





Potash export from the port of Wismar, in the GDR.

Economic interaction between East and South – the mineral resource dimension

By István Dobozi

Mineral imports from the "third world" are becoming increasingly important to the European CMEA countries. In 1980 more than one-fifth of their total imports came from the developing countries. István Dobozi analyses the background to this situation and argues for the extension of East-South trade through closer, more direct and sophisticated forms of co-operation through compensation agreements, international consortia and joint international socialist enterprises and service agreements. He also looks at the structural changes that are necessary to carry through such a policy and stresses the mutual advantages for both parties of a stable long-term co-operation in the field of raw materials.

István Dobozi is Professor of Economics and Head of the Institute for World Economics in Budapest, Hungary. He is a member of the Editorial Advisory Board of RMR.

INTRODUCTION

The minerals and fuels situation in the European CMEA¹ countries, taken overall, is characterized by a high degree of self-sufficiency. In fact, the CMEA group as a whole is a net exporter of many important fuels and minerals (crude petroleum, natural gas, coal, copper, zinc, nickel, potash, etc). This circumstance endows the CMEA community with a high economic security, the advantages of which become manifest especially in those periods when the commodity markets of the non-socialist world are characterized by imbalances and fluctuations and by a tendency towards increased politicization. In the 1970s, such tendencies unfolded with a vigour never experienced before on most of the commodity markets, but especially on the market of petroleum.

Mineral and fuel reserves are distributed rather unevenly among the European CMEA countries. Apart from the Soviet Union, known reserves of considerable significance are limited to a few materials or fuels such as coal, copper, sulphur and zinc in Poland, lignite and potash in the German Democratic Republic (GDR), coal in Czechoslovakia, coal, hydrocarbons and manganese in Romania, coal, lead, zinc and copper in Bulgaria, and coal, hydrocarbons, bauxite and copper in Hungary. The CMEA Six /the European CMEA countries excluding the Soviet Union/ are net exporters of hardly any fuels and minerals. For want of an adequate fuel and mineral reserve base, the expansion of mining in the 1960s could not keep abreast of the dynamic growth of demand in any country of the CMEA Six group. The import dependence of that group increased, and the countries in question became net importers of fuels and minerals. In 1960s, there were still three net exporters of fuels and minerals in the European CMEA: the Soviet Union, Poland and Romania. Since 1965, however, only the Soviet Union has remained so.

Insufficient domestic mineral and fuel

reserve bases moved the European CMEA countries to develop and expand intra-CMEA cooperation; the basis for doing so was the complementarity of the CMEA countries' mineral resources and mining capabilities, and the expansion potential of mining in the Soviet Union above all. Over the last three decades, intra-CMEA integration reached the greatest intensity precisely in the minerals and fuels sector of the member countries. As a result, in the late 1970s intra-CMEA trade satisfied 70–75 per cent of the European CMEA countries' import demand in petroleum and petroleum products, 55 per cent in coal, 75 per cent in iron ore and 75 per cent in aluminium.²

Marginal imports from outside CMEA

All in all, the European CMEA countries' imports from outside the group are more or less marginal in the case of most fuels and minerals. This is why this country group faces no problems of supply security on the scale experienced by the developed market-economy countries. In the majority of the European CMEA countries, a traditional reliance on socialist resources was the outcome of economic rather than security-of-supply considerations. The system of intra-CMEA cooperation in the fuels and minerals sphere favoured those countries of the economic community which were net importers.

Purchases of fuels and minerals from sources in the developed market-economy countries have had, in addition to the quantity constraints imposed by a somewhat limited hard-currency buying power, also undesired repercussions on development policy, limiting the availability of financial resources needed for the procurement of modern technology from the West. Furthermore, the majority of the European CMEA countries have been, for a number of reasons such as lack of finance and experience, fear of risk, insufficient domestic economic motivation, re-

luctant to embark upon mining ventures in the developing countries. The only country striving purposefully for a strong diversification of its fuels and minerals supply has been Romania which has expanded its mining investment rather vigorously in a number of developing countries.

Fuels and minerals imports from the Third World have been of growing importance to the European CMEA group nevertheless, as indicated by the fact that the share of developing countries in the total mineral and fuel imports of the socialist countries increased from 9,9 per cent in 1971 to 21,1 per cent in 1980. (Calculated in value terms.)

The developing countries' share is especially high in the case of metalliferous ores and fuels (27.7 per cent and 22.6 per cent respectively). (See Table 1).

In 1980, the European CMEA coun-

tries imported from the developing world some 27 to 28 Mt of alumina, and significant quantities of rock phosphate, manganese and chrome ore, copper, zinc and lead. At present, the European CMEA group as a whole is a net importer of the following important mineral commodities: rock phosphate, bauxite, iron ore, tin and lead.

EVOLUTION OF EAST-SOUTH COOPERATION

Technical assistance

The true significance of cooperation in raw materials between the European CMEA countries and the developing countries is much greater than one would estimate purely on the basis of the comparatively restricted commodity flows. The European CMEA countries, which have a substantial experience and a sophisticated scientific-technical base in mining, pro-

vide in many a developing country a substantial assistance in the geological prospecting for natural resources, and in the creation or development of a national mining industry. Assistance rendered by the European CMEA countries encompasses activities such as planning; general geological surveying and exploration³; prospecting for specific minerals, prospect drilling, laboratory essays and tests in one of the European CMEA countries; the creation of laboratories and prospecting institutions; the creation of training institutions in geology, geophysics and mining; the sending of training personnel and the supply of equipment to such institutions; training of the developing countries' specialist cadres at the universities and specialized schools of the European CMEA countries; technical management of nationalized mines and works; the supply of mining and mining-related machinery and equipment.

Mining capacities realized or being constructed in the developing countries with assistance from the European CMEA countries permit the annual production, among other things, of some 60 Mt of crude petroleum, more than 20 Mt coal and 12 Mt of iron ore. Plants constructed with assistance from the European CMEA countries process 30 Mt of crude petroleum, produce 30 Mt of steel products, and 40TWh of electric energy per year.⁴ Capacities of enterprises built and under construction with Soviet assistance in the developing countries as of January 1981 are shown in Table 2. Between 1976 and 1980 these Soviet-assisted developing country enterprises have shipped to the USSR some 23 Mt oil, over 40 000 Mm³ natural gas, 12 Mt bauxite, and considerable quantities of ferrous and non-ferrous metals and various chemical products.⁵

The European CMEA countries have provided or are providing assistance, among others, for the development of a petroleum refining industry in Colombia, Egypt, Ethiopia, India, Iraq, Mauritania, Syria; for the development of natural gas production in Afghanistan, Iran, Pakistan

Table 1
Fuel and mineral imports of the European CMEA countries from the developing countries, 1971-1980

Commodity group	1971		1975		1980	
	M USD	Percentage of overall fuel & mineral imp.	M USD	Percentage of overall fuel & mineral imp.	M USD	Percentage of overall fuel & mineral imp.
Crude fertilizers and minerals (SITC 27)	47	14.5	271	27.4	256	12.6
Metalliferous ores and metal scrap (STIC 28)	163	22.5	327	21.0	577	27.7
Mineral fuels and related materials (SITC 3)	140	7.4	1 686	22.5	4 507	22.6
Non-ferrous metals (STIC 68)	13	1.8	84	5.9	281	10.6
Total fuel and mineral imports from developing countries	363	9.9	2 368	20.7	5 621	21.1

Sources:

Monthly Bulletin of Statistics, May 1977, United Nations, New York, 1977,
Monthly Bulletin of Statistics, May 1982, United Nations, New York, 1982.

etc.; for the development of phosphate mining in Iraq, Morocco; for the mining of iron ore in Afghanistan and India, etc.; for the development of bauxite mining and the aluminium industry in Algeria, Costa Rica, Egypt, Guinea, Guinea-Bissau, Indonesia, etc.; for the mining and refining of copper, lead, zinc and other non-ferrous metals in Afghanistan, Algeria, Congo, Mali, India, Somalia and other countries.

