 60 percent of capacity, but at low efficiency and barely acceptable quality. It is using salvaged machinery, largely repaired with parts of more seriously damaged machines. Meanwhile the whole plant is being reequipped by domestic manufacturers, with imports of special items. I.M.U.A. Bucharest also suffered extensive damage to its office and service buildings. Minor damage to production buildings has been largely repaired but some specialized equipment was irreparably damaged and needs to be replaced quickly by imports.

89. In the construction materials category, the project would also finance key component imports to supplement local manufacture of four cement lines. These are part of the expansion of cement capacity in two existing locations, Megidia and Alesd, which is being accelerated to meet requirements. The resulting additional capacity would account for 60 percent of the increase under the revised Five-Year Plan. The project would also finance the importation of two modern production lines for the manufacture of lightweight prefabricated wall and roof sections in the Buzau prefabricated materials enterprise.

90. The project would finance machinery imports for four large enterprises in the engineering and metalworks subsector, with output directed to producers of construction materials and equipment amongst other uses. These are: I.U.G. Iasi, one of three heavy engineering complexes to be established under the Plan; I.M.G. Bucharest, to be expanded to include heavy cement and other plant/equipment in its products; I.M.U.A. Bucharest, mentioned above, to be expanded into production of large, advanced industrial machine tools also used to make construction equipment; and I.U.G. Braila, to be expanded to increase production of different types of construction equipment. In these cases, the financing represents a small proportion of major investments that have been advanced within the Five Year Plan to meet reconstruction requirements.

91. The project would also finance imports of components for construction equipment, primarily to meet supplementary production targets established following the earthquake. In this category, project beneficiaries include: I.U.G. Iasi, currently manufacturing haulers, scrapers and graders; I.U.G. Braila, a manufacturer of excavators; Intreprinderea de Autocamione (I.A.) Brasov, a manufacturer of concrete-mixers and dump trucks; and Uzina Mecanica (U.M.) Timisoara, a manufacturer of cranes.

92. Finally, the loan would assist the National Center for Earthquake Engineering by providing vital experimental equipment to study the impact of vibrations (simulating earthquakes) on building structures as part of the effort to develop better designs and standards.

Financing

93. The project has been formulated as a list of eligible direct imports for the above beneficiaries with a total value of US\$70 million in direct foreign exchange costs. The estimates are based on c.i.f. prices in the first quarter of 1978. The proposed Bank loan would finance US\$60 million of these eligible direct imports, permitting the Borrower a margin of flexibility in the final selection of items to be procured under the loan. In view of this flexibility and the large number of items to be procured, no physical contingency or price escalation provisions have been included.

Table 2: ALLOCATION OF PROJECT IMPORTS
(US\$ Million)

<u>Category</u>	<u>Maximum Amount</u>
I Damaged enterprises	13.5
II Producers of construction materials	4.5
III Manufacturers of machinery and plant for construction-related industry	25.0
IV Manufacturers of construction equipment	20.0
V National Center for Earthquake Engineering	<u>7.0</u>
Total	70.0

94. The proposed loan would be made to the Investment Bank for 15 years, including a grace period of 3 years, with interest at 7.5 percent per annum. The Investment Bank is a specialized agency, under the Ministry of Finance, for investment projects in all sectors of the economy except agriculture and food processing. Its large technical and economic staff appraises all major investment projects prior to submission to the Council of Ministers for approval. Thereafter, it is the Investment Bank's responsibility to ensure that the project is executed according to plan. The Investment Bank is competently staffed, its appraisal and supervision procedures are satisfactory, and result in a reasonable allocation of resources. It is Romanian practice for the state to invest virtually all funds used for fixed assets in industrial projects through the Investment Bank without formal on-lending arrangements, and recover them through a variety of financial mechanisms including net income transfers, taxes and depreciation payments. The Bank loan would be passed on to the eligible beneficiaries in accordance with this practice. However, for all industrial enterprises that are beneficiaries of the Bank loan, their provision of funds to the State Budget and the Investment Bank would be sufficient to cover the lei equivalent of the debt service on the portion of the loan allocated to them. This would include (notional) repayment of principal plus interest at 10 percent per annum (Section 4.01 of the Loan Agreement). This arrangement is in line with our practice in previous industrial projects. The foreign exchange risk on the Bank loan would be borne by the Investment Bank.

95. The financing of components for construction equipment (Category IV above) would be channelled by the Investment Bank through the National Bank to the eligible beneficiaries under the direction of the Investment Bank. The National Bank, which combines the functions of a central bank and a commercial bank, is responsible for providing funds to meet the working capital requirements of industry in the Romanian system. Accordingly, it would in this case, be responsible for the component imports for incorporation into construction equipment. The Investment Bank is not permitted to engage in short-term financing.

96. The Government would ensure the availability of sufficient funds required for implementation of the sub-projects being assisted by the Bank loan.

Organization and Implementation

97. The Investment Bank would have overall responsibility for execution of the sub-projects by the beneficiaries in accordance with its normal responsibilities. Procurement would be carried out by several foreign trade enterprises, which are jointly responsible to their sectoral Ministry and the Ministry of Foreign Trade and undertake imports and exports in their category. These enterprises are adequately staffed with an average of around 300 technical and commercial personnel. Their procedures, directed and supervised by the Ministry of Foreign Trade, are satisfactory. The beneficiary enterprises would be responsible for actual sub-projects to be carried out under the Loan. The Computer Center is already suitably staffed. The ten industrial enterprises involved are established entities currently conducting successful operations at existing plants. The National Center for Earthquake Engineering is also established but is proposed to be expanded under the project under the direction of existing management, which is fully capable of carrying out the expansion.

Procurement Arrangements

98. Procurement under the project would be limited to direct imports, with no participation from Romanian suppliers. The imports would be procured in accordance with the Bank's guidelines. Of the list of eligible direct imports totalling US\$70 million, equipment amounting up to US\$39 million is suitable for procurement under international competitive bidding procedures. A further amount of up to US\$10 million of components for construction machinery and specialized equipment required quickly and available from a limited number of suppliers would be procured through international shopping requiring Bank review prior to award of contract. This relatively large amount procured through international shopping is appropriate because imported components are needed urgently so that they can be incorporated into locally manufactured construction equipment. Furthermore, the existing production configuration, and the prototypes to be put into production limit the flexibility in choice of components, and accordingly of potential suppliers. Procurement of the specialized equipment is advanced and after considerable technical discussions, the number of suppliers able to meet the requirements has been narrowed down to 3-4 firms in each case. For these items, prior Bank review would comprise submission to and Bank review of the technical specifications, the list of suppliers in at least three Bank member countries and Switzerland from whom bids were solicited, the basis for their selection, bidding documents where applicable, and evaluation report and a draft contract prior to award. Packages of components and small items of equipment under US\$300,000 in value up to an aggregate amount of US\$16 million would be procured through international shopping requiring ex-post review by the Bank. For these items, contracts or invoices accompanied by a list of suppliers in at least three Bank member countries and Switzerland, from whom bids were solicited and their bid amounts, would be required to be submitted prior to disbursement. Finally, up to US\$5 million equivalent of components would be purchased directly from recommended suppliers in view of their proprietary nature, with ex-post review by the Bank.

99. Contracts have been awarded for about US\$11 million of the eligible items following procedures in accordance with Bank guidelines. The amount of advance contracting, though relatively large, is justified in view of the urgent nature of the requirements. Expenditures incurred so far for down payments for these items amounting to about US\$1 million are not recommended for retroactive financing by the Bank. Procurement procedures would be handled by the foreign trade enterprises in collaboration with project beneficiaries. For the items requiring ex-post review by the Bank, the responsible foreign trade enterprises would be required to maintain all necessary records for monitoring and review by Bank supervision missions.

Disbursement

100. The Bank loan would be disbursed for 100 percent of all foreign expenditures for imported equipment and components. The loan is generally expected to be quick disbursing. However in view of the long delivery times of some items of machinery and associated retention payments, disbursement is expected to be completed by June, 1981.

Risk

101. There is little risk in the implementation of the proposed project considering the urgent priority the Government demonstrably attaches to the reconstruction and recovery effort. The very large expansion plans of some of the beneficiaries, that produce for many sectors besides the construction sector, and the fact that the project would comprise a large number of sub-projects in different categories have not permitted overall scrutiny of all the sub-projects in detail. Therefore an internal economic rate of return was not calculated for this project. However, most of the production is geared to domestic market needs based on requirements deriving from the investment plans in various sectors, thus curtailing market risks. The Government's commitment to the sub-projects is based on its revised Five-Year Plan. The project imports are part of the expansions of large well-run plants, with well-defined plans for their activities and production. Implementation planning, in most cases, is well underway and mobilization on-site is advanced. The impact of the project would be monitored during the period of disbursement of the Bank loan through satisfactory reporting requirements for each beneficiary and through Bank supervision missions. The Investment Bank would also monitor the performance of beneficiaries closely. Monitoring and performance assessment would include comparison of actual production achievements of sub-projects with their planned production. The economic benefits of the project were discussed in paragraph 37.

PART VII - LEGAL INSTRUMENTS AND AUTHORITY

102. The draft Loan Agreement between the Bank and the Investment Bank of Romania, the draft Guarantee Agreement between the Socialist Republic of Romania and the Bank, and the report of the Committee provided for in Article III, Section 4(iii) of the Articles of Agreement are being distributed to the Executive Directors separately.

103. I am satisfied that the proposed loan would comply with the Articles of Agreement of the Bank.

PART VIII - RECOMMENDATION

104. I recommend that the Executive Directors approve the proposed loan.

Robert S. McNamara
President

Attachments
May 17, 1978
Washington, D.C.