Compensation deals

In mining cooperation between the European CMEA countries and the developing countries, a form of cooperation on the legal-contractual basis of so-called compensation agreements is gaining increasingly wider ground. The essential feature of this form of cooperation is that the European CMEA country involved is compensated for its direct financial and technical contribution to the development of one of the mining branches in a developing country by deliveries of the product of the mineral sector in question. The large-scale compensation agreements as a rule involve the provision of credits by the European CMEA countries to the developing countries concerned. These compensation-related "target" credits as a rule, are provided for 10–15 years with 2–3 per cent interest rate and a grace period of 1–3 years.⁶ The benefits of such long-term agreements may be substantial for both parties involved: the developing country receives a technical and financial contribution to its national mining industry and, simultaneously, gains access to a stable market for its product which then provides the opportunity to repay the credits; the CMEA country in its turn acquires a reliable, stable source of supply against products and services largely produced by its own domestic industry.

The Soviet Union and the "deal of the decade"

Up to the late 1970s, the European CMEA countries have contracted a number of compensation deals with the devel-

oping countries. Prominent among the compensation deals in both size and importance is the Soviet-Moroccan phosphate agreement, signed in March 1978, often referred to as the "deal of the decade". The development and exploitation of the rock phosphate deposit of *Meskala* requires financing to the tune of some 2 billion USD. By the terms of the agreement, the Soviet Union extends to Morocco a long-term credit on easy terms; 3.5 per cent interest, a repayment period of 17 years after a grace period of 5 years. The Soviet Union as the prime contractor is to construct an open-cast rock phosphate mine at *Meskala* with the attached transportation infrastructure, including harbour facilities on the Atlantic seaboard, and will also contribute to the expansion of a mine already in operation. In procuring the machinery and equipment for the mine, *purchases from Soviet sources are not stipulated*: they can be ordered also from third countries against the Soviet credit facility, provided they are more competitive or if the Soviet offer is incompatible with Moroccan standards or conditions. The agreement is to run for 30 years, over which period Mo-

rocco will export phosphate rock, phosphate fertilizer and phosphoric acid to the Soviet Union, partly under separate long-term supply agreements. Once fully on stream, phosphate deliveries to the USSR will amount to 10 million tons per year by 1990. The build up to this level is expected to start in the mid-1980s when the *Meskala* first stage enters production. The USSR has contracted to take 2 million tons initially, rising to 10 million tons. The Soviet Union will pay for any Moroccan phosphate deliveries over and above the quantity supplied in debt repayment by deliveries to Morocco of crude oil, timber, potash and nitrogenous fertilizer. The Soviet Union will have *no ownership share* in the project.

This agreement is the largest-scale cooperation project of the Soviet Union in the Third World. It is a particularly striking example of the realization of mutual benefits, as it helps to substantially expand the export capabilities of Morocco for a reliable market and to greatly reduce the phosphate supply difficulties now existing within the European CMEA and to increase the Soviet fertilizer production.

Table 2

Capacities of Enterprises of Soviet-aided Projects in Developing Countries (January 1, 1981) (Mt)

	According to the agreements signed	Became operational
Coal produced	50.27	4.80
Oil processed	23.00	11.63
Pig iron	26.95	10.77
Steel	26.10	9.73
Electric stations ¹	19.37	7.37

Note:

¹ Fixed power in G W.

Source:

Ivan Kapranov, "Growing Cooperation", *Foreign Trade*, Moscow, No 6, 1981, p 8.



Guinean bauxite

It is under an analogous compensation deal that the Soviet Union participated in the development of bauxite mining in Guinea. By the terms of the agreement, concluded in 1969, the Soviet Union undertook the creation of a complete bauxite mine of 2.5 Mt per year capacity between 1970–1973, in the *Kindia* district, together with the attached 100 km long railway and shiploading infrastructure in the port of Conakry, residential settlements, etc. The Soviet Union also guarantees a permanent market for 30 years for the product by taking as the countervalue of Soviet deliveries and services, and also under a separate commercial deal, some 90 per cent of the output of the mine. 50 per cent of the output goes to repay the Soviet Credit, 40 per cent is supplied to the USSR under separate commercial agreement and 10 per cent remains at the disposal of Guinea. The Soviet Union granted 83 MSUR to Guinea with a repayment period of 12 years. The repayment, in annually equal proportions, started after one year of the first Guinean deliveries to the Soviet Union.⁷

As envisaged by the agreement, the *Kindia* mining complex started the production and deliveries to the USSR in 1974 and topped its rated capacity as early as 1976. The mine and the connected facilities have been 100 per cent Guinean government property from the very start of the project, and constitute one of the largest and most profitable public enterprises. The bauxite-mining complex in *Kindia* has become a school of local personnel for the country's young and rapidly growing mining industry. During the construction of this complex, over 2 000 citizens went through the training centre set up there to become drivers, shovelmen, welders, fitters, etc.⁸

Indian alumina project

In 1978, India signed an alumina cooperation deal, by which the Soviet Union is to prepare engineering designs for a 600–800

Kt per year alumina refinery and is to participate in the construction of the plant in *Shakhapatnam*. The Soviet Union is to supply equipment and know-how, as a countervalue of which it is to receive 300 Kt per year of alumina for several years. More recently, India has asked the Soviet Union to grant a credit of 560 M USD in return for the taking over by the Soviet side of almost the total output of the alumina plant. The credit would finance nearly the total investment cost. In early 1982 the USSR had agreed to finance 40 per cent of the planned investment expenditures and was considering the possibility of a higher Soviet share of the financing.⁹

It was under similar compensation deals that the Soviet Union contributed to the development of natural gas production and transport in Iran and Afghanistan. Iran concluded in 1966 an agreement concerning the construction of the first trans-Iranian gas trunkline. The Soviet Union extended a long-term credit to Iran, carried out geological prospecting, supplied equipment to and seconded specialists for the construction of the trunkline. Iran is to repay its debt by gas deliveries from 1970 through 1985. The largest natural gas field in Afghanistan was completely equipped with machinery and equipment

of Soviet origin and the gas trunkline linking Afghanistan with the Soviet Union was put onstream in 1970. Afghanistan repays the Soviet technical and economic assistance with deliveries of natural gas. Cooperation between the Soviet Union and Iraq in the petroleum industry looks back upon a long history. Its first aim was the joint development of the North Rumelian oilfields. The output capacity of those fields has attained 42 Mt per year. A new agreement signed in 1979 envisages contributions by the Soviet Union to the development and exploitations of some additional oilfields. By the terms of the agreement, the Soviet Union is to supply production equipment, and send specialists to Iraq, and is to take from this country some 6 Mt per year of crude in compensation.

Jordania envisages the conclusion with the Soviet Union of a contract similar to the Soviet-Moroccan phosphate agreement, involving the elaboration by the Soviet partner of the engineering designs for developing a deposit and for the construction of a processing plant, and their realization and financing by the Soviet Union against phosphate deliveries in scheduled quantities.

It was with Soviet assistance that mercury production and processing was de-

veloped in Algeria. As a compensation for the contribution, Algeria supplies mercury to the Soviet Union.

Compensation deals of other European CMEA members

Romania participates in Tunisia in the exploitation of the *Gafsa* rock phosphate deposits and in the development of the attached transportation infrastructure, against part of the phosphate produced there. Czechoslovakia, Bulgaria, Romania and Poland participate in the exploitation of the rock phosphate deposits of Egypt under compensation agreements. Under these agreements, Romania and Poland have already received deliveries of larger quantities of Egyptian rock phosphate. It is under similar cooperation agreements that Bulgaria participates in the development of the Angolan rock phosphate resource, and Romania, Poland and Bulgaria in the development of the rock phosphate deposits of Syria.

It is under compensation agreements that Czechoslovakia and Hungary participate in the development of the petroleum industry in Iraq. Romania has undertaken geological prospecting of iron and non-ferrous ores in the Atlas Range of Algeria, against Algerian iron ore deliveries.

Recently, a compensation agreement has been concluded between the German Democratic Republic and Mozambique, by the terms of which Mozambique will supply coal over a longer period to the GDR as a countervalue to the technical and economic assistance by the latter to the development of coal mining in Mozambique.

Joint ventures

Joint ventures are a closer form of cooperation than compensation agreements. In a joint venture, both the enterprise European CMEA country and the enterprise developing country have equity participation. Legally, most of these ventures have the form of joint stock companies. In the developing countries wholly-owned CMEA

country companies are rare: most of the mineral investments are in jointly-owned companies in which the socialist stake represents an equal or as in most cases a minority holding. This practice is in contrast with the ownership structure of the majority of mineral investments by advanced market economy countries in the Third World. Thus mineral investments by CMEA countries in developing countries are on the whole more accurately termed "joint ventures", than subsidiaries and the application to them of the

term "direct investment" needs corresponding qualification.¹⁰

At the end of 1978 there were 185 CMEA country companies operating in the developing countries in which companies of European CMEA countries had equity participation.¹¹ As Table 3 shows, 51 of these were engaged in the extraction and processing of raw materials including fuels. More than half of the CMEA country companies operating in the production of goods were engaged in resource development. Table 4 shows that

Table 3

Distribution of CMEA country companies in the developing countries by principal activity, end-1978

Principal activity	CMEA country							Total
	Bulgaria	Czechoslovakia	GDR	Hungary	Poland	Romania	Soviet Union	
Marketing only	4	5	0	5	4	4	0	22
Marketing and distrib.	0	0	0	0	2	1	2	5
Marketing and servic.	1	0	0	0	0	1	4	6
Manufactur. and assembly	3	9	0	14	10	7	2	45
Extraction and processing of raw materials	4	1	0	1	10	29	6	51
Financial services	1	0	0	0	1	1	4 ¹	7
Transport. services	2	0	0	4	3	1	4	14
Technical services	2	2	0	6	2	5	0	17
Consumer services	1	0	0	0	0	0	0	1
Unknown	3	7	1	1	2	0	3	17
Total	21	24	1	31	34	49	25	185

Note:

¹ Includes two branch offices of Moscow Narodny Bank located in Lebanon and Singapore.

Source:

Carl H McMillan, "Growth of External Investments by the Comecon Countries", *The World Economy*, No 3, 1979, p 369.

at the end of 1978 resource developments accounted for 64 per cent of the total invested capital of the CMEA country enterprises and 92 per cent of the estimated fixed assets of these companies. This reveals that participation in resource-development projects, providing access to raw materials in return for CMEA industrial technology, have been a major objective for CMEA country companies. The rather resource development-oriented nature of CMEA country investments in the Third World is in sharp contrast with CMEA investments in the advanced market-economy countries where the primary objective of the CMEA enterprises is to promote exports to these markets. Thus the principal activity of 70 per cent of CMEA country companies in the OECD countries is marketing.¹²

As implied by Table 3, the reliance of the European CMEA countries on joint equity ventures in the mining and mineral processing sector of the Third World is characterized by important inter-country differences. Most active in the establish-

ment of jointly-owned resource companies is Romania, at the end of 1978 29 out of 49 joint-venture companies were in the raw materials extraction and processing sector. In the joint business ventures of Hungary and Czechoslovakia investment into minerals extraction and processing is insignificant. Poland, the Soviet Union and Bulgaria take up intermediate positions: 20 to 30 per cent of the joint venture companies that they have created in developing countries are in the minerals sector. The German Democratic Republic is generally inactive in the creation of joint ventures in the developing countries but not in the OECD areas.

Experience gained in the creation and operation of joint companies is not assessed uniformly by all European CMEA member countries. One of the reasons for this is the differences in risk-taking propensity between the individual countries. Several European CMEA countries regard investment in minerals extraction and processing in the developing countries as too high a risk. Those countries organical-

ly embedded into the raw materials cooperation within the CMEA perceive less of a need for extensive raw materials ventures outside the community. The individual members of the European CMEA countries differ also as to domestic mining experience, scientific-technological background and mining equipment manufacturing capabilities, which can be used as inputs in developing country investments.

Romanian joint ventures

Romania's vigorous entrepreneurial activity in the developing countries refutes the rather widespread view that a country with a limited domestic economic potential cannot pursue a comparatively large investment activity abroad. In view of the favourable experience so far, in the late 1970s, it has been envisaged in Romania, in the interest of expanding minerals supplies, to assign a greater importance to mining investment in the developing countries.

In the minerals-related enterprises created with Romanian participation in the developing countries, Romanian equity participation varies from 10 to 49 per cent as a rule. The major part of the Romanian contribution is in the form of deliveries of machinery and equipment and various scientific-technical services, a minor part is in the form of convertible currency contributions. In Peru, the Romanian company *Geomin* and the Peruvian company *Mineroperu* created the joint venture company *Antamina* for the purpose of surveying and extracting some of Peru's copper and zinc reserves. The equity share of the Romanian partner is 49 per cent. The Romanian side prepares plans, project documentation and engineering designs, carries out geological exploration, provides technical assistance and delivers mining machinery and equipment as its contribution to the joint venture. In Burundi, Romania founded in 1977 the joint company *Somiburom* with a view to prospecting for and extracting

Table 4
Estimated values of invested capital and fixed assets of CMEA companies in the developing countries, end-1978 (M USD)

Principal activity	Invested capital	Fixed assets
Marketing	10.8	29.7
Manufacturing	36.0	202.5
Resource development	172.8	3 576.4
Financial services ¹	13.2	0.9
Transport services	28.8	62.0
Other services	8.8	30.8
Total	270.4	3 902.3

Note:

¹ Does not include capital or assets of the branches of the Moscow Narodny Bank in Beirut and Singapore.

Source:

Carl H McMillan, *op cit*, p 371.

non-ferrous ores. In Kenya, the Romanian company Geomin founded in 1976 a joint company named *Kenya Mining Industries*, whose brief is the development of lead, zinc and silver production in the African country. In Tanzania, a Romanian-Tanzanian joint venture named Besaminco discovered a number of non-ferrous ore deposits on the Indian Ocean seaboard and participates in the extraction and utilization of heavy-mineral sands. A joint company *Scaromines* is engaged in the prospection, production and processing of gold, diamonds and gemstones in the Central African Republic. The Romanian-Zambian company *Mokambo* is extracting copper in Zambia. In the Malagasy Republic, Romania in 1978 created a joint company with a view to extracting the iron ore reserve of that country. Romania has a 10 per cent share in the subscribed capital of the joint venture. In the Belinga iron ore mine, under construction in Gabon, Romania acquired a five per cent equity participation. The Romanian company Geomin created a joint company with the Syrian company Gecophan with a view to a joint exploitation of the rock phosphate deposits of Khneifiss. Recently, a Romanian-Algerian joint venture was created in Algeria, for the purpose of developing new oilfields.

Long-term supply agreements

In the last two decades, the importance of international mineral commodity trade under long-term supply agreements has increased substantially in the world economy. This type of cooperation, which may cover from 10 to 20 and even 30 years, may take a variety of forms. The concrete understanding between the partners may involve anything from a straight commercial deal through barter-like countertrade to forms which include also credit arrangements and technical cooperation between the partners. These contracts provide a far greater stability (security) to both partners than sales and purchases on the free market, and permit the importing

partner to procure minerals on terms less risky than direct investment abroad. Long-term supply agreements are apt to forge comparatively close ties between the exporting and the importing partner, and are apt to substantially restrict and even to exclude the role of middlemen.

In minerals cooperation between the European CMEA countries and the developing countries long-term supply agreements are acquiring a growing importance. In concrete economic practice, various forms of such agreements are encountered. Between Poland and Brazil, fairly comprehensive long-term barter-type agreements are in effect, by the terms of which Poland, among other things, supplies coking coal to Brazil against Brazilian iron ore deliveries. In 1978, Poland concluded an agreement with the Moroccan Office Chérifien des Phosphates, by which Poland receives 500 Kt per year of rock phosphate from Morocco against deliveries of a sulphuric acid plant. By the terms of a Polish-Tunisian phosphate agreement, Poland is to receive 300 Kt per year of rock phosphate against deliveries of a complete industrial plant. In 1978 Poland concluded a long-term oil supply agreement with Libya, under which Libya from 1979 on pays in scheduled quantities of oil for services in building construction and contributions to power station construction extended by the Polish party. In 1976, Poland concluded an agreement worth 40 M USD with Mexico, by the terms of which Mexico supplies Poland with crude oil and liquefied natural gas against coal mining machinery, equipment and know-how. Brazil and Romania concluded a long-term iron ore supply agreement for the period 1975–1985. Under the agreement, Romania is to receive a total quantity of 25 Mt of iron ore from Brazil against deliveries of metallurgical equipment.