TABLE 3A
ROMANIA REP. OF - SOCIAL INDICATORS DATA SHEET

LAND AREA (THOU KM2)	ROMANIA REP. OF			REFERENCE COUNTRIES (1970)					
	TOTAL	AGRIC.	237.5 149.0	1960	1970	MOST RECENT ESTIMATE	YUGOSLAVIA	ITALY	GERMANY FED. REP. OF***
GNP PER CAPITA (US\$)	..	550.0**	1450.0**	830.0*	1910.0*	4420.0*			
POPULATION AND VITAL STATISTICS									
POPULATION (MID-YR, MILLION)	18.4	20.3	21.4/a	20.4	53.7	61.6			
POPULATION DENSITY									
PER SQUARE KM.	77.0	85.0	90.0/a	80.0	178.0	240.0			
PER SQ. KM. AGRICULTURAL LAND	126.0	136.0	144.0/a	139.0	266.0	439.0			
VITAL STATISTICS									
CRUDE BIRTH RATE (/THOU, AV)	23.9	19.0	19.7	21.0	18.6	17.3			
CRUDE DEATH RATE (/THOU, AV)	10.9	8.9	9.3	9.1	9.7	11.6			
INFANT MORTALITY RATE (/THOU)	75.7	49.4	34.7	55.5	29.6	23.6			
LIFE EXPECTANCY AT BIRTH (YRS)	65.9	67.7	69.1	67.7	71.9	70.3			
GROSS REPRODUCTION RATE	1.2	1.3	1.3	1.3	1.3	1.2			
POPULATION GROWTH RATE (%)									
TOTAL	1.2	1.0	1.0	1.0	0.8	1.0			
URBAN	3.8	3.4	2.1	4.6	0.8	4.1			
URBAN POPULATION (% OF TOTAL)									
	32.0	40.8	43.0	38.7	51.5	82.4			
AGE STRUCTURE (PERCENT)									
0 TO 14 YEARS	27.9/a	25.9	25.4/a	28.3	24.4	23.2			
15 TO 64 YEARS	64.9/a	65.5	64.8/a	64.3	65.2	63.6			
65 YEARS AND OVER	7.2/a	8.6	9.8/a	7.4	10.4	13.2			
AGE DEPENDENCY RATIO									
ECONOMIC DEPENDENCY RATIO	0.5	0.5	0.5	0.6	0.5	0.6			
	0.7/b	0.7/a	0.7/a,b	..	0.9/a	0.9			
FAMILY PLANNING									
ACCEPTORS (CUMULATIVE, THOU)	..	..	..	..	..	..
USERS (% OF MARRIED WOMEN)	..	..	..	..	..	..
EMPLOYMENT									
TOTAL LABOR FORCE (THOUSAND)	9600.0	9900.0	10200.0/a	..	19600.0	26500.0			
LABOR FORCE IN AGRICULTURE (%)	66.0	49.0	36.0/a	..	19.0	8.9			
UNEMPLOYED (% OF LABOR FORCE)	..	..	..	..	3.1	0.7			
INCOME DISTRIBUTION									
% OF PRIVATE INCOME REC'D BY-									
HIGHEST 5% OF HOUSEHOLDS	..	..	..	15.1	..	..	
HIGHEST 20% OF HOUSEHOLDS	..	..	..	41.4	..	..	
LOWEST 20% OF HOUSEHOLDS	..	..	..	6.6	..	..	
LOWEST 40% OF HOUSEHOLDS	..	..	..	18.4	..	..	
DISTRIBUTION OF LAND OWNERSHIP									
% OWNED BY TOP 10% OF OWNERS	..	..	..	15.1/a	..	..	
% OWNED BY SMALLEST 10% OWNERS	..	..	..	84.9/b	..	..	
HEALTH AND NUTRITION									
POPULATION PER PHYSICIAN	740.0	680.0	620.0	1010.0	550.0	580.0			
POPULATION PER NURSING PERSON	300.0	200.0	180.0	410.0	470.0/b	350.0			
POPULATION PER HOSPITAL BED	180.0/c	140.0/b	120.0/c	170.0	90.0	90.0			
PER CAPITA SUPPLY OF -									
CALORIES (% OF REQUIREMENTS)	105.0	118.0	118.0/d	124.0	126.0	121.0			
PROTEIN (GRAMS PER DAY)	81.0	92.0	90.0/d	92.0	100.0	88.0			
-OF WHICH ANIMAL AND PULSE	24.0	28.0	..	29.0	42.0	56.0			
DEATH RATE (/THOU) AGES 1-4									
	4.9/a	2.4	2.1	2.6	1.0	0.9			
EDUCATION									
ADJUSTED ENROLLMENT RATIO									
PRIMARY SCHOOL	98.0	113.0	108.0	94.0	110.0	129.0			
SECONDARY SCHOOL	24.0	44.0	49.0	45.0	60.0	66.0			
YEARS OF SCHOOLING PROVIDED (FIRST AND SECOND LEVEL)									
	12.0	14.0	14.0	12.0	13.0	15.0			
VOCATIONAL ENROLLMENT (% OF SECONDARY)									
	54.0	58.0	67.0	72.0	26.0	48.0			
ADULT LITERACY RATE (%)	..	..	98.0/e	85.0	97.0	99.0			
HOUSING									
PERSONS PER ROOM (URBAN)									
OCCUPIED DWELLINGS WITHOUT PIPED WATER (%)	..	1.3/c	..	..	..	0.7/a			
ACCESS TO ELECTRICITY (% OF ALL DWELLINGS)	..	88.0/c,d	..	..	..	0.3/b			
RURAL DWELLINGS CONNECTED TO ELECTRICITY (%)	..	49.0/c	..	..	..	100.0			
	..	27.0/c	..	..	..	..
CONSUMPTION									
RADIO RECEIVERS (PER THOU POP)	109.0	152.0	146.0	165.0	218.0	318.0			
PASSENGER CARS (PER THOU POP)	..	..	..	35.0	190.0	220.0			
ELECTRICITY (KWH/YR PER CAP)	414.0	1615.0	2411.0	1288.0	2262.0	4128.0			
NEWSPRINT (KG/YR PER CAP)	2.1	2.6	2.1	4.3	5.3	17.7			

SEE NOTES AND DEFINITIONS ON REVERSE

NOTES

Unless otherwise noted, data for 1960 refer to any year between 1959 and 1961, for 1970 between 1968 and 1970 and for Most Recent Estimate between 1973 and 1975.

* GNP per capita data are based on the World Bank Atlas methodology (1974-76 basis).

** Not comparable to those for other Centrally Planned Economies. Derived by using the Bank Atlas methodology, by adjusting official Romanian National Accounts data and converting them into US dollars at the effective exchange rate for foreign trade transactions which approximates Lei 20 per US dollar.

*** The Federal Republic of Germany has been selected as an objective country because it is an industrialized European country with major trade ties with Romania.

ROMANIA 1960 A 1962: B Ratio of population under 15 and 65 and over to total labor force. C Hospitals only. D Hospitals only. E excludes sanatoria and maternity homes.

1970 A Ratio of population under 15 and 65 and over to total labor force; B Hospitals only, excludes sanatoria and maternity homes; C 1966; D Inside only.

MOST RECENT ESTIMATE: A 1976; B Ratio of population under 15 and 65 and over to total labor force, C Hospitals only, excludes sanatoria and maternity homes; D 1969-71 average; E 1974, official estimate is 100 percent.