The long-term minerals supply agreements between the European CMEA countries and the developing countries often involve credit deals by the terms of which the CMEA country involved extends com-

mercial credits to the developing country or provides a variety of technical services on credit. Czechoslovakia extended a credit facility of 50 M USD to Morocco, under which it expands its deliveries of machinery and equipment to Morocco and receives mainly rock phosphate in countervalue. Bulgaria extended a credit of some 35 M USD towards geological prospecting of phosphate deposits in Tunisia, their extraction and the construction of a concentrator. Part of the Bulgarian credit was financed by the International Investment Bank of the CMEA. The credit is repaid by Tunisia by means of long-term phosphate supplies. Romania in 1965 signed a ten-year petroleum supply agreement with Iran, worth 100 M USD, involving payments in Iranian petroleum for oil industry equipment supplied on credit by Romania. Czechoslovakia in the late 1960s concluded a credit agreement worth 200 M USD with Iran, by which Iran was to pay by deliveries of 15 to 20 Mt of crude petroleum for Czechoslovak supplies of industrial equipment and complete plants. Under a credit agreement concluded between Bulgaria and Iran, Bulgaria is paid largely in petroleum for deliveries of light manufacturing and food industry equipment. By the terms of a bauxite cooperation agreement between the GDR and Guyana, the GDR supplies the state bauxite mining company of Guyana with machinery and equipment; in exchange, the GDR is to receive 30 Kt per year of bauxite from 1979 on, a quantity that may be increased. It is under long-term supply agreements combined with credit cooperation that the Soviet Union participates in the development of iron ore, non-ferrous ore and mercury mining in Algeria and of tin mining in Bolivia. The GDR, Hungary and Czechoslovakia participate in the development of non-ferrous ore mining in Peru under long-term supply agreements.

Multilateral cooperation

Multilateral cooperation in the minerals sector must be regarded as the least devel-

oped in the relations of the European CMEA countries with the developing countries. Whereas the CMEA member countries among them are organizing their cooperation in the fuels and minerals sector under the signs of ever deeper integration and growing multilaterality, economic and technical assistance to the development of mining in the developing countries goes on in an essentially uncoordinated fashion, although the large amounts of capital required as a rule by mining projects, the need to solve complicated technical problems and to spread the economic and political risk, if any, would make it both reasonable and desirable to unite the efforts of the European CMEA countries with a view to a more multilateral approach.

Experience so far has shown that many a developing country will offer opportunities of cooperation in the extraction and utilization of such minerals as are sought for also by the European CMEA countries. In a large number of cases, however, these offers are not taken up; no ventures are created in the sequel, mostly for reasons of organization and financing. There often arise problems of financing which remain unsolved only because the finance required exceeds the capabilities and the risk-taking propensity of any single interested European CMEA country.

In one form of multilateral cooperation, a company of one of the European CMEA countries participates in mineral sector development in one of the developing countries, in cooperation with companies of developed market-economy and/or developing countries. In 1979, a tripartite cooperation agreement was concluded between the Polish company *Polimex-Cekop*, the Japanese companies *Marubeni* and *Hitachi*, and the Algerian company *Sonatrach* concerning the construction of two phosphate fertilizer factories in Algeria. Under the agreement, the Polish and the Japanese companies are to construct the factories together, the Japanese party is to deliver the phosphoric acid plant

equipment. The Japanese Export-Import Bank guaranteed a credit of 300 M USD towards the venture. The output of the two factory complexes, to come on stream in 1982, will satisfy Algerian demand for phosphate fertilizer, and even produce a substantial quantity of processed phosphate for export. *Czechoslovakia* concluded an agreement with *Iraq* concerning the construction of a petroleum refinery of 3.5 Mt per year capacity, together with the pipeline network required. In 1979, the *Siemens* company of the FRG was co-opted into this deal as a supplier of electric engineering goods. Romania is a member of an international consortium, including numerous companies of developed market-economy countries, formed to prospect and extract the nickel resource of Burundi.

PROSPECTS FOR EAST-SOUTH COOPERATION

Factors affecting cooperation

The disturbances in the fuels and minerals sector, emanating from the capitalist world economy in the 1970s, above all from the price explosion, have not left the European CMEA countries unaffected. They had an immediate and direct influence on intra-CMEA trade and the economies of the European CMEA countries through those countries' imports of fuels and minerals from the non-socialist markets. They had an indirect and somewhat retarded influence through their effects upon certain elements of intra-CMEA cooperation in the minerals sector, especially upon the pricing system. It would, however, be wrong to conclude that the current fuels and minerals-related problems of the European CMEA countries are due exclusively to these external influences. These have in fact merely grafted themselves onto prior problems of a regional system of fuels and minerals supply in which certain longer-term disharmonies and tensions were to be perceived even prior to the price explosion.¹³

Furthermore, the surges in the world

The signing of the Soviet-Moroccan trade agreement of March 1978. (Top).

Polish coal ready for export at Gorny Slask. (Below left).

Advertisement by the Bulgarian state company Bulgargeomin, published in the periodical "Afrique-Asie".

market prices of fuels and certain minerals and metals found the European CMEA countries in a situation in which they were compelled to import larger quantities of fuels and minerals, as the scope for expanding their imports from the other European CMEA countries had become somewhat constrained. This statement holds especially for petroleum imports from the Soviet Union. This situation elicited a variety of fuels and minerals policy responses from the European CMEA countries.

Expanded domestic mineral base

An expansion at accelerated rates of the domestic fuels and minerals bases became a clearly stated policy target. It must, however, be perceived that in none of the European CMEA countries did the priority assigned to domestic fuel and mineral resource development lead to a general, across-the-board reduction in the dependence on external sources of fuels and minerals: it merely slows the further increase of their import dependence in regard of certain commodities. Except for the Soviet Union, dependence on imported energy and fuels increases in every European CMEA country. Poland, the only net exporter of energy of the group outside the Soviet Union, will also become a net importer according to its long-term plans. One estimate states that the aggregate energy self-sufficiency of the CMEA Six (the European CMEA countries with the Soviet Union excluded) will decline from 70 per cent in 1975 to 50 per cent in 1990.¹⁴ In several of the socialist countries, the expansion of domestic fuels and minerals production is limited by inadequate or incomplete domestic fuels and/or minerals reserves, as well as by the extreme capital intensity and high cost of incremental mining investment.

Reduction of growth of demand

The large rises in the import prices of fuels and minerals and the overall hardening of the terms of purchases within the



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Activités déployées à l'étranger : recherches géologiques complexes, engineering et travaux hydrogéologiques, projets et travaux de construction minière, extraction, enrichissement, et réalisation de la production obtenue, assistance technique, formation de cadres dans les domaines concernés par ces activités.

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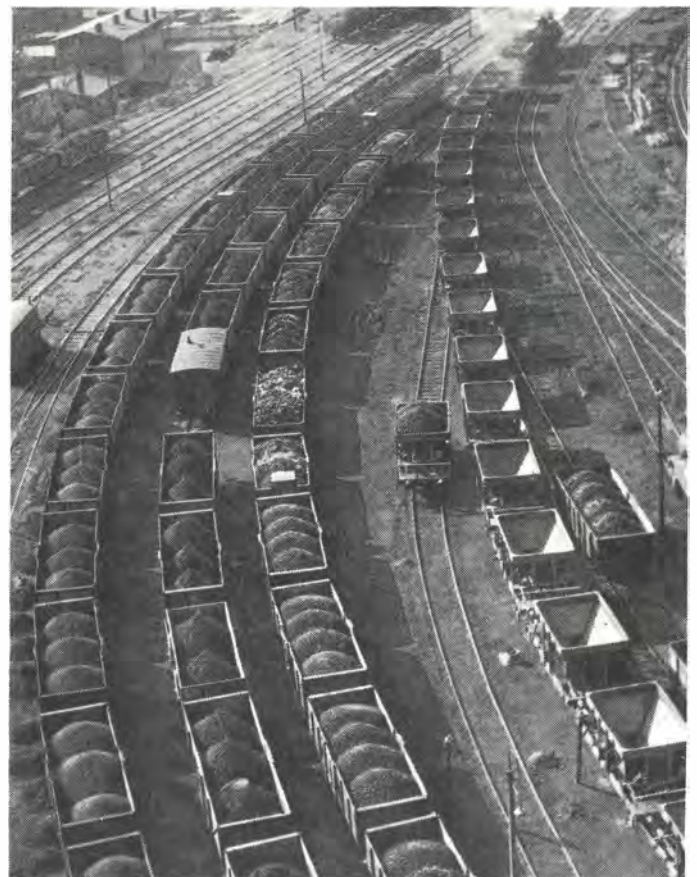
BULGARGEOMIN - coopération avec tous les instituts de recherches scientifiques géologiques et minières en Bulgarie, avec les scientifiques de l'Académie des Sciences en Bulgarie, l'Institut supérieur des mines et de géologie, la commission d'Etat des ressources et autres. Utilisation des laboratoires de tous ces établissements.

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CMEA have compelled the member countries to pay much more attention than hitherto to the demand side of the fuels and minerals equation with a view to reducing the rate of growth of demand, in contrast to the one-sided supply-oriented approach of earlier times. The anticipated volume of raw materials and energy imports from the developing countries will depend to a significant extent on the success of raw materials and energy policy in holding down the rate of increase in consumption and on the growth rate of the CMEA economies. Given the current situation in the majority of the European CMEA-countries (industrial structure, level of technological development, management system, etc.), a persistent and significant reduction of the inputs of energy and mineral commodities per unit of national income, sufficient to offset the relatively slower expansion of intra-CMEA supplies, looks improbable. However, if the policy efforts directed at moderating the rate of increase in demand – with appropriate structural, technological and management system changes – prove successful, the CMEA countries will need to import a relatively smaller volume of raw materials and energy from the developing countries. The comparatively substantial slowdown in the economic growth rate of the CMEA countries will also act in this direction in the eighties. The demand for energy and mineral commodities will continue to grow comparatively rapidly in the European CMEA countries, faster than in the world at large.

Possibilities of mineral supplies from CMEA sources

The energy and minerals situation within the European CMEA had become more complicated by the early 1980s. The costs to the net importers of their purchases of these commodities from the other CMEA member countries had greatly increased, and it had become more difficult to expand imports within the traditional framework of trade arrangements. Maintaining basic fuels and minerals supplies at cur-

rent levels faces harder conditions after 1980, including compensation by "hard" commodities (goods readily marketable on the world market) and the increasingly "hardening" conditions of ensuring deliveries of any incremental amounts. The Soviet Union as the main supplier of energy, fuels and minerals to the other European CMEA countries perceives a capital availability (internal accumulation) limit as the principal obstacle to expanding its deliveries of those commodities, and makes the expansion of its exports contingent – within limits – upon the removal or mitigation of this obstacle. The Soviet Union accordingly requests the other member countries to help solve its investment problems connected with an export-orientated expansion of its mining capabilities.

Our individual commodity-based case studies¹⁵ project further difficulties in raw-material and energy imports from CMEA sources until 2000. The general CMEA-level shortage of these commodities will further increase, and they will become even harder commodities. The quantitative limits to imports from CMEA sources will make themselves felt more vigorously than before, the cost advantages of these imports relative to non-socialist imports and to the development of domestic mining will, in general, substantially diminish, and in certain cases even discontinue.¹⁶ The increasing difficulties of CMEA-based imports are basically connected with the specific development problems of Soviet mineral mining and with the inadequacies of CMEA mineral co-operation.

Fall in growth rate of Soviet exports

The growth rates of several branches of Soviet extractive industry are likely to diminish during the period until 2000, which in turn will, in most cases, constrain the expansion rate of exports, too. For two opposite cases, the oil and natural gas, see Tables 5 and 6. The fall in the growth rate of Soviet raw-material and

energy exports to CMEA countries is due to the following major factors:

- The shift to Trans-Ural regions of the centres of production of the basic sectors of the Soviet extractive industry will speed up in the period under review, with a steep rise in marginal production costs. This will require an immense need for development capital, which the country, relying on own resources at a time of relatively moderate increase in national income, can hardly be exported to meet. Reliance on foreign loans may be substantial in relation to several developed market-economy countries, but in relation to the other CMEA countries, especially in a situation when the intra-CMEA terms of trade will presumably change in the future in favour of the Soviet Union and, consequently, a substantial need for consolidation credits will arise in the net resource importing countries, may hardly mitigate, to any appreciable extent, the accumulation burdens of the Soviet Union. As a result, the export-oriented expansion of Soviet mineral mining is likely to encounter the constraint of limited development capital in the period under review.
- In certain cases, e.g. petroleum, the expansion of exports is also limited by reserve availability problems.
- The technological problems of mineral mining confronting more and more difficult geological and climatic circumstances.
- Increasing bottlenecks in transporting raw materials and energy owing to the shift towards east of the geographical centre of extraction.
- The Soviet Union – in most cases – is likely to maintain in its resource exports the proportions established in the 1970s between the Eastern European CMEA countries and the developed market-economy countries, and over the long term will probably not expand its exports to CMEA countries to the detriment of its non-socialist exports. Parallell with a shift towards Eastern regions of the extractive, and partly of the manufacturing industry, an upswing is expected in the "Eastern" trade of the Soviet Union, that is, a dy-

dynamic expansion of its raw-material and energy exports to Japan, South-East Asia and possibly North America. This may influence the country's export capabilities *vis-a-vis* the European countries and even

the internal supply in the European part of the country.

• In view of the falling growth rate of raw material and energy production, the trade-off between preferring exports and

satisfying the relatively dynamically expanding domestic needs will probably be even more pronounced. In an economy with high specific raw material and energy consumption, the artificial reduction of (or the costly substitution for) domestic use in the interest of exports may involve serious growth-impeding effects. Hence, the country can, in the years ahead, probably give priority to exports only at the expense of domestic economic sacrifices greater than those experienced in the past. Therefore, export priority is likely to subside in areas where the above problems appear to be most pronounced.

• A deepening of integration in the extractive industry is unlikely to take place within the CMEA in the period under review to such an extent that it could make intra-CMEA resource flows significantly more dynamic. The implementation of a long term raw material and energy target program seems to be constrained by insufficient financial resources for joint co-operation projects. A massive reliance on non-CMEA financial resources would result in an inadmissibly large increase in indebtedness, and therefore this alternative may be excluded. In addition, the energy target programme is nuclear power-centered and did not envisage any major co-operation in the satisfaction of the demand for petroleum and natural gas.

Table 5

A projected development of Soviet oil production consumption and exports (Mt)

	1973	1980	1990 ¹
Production	432	602	645
Consumption	328	443	513
Exports	117	160	132
Exports to Eastern Europe ²	55	70	80
	(47 %)	(44 %)	(61 %)
Exports to Western Europe ²	48	66	25
	(41 %)	(41 %)	(19 %)

Notes:

¹ Estimate of the secretariat of Economic Commission for Europe.

² Figures in brackets represent share in total exports.

Source:

The Energy Economy of Europe and North America.

Prospects for 1990, Economic Bulletin for Europe, The Journal of the United Nations Economic Commission for Europe, June 1981, Pergamon Press, Oxford, p 233.

Table 6

A projected development of Soviet natural gas production, consumption and exports (EJ = 10¹⁸ joule)

	1973	1980	1990 ¹
Production	8.3	15.3	26.4
Consumption	8.5	13.7	22.2
Exports	0.3	1.8	4.5
Exports to Eastern Europe ²	0.2	0.8	1.6
	(67 %)	(44 %)	(36 %)
Exports to Western Europe ²	0.1	1.0	2.9
	(33 %)	(56 %)	(64 %)

Notes:

¹ Estimate of the secretariat of Economic Commission for Europe.