1970 A Agriculture land held by social sector "Kamhantzi"; B Agriculture land held by private small-holders "10 hectares maximum"; C Including midwives, assistant midwives, assistant nurses and nursing auxiliaries.

ITALY 1970 A Ratio of population under 15 and 65 and over to total labor force; B Hospital personnel.

GERMANY FED. REP. OF 1970 A Total, urban and rural; B Inside only. R18, February 21, 1978

DEFINITIONS OF SOCIAL INDICATORS

Land Area (thou km²) - Total - Total surface area comprising land area and inland waters.
Area - Total surface area comprising land area and inland waters.
Agri. Area - Most recent estimate of agricultural area used temporarily or permanently for crops, pastures, market & kitchen gardens or to its fallow.

GNP per capita (US\$) - GNP per capita estimates at current market prices, calculated by same conversion method as World Bank Atlas (1973-75 basis); 1960; 1970 and 1975 data.

Population and vital statistics - Population (mid-year, billion) as of July first if not available. Average of two end-year estimates, 1960, 1970 and 1975 data.

Population density - Per square km - Mid-year population per square kilometer
Population density - total - Total population per square km of agricultural and non-agricultural land only.

Vital statistics
Crude birth rate, per thousand, average - Annual live births per thousand of mid-year population; ten-year arithmetic averages ending in 1960 and 1970, and five-year average ending in 1975 for most recent estimate.

Crude death rate, per thousand, average - Annual deaths per thousand of mid-year population; ten-year arithmetic averages ending in 1960 and 1970 and five-year average ending in 1975 for most recent estimate.

Infant mortality rate (/thou) - Annual deaths of infants under one year of age per thousand live births.

Life expectancy at birth (yrs) - Average number of years of life remaining at birth, usually five-year averages ending in 1960, 1970 and 1975 for developing countries.

Greenhouse effect - Average number of live daughters a woman will bear in her normal reproductive period if she experiences present age-specific fertility rates, usually five-year averages ending in 1960, 1970 and 1975 for developing countries.

Population growth rate (%) - total - Compound annual growth rates of mid-year population for 1950-60, 1960-70 and 1970-75.

Population growth rate (%) - urban - Computed like growth rate of total population; different definitions of urban areas may affect comparability of data among countries.

Urban population (%) of total - Ratio of urban to total population; different definitions of urban areas may affect comparability of data among countries.

Age structure (percent) - Children (0-14 years), working-age (15-64 years), and retired (65 years and over) as percentages of mid-year population.

Age dependency ratio - Ratio of population under 15 and 65 and over to those of ages 15 through 64.

Economic dependency ratio - Ratio of population under 15 and 65 and over to the labor force in age group of 15-64 years.

Family planning - acceptors (cumulative, thou) - Cumulative number of acceptors of birth-control devices under auspices of national family planning program.

Family planning users (%) of married women - Percentages of married women of child-bearing age (15-44 years) who use birth-control devices to all married women in same age group.

Employment
Total labor force (thousand) - Economically active persons, including armed forces and unemployed but excluding housewives, students, etc.; definitions in various countries are not comparable.

Labor force in agriculture (%) - Agricultural labor force (in farming, forestry, hunting and fishing) as percentage of total labor force.

Unemployed (%) of labor force - Unemployed are usually defined as persons who are able and willing to take a job, out of a job on a given day, retrained out of a job, and seeking work for a specified minimum period not exceeding one week, may not be comparable between countries due to different definitions of unemployed and source of data, e.g., employment office statistics, sample surveys, compulsory unemployment insurance.

Income distribution - Percentages of private income (both in cash and kind) received by richest 5%, richest 20%, poorest 20%, and poorest 40% of households.

Distribution of land ownership - Percentages of land owned by wealthiest 10% and poorest 10% of land owners.

Health and Nutrition
Population per physician - Population divided by number of practicing physicians qualified from a medical school at university level

Population per nursing person - Population divided by number of practicing male and female graduate nurses, "trained" or "certified" nurses, and auxiliary personnel with training or experience.

Population per hospital bed - Population divided by number of hospital beds available in public and private general and specialized hospital and rehabilitation centers; excludes nursing homes and establishments for custodial and preventive care.

Per capita supply of calories (%) of requirements - Computed from energy equivalent of net food supplies available in country per capita per day. Available supplies comprise domestic production, imports less exports, and changes in stock, net supplies excluding animal feeds, seeds, quantities used by food processing plants, and other uses.

Per capita supply of protein (grams per day) - Protein content of net food supply on physiological basis for normal activity and which comprise eating, atmospheric temperature, body weights, age and sex distributions of population, and allowing 10% for waste at household level.

Per capita supply of food per day - net supply of food is defined as above; requirements for all countries established by USDA Economic Research Service provide for a minimum allowance of 60 grams of total protein per day, and 20 grams of animal and pulse protein, of which 10 grams should be animal protein; these standards are lower than those of 75 grams of total protein and 23 grams of animal protein as an average for the world, proposed by FAO in the Third World Food Survey.

Per capita protein supply from animal and pulse - Protein supply of food derived from animals and pulses in grams per day.

Death rate (/thou) ages 1-4 - Annual deaths per thousand in age group 1-4 years, to children in this age group; suggested as an indicator of malnutrition.

Education
Adjusted enrollment ratio - primary school - Enrollment of all ages as percentage of primary school-age population; includes children aged 6-11 years but adjusted for different lengths of primary education, for countries with universal education, enrollment may exceed 100% since some pupils are below or above the official school age.

Adjusted enrollment ratio - secondary school - Computed as above; secondary education requires at least four years of approved primary instruction; provides general, vocational or teacher training instructions for pupils of 12 to 17 years of age; correspondence courses are generally included.

Years of schooling provided (first and second levels) - Total years of schooling; at secondary level, vocational instruction may be partially or completely included.

Vocational enrollment (%) of secondary - Vocational institutions include technical, industrial or other programs which operate independently or as departments of secondary institutions.

Adult literacy rate (%) - Literate adults (able to read and write) as percentage of total adult population aged 15 years and over.

Housing
Persons per room (urban) - Average number of persons per room in occupied urban dwellings in urban areas. Dwellings exclude non-permanent structures and unoccupied parts.

Occupied dwellings without piped water (%) - Occupied conventional dwellings in urban and rural areas without inside or outside piped water facilities as percentage of all occupied dwellings.

Access to electricity (%) of all dwellings - Conventional dwellings with electricity in living quarters as percent of total dwellings in urban and rural areas.

Rural dwellings connected to electricity (%) - Computed as above for rural dwellings only.

Consumption
Radio receivers (per thou pop) - All types of receivers for radio broadcasts to general public per thousand of population, excludes unlicensed receivers in countries and in years when registration of radio sets was in effect. Data for recent years may not be comparable since most countries abolished licensing.

Passenger cars (per thou pop) - Passenger cars comprise motor cars seating more than eight persons; excludes ambulances, hearses and military vehicles.

Electricity (kwh/yr per cap) - Annual consumption of industrial, commercial, public and private electricity in kilowatt hours per capita, generally based on production data, without allowance for losses in grids but allowing for losses and exports of electricity.

Newsprint (kg/yr per cap) - Per capita annual consumption in kilograms estimated from domestic production plus net imports of newsprint.

ECONOMIC INDICATORS

	<u>GROSS NATIONAL PRODUCT IN 1976</u>		<u>ANNUAL RATE OF GROWTH (% , constant prices)</u>			
	US\$ Mln.	%	1961-65	1966-70	1971-75	1975-76
GNP at Market Prices	27,400	100.0	9.0 ^{1/}	7.7 ^{1/}	11.3 ^{1/}	10.5 ^{1/}
Gross Fixed Domestic Investment	7,450	27.2	11.3	11.2	11.2	8.2
Gross National Saving	7,434	27.1	..	..	..	10.1
Current Account Balance	-16	0.1	..	..	..	..
Exports of Goods, NFS	6,504	23.7	9.0 ^{2/3/}	10.9 ^{2/3/}	23.6 ^{2/3/}	14.0 ^{2/}
Imports of Goods, NFS	6,447	23.5	10.7 ^{2/3/}	12.7 ^{2/3/}	22.3 ^{2/3/}	13.2 ^{2/}

OUTPUT, LABOR FORCE AND PRODUCTIVITY IN 1976

	<u>Value Added</u>		<u>Labor Force</u>		<u>V.A. Per Worker</u>	
	US\$ Bln.	%	Mln.	%	US \$	%
Agriculture	3.66	18.3	3.64	35.6	1,005	51.4
Industry	11.18	55.9	3.27	31.9	3,419	174.9
Construction	1.44	7.2	0.85	8.3	1,694	86.6
Other	3.72	18.6	2.47	24.2	1,506	75.0
Total/Average	20.0	100.0	10.23	100.0	1,955	100.0

GOVERNMENT FINANCE IN 1976

	<u>Central Government</u>	
	<u>Lei Billions</u>	<u>% of GDP</u>
Total Receipts	254.5	46.4
Total Expenditures	250.1	45.6
Total Surplus	4.4	0.8

MONEY, CREDIT AND PRICES

(in billions of Lei, end of year)

	1971	1972	1973	1974	1975	1976
Money Supply	..	..	..	160.1	176.4	201.4
Short-term Bank Credit	..	..	131.3	155.3	170.2	194.0
Retail Prices (1970 = 100)	101.6	101.6	102.4	103.7	103.9	104.4
Percentage Changes in Retail Prices	1.6	-	0.8	1.3	0.2	0.5

^{1/} Growth rate of national income.

^{2/} In current prices.

^{3/} Growth rates of exports and imports only.

BALANCE OF PAYMENTS (Convertible Currencies)

	<u>1971</u>	<u>1975</u>	<u>1976</u>
	(Millions US \$)		
Exports of Goods & NFS	+944	+3,105	+3,653
Imports of Goods & NFS	-988	-3,217	-3,592
Resource Gap (deficit = -)	-44	-112	+61
Interest Payments	-40	-143	-122
Other Factor Payments (net)	-25	-5	0
Balance on Current Account	-109	-260	-61
Direct Foreign Investment			
Net MLT Borrowing ^{1/}			
Disbursements	+312	+859	+912
Amortization	-190	-370	-482
Subtotal	+122	+489	+430
Export Credits Extended ^{3/} (net)	2/	-41	-274
Short-term Credit (net)	-20	-162	-44
Net Errors & Omission	-	-	-
Increase in Reserves (+)	-7	+26	+52
Fuel & Related Materials			
Imports	635.6	2,042.9	2,496.8
of which Petroleum	..	..	..
Exports	425.5	1,189.5	1,477.5
of which Petroleum	142.9	539.5	..

EXCHANGE RATES

1. Official Rate

Before August 1971 : 6 lei:US\$1
 August 1971-February 1973: 5.53 lei:US\$1
 Since February 1973 : 4.97 lei:US\$1

2. Tourist Rate

Before August 1971 : 18 lei:US\$1
 August 1971-February 1973 : 16 lei:US\$1
 February 1973-October 1974: 14.38 lei:US\$1
 Since October 1974 : 12 lei:US\$1

3. Conversion Rate for Traded Goods

July 1973 - February 1978 : 20 lei:US\$1
 Since March 1978 : 18 lei:US\$1

MERCHANDISE EXPORTS 1976
(All Currencies)

	<u>US \$ Mln</u>	<u>%</u>
Capital goods	1,578	26
Consumer goods	1,005	16
Foodstuffs	596	10
Intermediate goods	508	8
Raw materials	2,450	40
Industrial	2,061	34
Agricultural	389	6
Total	6,137	100

EXTERNAL DEBT (June 30, 1977)

	<u>US \$ Mln</u>
Total M & LT	3,266
of which convertible currencies	3,174

DEBT SERVICE RATIO 1976

	<u>%</u>
Convertible currencies only	17.4

IBRD LENDING (April 30, 1978)
(US\$ Million)

Outstanding and Disbursed	332.0
Undisbursed	490.8
Outstanding incl.	-----
Undisbursed	822.8

EMENA

May 15, 1978

^{1/} Includes use of IMF credit.
^{2/} Included in M & LT Capital.
^{3/} Includes S, M & LT credits extended.