² Figures in brackets represent share in total exports.

Source:

The Energy Economy of Europe and North America, op cit, p 167.

Possibilities of resource supplies from developing countries

From what has been discussed in the previous section one may draw that conclusion that the faster the increase in the supply costs of raw materials and energy imported from CMEA sources, *ceteris paribus*, the higher the relative profitability of imports from alternative sources. Our projections indicate that in the case of several major fuels and minerals a rise in the share of non-socialist countries (mainly developing countries) in meeting of East European import needs would become inevitable in the period until 2000. This applies to petroleum, natural gas,

iron ore, phosphate rock and coal.¹⁷ The forecast for CMEA imports of raw materials and energy from developing countries in 1990 has been prepared in two variants:

- Assuming that the efforts for demand management and improved conservation performance will not produce the desired results.
- Assuming that the efforts to moderate the increase in demand will prove successful, the growth rate of raw materials and energy consumption will slow down considerably and there will be a marked improvement in specific input use.

The need and means for improving the mechanisms of East-South cooperation

The need for a certain degree of extroversion in the fuels and minerals supplies of the European CMEA countries requires a broadening of scope and a modernization of the mechanism of cooperation in the raw materials sector. In most of the European CMEA countries, however, a great deal of incertitude still prevails concerning the ways and means of fuels and minerals procurement from the developing countries.

Long-term supply deals

If the mineral imports is to grow substantially as expected, then one-off, short-term commercial deals will prove less and less suitable for handling the increased turnover. The aim being to trade quantities that cannot be regarded as marginal any more, short-term straight commercial deals would not only hamper import purchase at times, in function of the market situation prevailing, but the CMEA countries in the aggregate would thus come to exert rather a strong market-modifying influence, amplifying price fluctuations strong enough as it is on world commodity markets.

Every essential factor militates for the European CMEA countries to organize their procurement of fuels and minerals

from the developing countries on a stable long-term basis to the maximum possible extent. Given the fluctuations of the fuels and minerals markets, this type of cooperation may provide adequate economic security to both the buyer and the seller. This approach necessitates the establishing of closer ties between importers and exporters. In this respect, it is indicated to build upon the favourable experience accumulated in several European CMEA countries and developing countries in the course of implementing compensation deals, long-term supply arrangements and joint ventures.

Cooperation in production and marketing

Fuels and minerals contacts between the European CMEA countries on the one hand and the developing countries on the other must extend to a much greater degree than heretofore to direct cooperation in technology, production, processing and marketing. It is necessary to rely, more broadly than heretofore, upon such closer forms of cooperation in production as compensation deals, joint ventures, international consortia, service contracts, etc.

Over and above creating long-term foundations for raw materials supplies, the more sophisticated forms of cooperation in production tend to prove beneficial to both parties, especially in those cases where the project constituting the object of cooperation is capable to produce a commodity at a total cost lower than the world market price. Whether this is in fact possible depends, to a not insignificant extent, on how far the economic management mechanism of the developing country and a number of other features of its public sector permit the organization of joint production under the sign of maximum rationality. Experience has revealed that the weaknesses of the management mechanism within the state sectors of the developing countries may occasionally hamper the normal running of cooperation ventures involving one or

more CMEA partners. A more steadfast and rational management order in the state sector would make direct production cooperation in the minerals and fuels sector with the public companies of the developed countries more attractive to the enterprises of the European CMEA countries.

Obstacles to East-South cooperation

CMEA trade organizations

Difficulties might arise on the side of the European CMEA countries, too. The companies of the CMEA countries are usually geared to the internal economic life of those countries, operating under a set of premises which very often do not regard risk as an essential element in business calculations. The predominant type of economic organization in the CMEA countries is introverted, with no great ability or willingness for direct ventures on foreign markets, whereas the operation of the specialized foreign trade organizations is largely confined to straight traditional commercial deals of buying and selling. There are therefore comparatively few economic organizations in the CMEA countries which would be capable of purposeful and efficient action over and above the sphere of straight commercial deals, on the theatre of the non-socialist part of the world economy.¹⁸

In view of the above, it appears necessary to set up mechanisms and organizations, including authorization to extend credit and guarantees which would permit the individual CMEA countries' enterprises to undertake in the mineral sector of the developing countries business ventures requiring greater quantities of finance and would involve a greater risk than is usual within the socialist economies.

Transnational monopolies control of deposits

In the area of cooperation in the minerals and fuels sector between the developing

and the European CMEA countries, the obstacle is sometimes encountered that the influential transnational monopolies based in the developed market-economy countries – through a variety of contractual arrangements – keep under their control the richest and cheapest-to-exploit mineral deposits of many a developing country. The creation of a more effective *de facto* control by the developing countries, with due attention to economic rationale, over their natural resources would create a more solid foundation on which to base the cooperation of the two groups of countries in the fuels and minerals sector. Certainly, the CMEA country companies should take into account the fact that in the mineral mining of developing countries there is a sharp competition by the Western transnational mining corporations commanding firm positions and substantial experiences in the key branches of the extractive industry in most developing countries.

Bilateral nature of CMEA trade

One of the grave obstacles to intensifying resource cooperation between the developing and the European CMEA countries is the predominantly bilateral nature of relations. There is the contradiction that, whereas the European CMEA countries between them have succeeded in setting up a sophisticated integration, their approach to cooperation with third countries has remained basically unintegrated economically, even though mining would be a sector pre-eminently suited for multilateral arrangements. International mining ventures usually have a large number of participants, as a result of the desire to spread the financing burdens, which are quite heavy as a rule, as well as the economic and political risks.

As pointed out above, experience has shown that numerous joint mining projects of European CMEA countries with developing countries had failed to materialize because, in the majority of cases, the CMEA partner acting in isolation felt the

financing burden and the risk to be excessive. A more coordinated approach by the CMEA countries could doubtless infuse more momentum into mining cooperation between the two groups of countries. It would, on the one hand, increase the propensity of the individual countries to participate in such ventures by spreading the burdens of risk and finance. On the other hand, more efficient, many-sided and larger-volume technical and economic assistance made possible by a joining of forces among several CMEA countries would enhance also the interestedness of the developing-country partners.

Forms for closer cooperation

The participation under the sign of cooperation of more than one interested CMEA country in the extraction and processing of the mineral resources of a developing country and in augmenting its mineral export capabilities could be realized in a variety of forms:

- The performance of joint geological prospecting.
- The extension of project-tied credits against proportionate fuels and/or minerals supplies.
- Joint construction of mining and processing facilities.
- The branching out of some of the existing international economic organisations and operative entities into mining and minerals processing in the developing countries.
- The creation of new international socialist joint companies empowered to embark upon joint ventures with the state-owned mining companies of the developing countries.
- The creation of a centre of information and coordination to provide insights into the aims, projects and opportunities of cooperation.

It is a task of the CMEA countries to set up the right conditions of interestedness, organization and financing indispensable for the wide-ranging application of this type of multilateral cooperation.

An appropriate set of conditions should be created in which, in contrast to the past, no multilateral venture would be doomed to failure on account of the low level of sophistication of the interests, organisations and credit facilities involved. In this connection an important problem must be tackled, namely that, in the case of cooperative ventures the individual CMEA member countries should exhibit a greater willingness and readiness to undertake a prime contracting role. The *International Investment Bank of the CMEA* would have to play a role incomparably greater and more efficacious than its present one in financing and guaranteeing mining ventures entered on by consortia of several CMEA countries in a developing country. The sums, rather limited at present, available in a Special Fund of the Investment Bank created for the purpose of financing cooperation with the developing countries should be expanded in proportion with the growing capital requirements of cooperation, and used more freely for granting credits to the capital-intensive mining ventures. In this way, a situation could gradually be created where, above a certain limit of finance, the extension of credits and guarantees to joint mining ventures by several CMEA countries in a developing country would automatically become the task of the Investment Bank.