STATUS OF BANK GROUP OPERATIONS IN ROMANIA

A. STATEMENT OF BANK LOANS (As of April 30, 1978)

<u>Loan Number</u>	<u>Year</u>	<u>Borrower</u>	<u>Purpose</u>	US\$ Million		
				<u>Bank</u>	<u>TW</u>	<u>IDA</u>
One loan fully disbursed				20.0		-
Ln. 1020-RO	1974	Investment Bank	Fertilizer	60.0		18.0
Ln. 1027-RO	1975	Investment Bank	Special Steel	70.0		23.0
Ln. 1028-RO	1975	Investment Bank	Thermal Power	60.0		2.9
Ln. 1082-RO	1975	BAFI ^{a/}	Irrigation	70.0		9.6
Ln. 1083-RO	1975	BAFI	Agricultural Credit	30.0		9.6
Ln. 1169-RO	1976	BAFI	Flood Recovery	40.0		3.2
Ln. 1242-RO	1976	Investment Bank	Hydropower	50.0		32.3
Ln. 1247-RO	1976	BAFI	Irrigation	60.0		50.9
Ln. 1368-RO	1977	BAFI	Irrigation	60.0		52.1
Ln. 1436-RO	1977	Investment Bank	Bearings	38.0		38.0
Ln. 1447-RO	1977	Investment Bank	Glass Fiber	18.3		15.0
Ln. 1448-RO	1977	Investment Bank	Polyester	50.0		46.0
Ln. 1479-RO	1978	BAFI	Agricultural Credit	71.0		64.7
Ln. 1509-RO	1978	BAFI	Irrigation	40.5		40.5
Ln. 1536-RO ^{b/}	1978	Investment Bank	Tire	<u>85.0</u>		<u>85.0</u>
Total				822.8		490.8
Of which has been repaid				-		-
Total now outstanding				822.8		
Amount sold			18.6	-		
Of which repaid			<u>0.0</u>	<u>18.6</u>		
Total now held by Bank ^{c/}				804.2		
Total undisbursed				490.8		490.8

^{a/} Bank for Agriculture and Food Industry

^{b/} Not yet effective

^{c/} Excluding exchange adjustments.

B. PROJECTS IN EXECUTION

LN No. 1020 Bacau Fertilizer Project; US\$60 Million Loan of June 28, 1974; Date of Effectiveness: December 31, 1974; Closing Date: December 31, 1978

The project is proceeding satisfactorily after initial delays due to changes in site and project scope, and delays in design and construction. About 85 percent of total procurement is committed, and construction is well advanced. The ammonia and the DAP plants are expected to be commissioned by June 1978, and the urea plant at the beginning of 1979, about 15 months later than expected. The final project cost is expected to be close to the appraisal estimate.

Ln No. 1027 Otelinox Special Steel Project; US\$70 Million Loan of July 10, 1974; Date of Effectiveness: April 3, 1975; Closing Date: December 31, 1979

Execution of the project was delayed several months, primarily because of the complexity of two large bid packages, the Romanians' lack of familiarity with international competitive bidding procedures under the Bank's Guidelines, and lack of interest and competition among suppliers. Progress on procurement has been closely monitored by several Bank supervision missions. The contracts for the two steel mills under the loan have been signed and construction is progressing in accordance with contracted schedules. Total project costs are expected to be slightly below appraisal estimates, but this is not expected to affect disbursement of the loan which is now fully committed for two main supply contracts.

Ln No. 1028 Turceni Thermal Power Project; US\$60 Million Loan of July 10, 1974; Date of Effectiveness: November 6, 1974; Closing Date: June 30, 1979

Delays in construction due to late delivery of equipment are likely to result in a five month delay in commissioning of generating units. Project execution is otherwise according to plan and satisfactory. Training of future operational staff is in hand.

Ln No. 1082 Giurgiu-Razmiresti Irrigation Project; US\$70 Million Loan of February 6, 1975; Date of Effectiveness: May 5, 1975; Closing Date: June 30, 1979

Construction of project works is progressing satisfactorily and about 85 percent of the project has been completed. Procurement is 93 percent completed. About 95 percent of the project area will be irrigated by June, 1978. All remaining works are expected to be completed by December, 1978. Total project costs are expected to be about US\$33 million less than appraisal estimates, and about US\$4 million of the loan amount is expected to be cancelled if not required for the project before the closing date.

Ln No. 1083 Sadova-Corabia Agricultural Credit Project; US\$30 Million Loan of February 6, 1975; Date of Effectiveness: April 29, 1975; Closing Date: December 31, 1979

Progress continues to be satisfactory in implementing subprojects. A contract for the pre-mix feed mill has been concluded and remaining project procurement, for chemicals and fertilizers, is being carried out under bulk contracts tendered internationally for 1978 Romanian requirements. Disbursements amounted to US\$19.4 million as of March 31, 1978 and are 16 percent ahead of the appraisal estimate.

Ln No. 1169 Flood Recovery Project (Agricultural Component); US\$40 Million Loan of November 12, 1975; Date of Effectiveness: December 2, 1975; Closing Date: December 31, 1979

Project execution is proceeding well and disbursements are ahead of schedule. Equipment procured under international competitive bidding has been delivered and only small quantities of spare parts remain to be procured. Bids were received in March 1977 for flood early warning system equipment. The Romanians advised us that bid evaluation was delayed because of the technical complexity of the package, but the Romanians have now submitted a bid evaluation report to the Bank.

Ln No. 1242 Riul Mare Retezat Hydropower Project; US\$50 Million Loan of April 28, 1976; Date of Effectiveness: July 26, 1976; Closing Date: December 31, 1981

Due to shortage of manpower, tunneling works have been delayed and mechanized excavation methods are being investigated. Project execution is according to plan. Civil works for the dam and underground power station are well underway, and about 75 percent of the loan amount has been committed.

Ln No. 1247 Rasova-Vederoasa Irrigation and Agriculture Development Project; US\$60 Million Loan of April 28, 1976; Date of Effectiveness: November 3, 1976; Closing Date: June 30, 1981

Construction of pumping stations, canals, and other project works is well underway and progress on these facilities is satisfactory. Facilities for four dairy farms are complete and contracts for purchase of about 4,600 imported heifers (50 percent of total) valued at over US\$3 million have been awarded. Procurement contracts for all equipment, except canal lining equipment, have been awarded.

Ln No. 1368 Ialomita-Calmatui Irrigation Project; US\$60 Million Loan of March 2, 1977; Date of Effectiveness: June 23, 1977; Closing Date: June 30, 1982

Procurement for this project has been consolidated with that for the Rasova-Vederoasa Project (Ln. 1247) noted above, and all contracts have already

been awarded, except those for tile laying machines and canal lining machines, which are expected to be awarded shortly. Construction of some project works is underway and progress is satisfactory.

LN No. 1436 Brasov Bearings Project; US\$38 Million Loan of June 15, 1977;
Date of Effectiveness: August 11, 1977; Closing Date:
December 31, 1982

Initial bids on major bid packages have been received and procurement is proceeding satisfactorily.

Ln No. 1447 Bucharest Glass Fiber Project; US\$18.3 Million Loan of
June 15, 1977; Date of Effectiveness: August 11, 1977;
Closing Date: June 30, 1980

Main supply contracts have been signed, and execution of the project is proceeding satisfactorily.

LN No. 1448 Cimpulung, Muscel Polyester Project; US\$50 Million Loan of
June 15, 1977; Date of Effectiveness: October 3, 1977;
Closing Date: March 31, 1981

The main supply contract has been signed, and execution of the project is proceeding satisfactorily.

Ln No. 1479 Pig Production and Processing Project; US\$71 Million Loan of
July 15, 1977; Date of Effectiveness: September 28, 1977;
Closing Date: June 30, 1982

Project implementation is proceeding satisfactorily. BAFI has made subloan commitments of US\$149.4 million or 46 percent of total project costs.

Ln No. 1509 Viisoara Irrigation Project; Us\$40.5 Million Loan of
January 27, 1978; Closing Date: December 31, 1983

This loan was signed on January 27, and became effective on May 15, 1978.

Ln No. 1536 Tires Project; US\$85.0 Million Loan of March 30, 1978;
Closing Date: December 31, 1981

This loan was signed on March 30, and the deadline for its effectiveness is June 29, 1978.

ROMANIA

POST EARTHQUAKE CONSTRUCTION ASSISTANCE PROJECT

SUPPLEMENTARY PROJECT DATA SHEET

Section I: Timetable of Key Events

- | | |
|---|-----------------------------------|
| (a) Project first identified by the Bank: | March 1977 |
| (b) Time taken by the country to prepare the project: | Six months (March-September 1977) |
| (c) Agency which prepared the Project: | Investment Bank |
| (d) Date of first Bank mission to consider the project: | October 25, 1977 |
| (e) Date of departure of Appraisal Mission: | October 25, 1977 |
| (f) Date of completion of negotiations: | April 20, 1978 |
| (g) Planned date of effectiveness: | September 12, 1978 |

Section II: Special Bank Implementation Actions

None

Section III: Special Conditions

None

ROMANIAPOST EARTHQUAKE CONSTRUCTION ASSISTANCE PROJECTSELECTED DOCUMENTS^{a/} AND DATA AVAILABLE IN THE PROJECT FILEA. Selected Reports and Studies on the Sector or Sub-sector

- A1 Romania: The Industrialization of an Agrarian Economy under Socialist Planning; (Report No. 1601-RO), March 1978 (special reference to Chapters Ten and Twelve).
- A2 Construction and the Construction Materials Subsector; Mission Notes.
- A3 Plans for Development of Cement Capacity; Discussions with the Cement Central.
- A4 Romania: Engineering Industry, A Review of Selected Subsectors and Projects; Industrial Projects Department, August 13, 1975.

B. Selected Reports and Studies Relating to the Project

- B1 Report on Aggregate Statement of Damages; submitted by the Ministry of Finance, July 6, 1977.
- B2 Report on Reconstruction and Construction Assistance Requirements of Specific Enterprises; submitted by the Investment Bank, September 22, 1977.
- B3 Impact of the Earthquake on the Five-Year Plan (1976-80); submitted by Investment Bank, October, 1977, supplemented in January and February, 1978 with specific reference to the manufacturing industries related to construction.
- B4 Statement of Foreign Aid Received to Assist Rehabilitation; submitted by Investment Bank, October, 1977.
- B5 Assistance to the Government of Romania in the Implementation of a Rehabilitation and Reconstruction Program; UNDP Project Document, June 1977.
- B6 Post Earthquake Measures to Strengthen the Construction Sector; submitted by Investment Bank, January 3, 1978.

^{a/} The Annex lists the major contents of the file and excludes mention of Bank memoranda and a number of working notes.