Establishing manufacturing cooperation

In identifying the long-term prospects of mining cooperation between the two country groups, it is indicated to respect to the maximum possible extent the vigorous striving of the developing countries to export increasing quantities of the minerals produced in their territory in processed form. In a substantial number of developing countries, industrialization can unfold most successfully and in the most natural way by relying on a domestic raw materials base. Therefore, the developing countries will increasingly give priority to the export of semi-finished

products as against the direct export of primary commodities, therefore it may appear, indispensable, from the point of view of ensuring raw-material supplies, to join in the establishment of appropriate manufacturing activities in a suitable form of co-operation. Intentions to cooperate in the mining sector alone will in the future, even more than at present, encounter the reluctance of the developing countries. Avoiding the conflicts of interest that might emerge in this context is in the common interest of both the developing and the CMEA countries.

Even though a substantial share of the economic and technical assistance by the European CMEA countries goes into the development of fuels and minerals processing industries in the developing countries, the share of imports of semi-finished goods from the developing countries into the European CMEA countries is marginal. In 1980 only 1.2 per cent in value terms of the total iron and steel imports of the European CMEA countries originated from the Third World (in 1970 it was also 1.2 per cent); in contrast, the share of the developed market-economy countries was rather high at 55.6 per cent (in 1970, 30.7 per cent). This wide gap is but partly explained by the differences in quality and product range between these two sources of imports. The share of products originating from the developing countries was relatively low (10.6 per cent) also in the European CMEA countries' overall imports of non-ferrous metals, although the picture is distorted somewhat there by the role of intermediaries. In this case, however, the share of the Third World increased from 4.4 per cent in 1970. The developing countries' share is extremely low also in the imports of chemicals (2.5 per cent in 1970 and 1.4 per cent in 1980) as the developed market economies dominate the import picture (45.2 per cent in 1970 and 63.6 per cent in 1980).¹⁹

It is desirable and possible to modify in future these proportions in favour of the developing countries. This requires

the setting up and the massive development of a complex vertically-oriented system of cooperation which would contribute to the satisfaction of the European CMEA countries' growing needs in materials and semis in such a way as to promote at the same time also the complex development of minerals processing industries in the developing countries involved, thereby enhancing the motivation of those countries in resource cooperation. Complex programmes of cooperation covering the entire chain from mining to processing and manufacturing can be built on a safe marketing base if part of the output is earmarked for satisfying the demand of the CMEA countries. The success and efficiency of the complex vertically-oriented programmes depends essentially on the multilateral participation of the CMEA countries and on their cooperation in the realization of these programmes. Under such programmes, it would be possible to organize trilateral cooperation schemes based on participation by one or more economic organization of the developing, developed market-economy and CMEA countries. In such a way, the extremely low percentage (less than 3 per cent) of mining ventures among the current number of trilateral cooperation projects could be increased.²⁰ Experience has shown that the scope of optimization inherent in the most reasonable combination of the inputs of the cooperating partners (labour, technology, capital, management, marketing, R and D, etc) can be exploited the most efficiently in complex and large-scale projects.

Elimination of intermediaries

A more direct cooperation in the fuel and minerals sector between the developing and the European CMEA countries would be served also by the confinement or elimination of intermediaries, who in many cases play an important role even today. Even though in recent years indirect trade flows through intermediaries have exhibited a declining trend, imports

through middlemen may make up as much as 15 to 20 per cent of total imports, e.g. in the Latin American imports of Czechoslovakia and Hungary.²¹ Trade by intermediaries is especially extensive in non-ferrous metals (tin, copper, etc). The interests of the developing countries coincide with those of the CMEA countries in the strengthening of direct ties, in the exclusion of intermediaries. At present, intermediaries may remain in business because, in some cases, they offer more favourable terms of price and delivery than the original exporters.

The transportation issue

In the context of expanding cooperation in the fuels and minerals sector between the developing and the European CMEA countries, and of the enhanced geographic diversification of the CMEA member countries' procurement of fuels and minerals, the issue of sea and land freight handling capacities and of the portuary capabilities of both the developing and the European CMEA partners arises as a problem of increasing importance.²² A vigorous collective effort by the European CMEA countries will be needed to avoid a situation where transportation infrastructure may become a limiting factor of cooperation with the developing countries. As shown by the experience gained in numerous concrete ventures, the development of transportation infrastructure promoting both local processing and exports must be an organic constituent of every programme of cooperation in the mining sphere. The ports of the European CMEA countries which receive the raw materials from the developing countries as bulk goods are currently operating at or beyond the extreme limits of their capabilities in the majority of cases, and their technological sophistication also leaves a great deal to be desired. At present few ports within the European CMEA are equipped to handle the giant freight vessels, which would render it possible to purchase bulk goods at reasonable

cost even from the most remote sources. The same holds with certain qualifications also for the land freight capacities whose task is to haul the raw materials received at the ports to their places of consumption inland. The envisaged substantial expansion of imports of fuels and raw materials from outside the European CMEA will render inevitable a dynamic expansion and modernization of the European CMEA countries' merchant marines, ports and land transportation facilities.²³ This task makes it indispensable to unite the efforts of the interested European CMEA countries, especially on the financing side. It is to be recommended to involve in the financment of transport infrastructure development those developing countries which have disposable capital for investment abroad and envisage the expansion of their exports of petroleum and minerals into the CMEA countries. An example of multilateral cooperation in the field of transportation is the Adria Pipeline, jointly constructed by Yugoslavia, Hungary and Czechoslovakia, to whose financing certain petroleum-producing countries of the Middle East also contributed by granting credits.²⁴

SUMMARY AND CONCLUSIONS

The minerals and fuels situation in the European CMEA countries, taken overall, is characterized by a high degree of self-sufficiency; in fact, the CMEA group as a whole is a net exporter of many important fuels and minerals (crude petroleum, natural gas, coal, copper, zinc, nickel, potash, etc). This circumstance endows the CMEA community with a high economic security, the advantages of which become manifest especially in those periods when the commodity markets of the non-socialist world are characterized by imbalances and violent fluctuations and by a tendency towards politicization. In the 1970s, such tendencies unfolded with a vigour never experienced before on most of the commodities markets, but especially on the market of petroleum.

Over the last three decades the CMEA integration has reached the greatest intensity in the minerals and fuels sector of the member countries.

During the seventies, fuels and minerals imports from the Third World have become of increasing importance to the European CMEA nevertheless, as indicated by the fact that in 1980 more than one-fifth in value term of the total minerals and fuels imports of the European CMEA originated in the developing countries. The developing countries' share is especially significant in the case of metalliferous ores and fuels.

Over the seventies, the institutional arrangements for organizing East-South mineral development cooperation have been characterized by increasing diversity, complexity and sophistication.

Technical assistance by the socialist countries to the development of mining in the Third World countries constitutes an important element of cooperation. The European CMEA countries, which have a substantial experience and a sophisticated scientific-technical base in mining, provide in many a developing country an extensive technical assistance in the geological prospecting for natural resources and in the creation or development of the national mining industry.

In mineral development cooperation the compensation agreement has been increasingly used as an arrangement to compensate the European CMEA country for its direct financial and technical contribution to the mineral development in a developing country by resource deliveries. These long-term agreements as a rule, include the provision of credits by the CMEA country companies. Prominent among the compensation deals in Soviet-Moroccan phosphate agreement and the Soviet-Guinean bauxite scheme.

Over the last decade the CMEA countries have tended to rely increasingly on such more sophisticated forms of mineral development cooperation as the joint equity ventures. At the end of 1978 out of the 185 CMEA country joint ventures

operating in the Third World, 51 were engaged in resource development. 64 per cent of the total capital invested by the CMEA countries in joint companies in the developing countries and 92 per cent of the fixed assets of those companies were in resource development including mining and minerals processing. This reveals that CMEA investments in the developing countries are rather minerals-oriented. In the developing countries, wholly-owned CMEA country companies are very rare; most resource-related investments are in jointly-owned companies in which the CMEA stake represents an equal or minority holding. The CMEA enterprises prefer to establish joint ventures with public companies in the developing countries.

In minerals cooperation between the European CMEA countries and the developing countries long-term supply agreements acquire a growing importance. These agreements often involves granting commercial credits or providing a variety of technical services on credit by the CMEA countries to the developing countries.