B7 Engineering and Metal Working (with special reference to project beneficiaries); Mission Notes.

B8 Building and Construction Equipment Suppliers (with special reference to project beneficiaries); Mission Notes.

C. Selected Working Notes and Implementation Data

C1 The Borrower; Mission notes and excerpts from the basic economic report.

C2-C13 Project Beneficiaries (separate notes for all beneficiaries that summarize current status, effects of the earthquake, and project impact); Mission Notes.

C14 Foreign Trade Enterprises in the Context of the Romanian System; Mission Notes.

C15 Foreign Trade Enterprises Significantly Involved in the Project; Mission Notes.

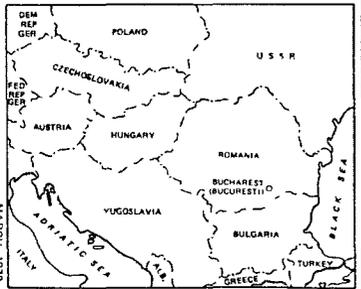
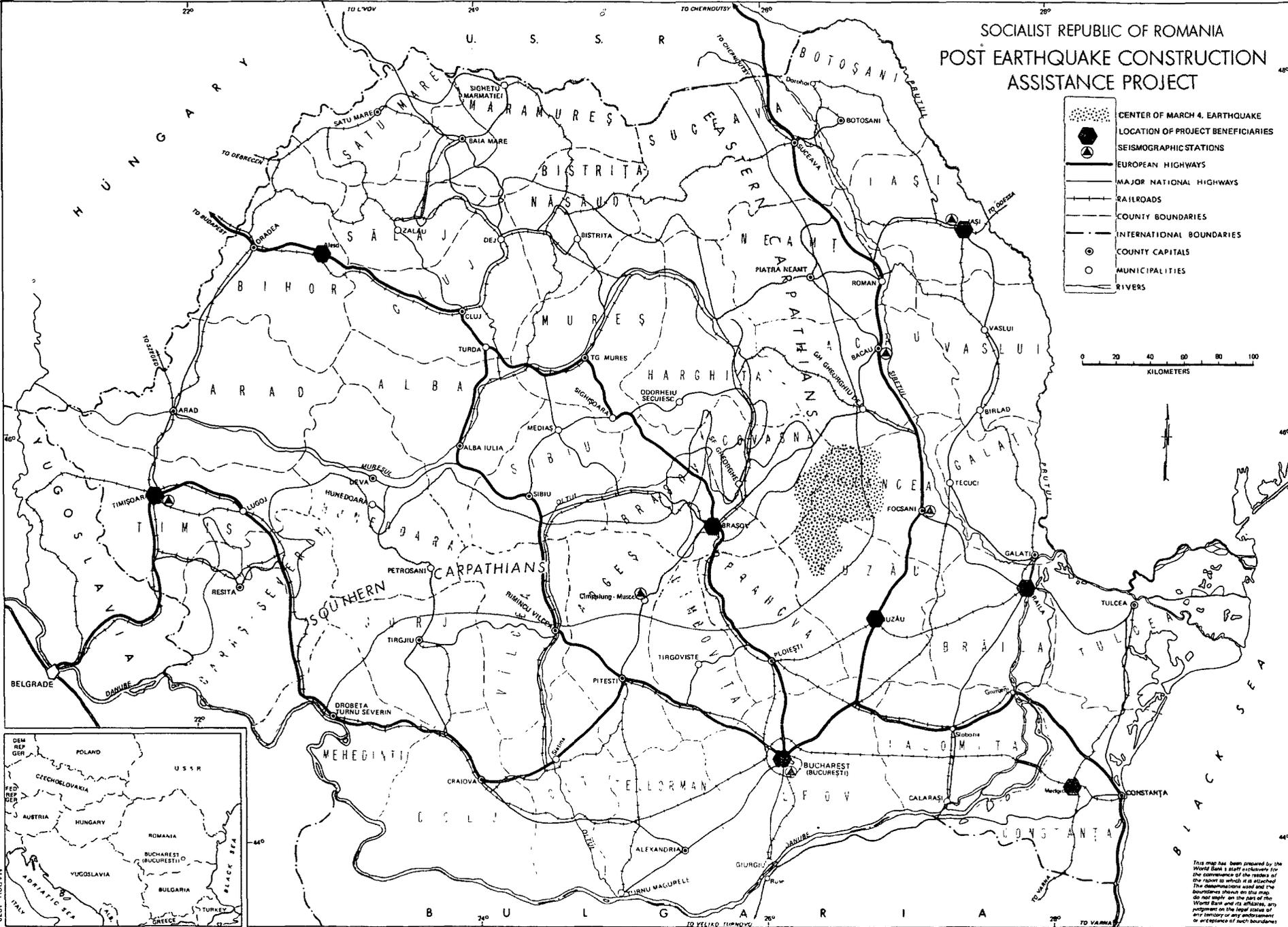
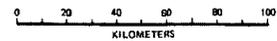
C16 List of Eligible Beneficiaries and Imports (by category and procurement method).

C17 Decree 152/1974 (relates to bidding procedures for imports including those financed by the Bank).

Industrial Projects Department,
March, 1978

SOCIALIST REPUBLIC OF ROMANIA POST EARTHQUAKE CONSTRUCTION ASSISTANCE PROJECT

-  CENTER OF MARCH 4, EARTHQUAKE
-  LOCATION OF PROJECT BENEFICIARIES
-  SEISMOLOGIC STATIONS
-  EUROPEAN HIGHWAYS
-  MAJOR NATIONAL HIGHWAYS
-  RAILROADS
-  COUNTY BOUNDARIES
-  INTERNATIONAL BOUNDARIES
-  COUNTY CAPITALS
-  MUNICIPALITIES
-  RIVERS



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