Multilateral cooperation in the mineral development is the least developed form in the relations of the two groups of countries. Whereas the CMEA member countries among them are organizing their cooperation in the fuels and minerals sector under the signs of ever deeper integration and growing multilaterality, economic and technical assistance to the development of mining in the developing countries goes on in an essentially uncoordinated fashion, although the large amounts of capital required as a rule by mining projects, the need to solve complicated technical problems and to spread the economic risk would make it both reasonable and desirable to unite the efforts of the European CMEA countries with a view to a more multilateral approach.

Policies and prospects of socialist countries in East-South mineral development cooperation are significantly affected by the evolution of intra-CMEA resource si-



tuation and cooperation. Our forecasts suggest further difficulties in raw material and energy imports from CMEA sources until 2000. The general CMEA-level shortage of these commodities will further increase, and they will become even "harder" commodities. The quantitative limits to imports from CMEA sources will make themselves felt more vigorously than before, the cost advantages of these imports relative to non-socialist imports and to the development of domestic mining will, in general, substantially diminish, and in certain cases even discontinue. The increasing difficulties of CMEA imports are basically connected with the specific development problems of Soviet mineral mining and with the inadequacies of CMEA resource co-operation.

The faster the increase in the supply costs of raw materials and energy import-

ed from CMEA sources, *ceteris paribus*, the higher the relative profitability of imports from alternative sources. Our analysis concludes that the rise in the share of non-socialist countries (mainly developing countries) in meeting of East European resource import needs would become inevitable in the period until 2000. This applies to petroleum, natural gas, iron ore, phosphate rock and coal.

The relative extroversion that will become necessary in the fuels and minerals procurement of the CMEA countries will render indispensable the extension of co-operation in raw materials and the modernization of its mechanisms. It will be necessary to rely, to a greater extent than heretofore, on such closer and more direct and sophisticated forms of cooperation in production as compensation agreements, joint companies, international

consortia, joint socialist international enterprises and service agreements. Cooperation in mining demands multilateral forms more than any other sphere. It will be necessary to set up in the European CMEA countries the conditions of entrepreneurial motivation, organization and crediting that are the prerequisites of wide-ranging multilateral cooperations. In developing mineral cooperation between the two groups of countries, the striving of the developing countries to export increasing percentages of the minerals and fuels extracted on their territory in processed form must be satisfied to the greatest possible extent. This requires the setting up of a complex vertically integrated system of cooperation which can contribute to the satisfaction of the European CMEA countries' demand for resources in such a way as to promote at the same

time also the raw materials processing in the developing countries. The socialist countries should seriously consider some rational reorientation of their semi-manufactured goods imports from the developed market economies, which at present play a dominant role in the overall CMEA imports of these products, towards the developing countries. It should also be taken into account that the prospective expansion of cooperation in raw materials between the two groups of countries presupposes a substantial expansion and modernization of transportation infrastructure in both the developing and the European CMEA countries.

Notes:

¹ The European members of the CMEA are: Bulgaria, Czechoslovakia, the German Democratic Republic, Hungary, Poland, Romania and the Soviet Union.

² *Kommunist*, Moscow, 1979, No 3, p 20; *Rynki Zagraniczne*, Warsaw, 1982-06-01.

³ The countries of the European CMEA are carrying out geological prospecting and exploration in 34 developing countries. See *Trade Relations among Countries Having Different Economic and Social Systems*. Review of trends and policies in trade between countries having different economic and social systems. Report by the UNCTAD secretariat, TD/B/656, 1977-07-01, p 18.

⁴ G M Prokhorov, "Strany SEV i problemy razvivayushchikhsya stran", *Izvestiya Akademii Nauk SSSR, Seriya Ekonomicheskaya*, 1979, No 1, p 89; *Trade Relations among Countries Having Different Economic and Social Systems*, *op cit*, pp 17-18.

⁵ Ivan Kapranov, "Growing Cooperation", *Foreign Trade*, Moscow, No 6, 1981, p 2.

⁶ *Sotrudnichestvo sotsialisticheskikh i razvivayushchikhsya stran: Novii tip mezhdunarodnikh ekonomicheskikh otnoseniy*, Moscow, Nauka, 1980, p 42.

⁷ *Ibid*, pp 44-45.

⁸ Vladislav Dobiya, "Economic and Technical Cooperation between the USSR

and Guinea", *Foreign Trade*, Moscow, No 1, 1981, p 22.

⁹ *Metal Bulletin*, 1982-02-02.

¹⁰ For more details, see Carl H McMillan, "Growth of External Investments by the Comecon Countries", *The World Economy*, No 3, 1979, pp 366-367. McMillan rightly points out that the "Use of the term 'direct foreign investment' varies and sometimes includes joint equity ventures. Normally the concept is reserved for equity investments which more unambiguously entail foreign control." (p 384)

¹¹ A Soviet source refers to some 200 joint companies established by the European socialist countries (including Yugoslavia) in the Third World by the late 1970s. See O T Bogomolov, *Strany sotsializma v mezhdunarodnom razdelenii truda*, Moscow, Nauka, 1980, pp 278-279.

¹² Carl H McMillan, *op cit*, p 370.

¹³ For more details, see István Dobozi, "Problems of Raw Material Supply in Eastern Europe", *The World Economy*, January 1978, pp 205-222.

¹⁴ S Pomazanov and A Yakushin, "Razvitie integratsionnikh protsessov v energetike stran SEV", *Voprosy Ekonomiki*, Moscow, No 6, 1976, pp 75-76.

¹⁵ See István Dobozi, "World Raw Materials Markets until 2000, Implications for Eastern Europe", *Raw Materials Report*, Vol 2 No 2, pp

¹⁶ As a recent Soviet assessment has put it, "the improvement of the existing forms of cooperation (between the CMEA countries and the developing countries), and the introduction of novel forms of relations can very well lead to a situation where, even under the changed price patterns of the world market, imports of fuels and minerals from the developing countries may prove not less efficient than imports from the Soviet Union." "Sotrudnichestvo razvivayushchimisya stranami v resenii toplivno-sirevoy problemy stran SEV", in A I Zubkov (ed), *Toplivno-sirevaya problema v usloviyakh sotsialisticheskoy ekonomicheskoy integratsii*, Moscow, Nauka, 1979, p 126.

¹⁷ István Dobozi, *Raw Materials Report*, *op cit*.

¹⁸ Cf. Egon Kemenes, "Nyersanyag-kitermelés a fejlődő országokban és a KGST-országok" (Mining in the developing countries and the countries of the CMEA), *Gazdaság*, Budapest, No 3, 1972, pp 141-142.

¹⁹ *Monthly Bulletin of Statistics*, May 1982, United Nations, New York, 1982.

²⁰ According to a survey by the UNCTAD secretariat, of the 100 projects realized in the developing countries between 1965 and 1974 under tripartite agreements, 83 were in manufacturing (including metallurgy), more than 10 in electricity generation and 3 or so in mining and communications taken together. Cf *Tripartite Industrial Co-operation*, UNCTAD/SEM. 1/2, 1975-11-25.

²¹ Cf. *Trade and economic relations between Latin American countries and countries members of the Council for Mutual Economic Assistance*, Study by the UNCTAD Secretariat, TD/243/Supp 2. 1979, 04-10, Paragraph 46.

²² On the transport capacity problem in the East-South resource co-operation context for more details, see *Economic Relations between the European CMEA Countries and the Developing Countries and their Role in Development*, Institute for World Economy, Budapest, 1980, pp 99-100.

²³ Strivings in that direction are indicated, for example, by the fact that; after the Soviet Union, the other non-land-locked European CMEA countries (the GDR, Bulgaria, Poland) have also embarked upon programmes of tanker construction. Bulgaria which, at present, possesses two tankers, is engaged in co-operation in tanker construction with the GDR, Poland, France and Japan.

²⁴ An interesting deal of co-operation in haulage has recently been concluded by Bulgaria and Iran. The two countries have created a joint transportation company, 52 per cent of the subscribed capital of which has been provided by the Bulgarian and 48 per cent by the Iranian party. As an interesting feature, 30 per cent of the subscribed capital was extended by Iran in the form of petroleum deliveries, and only the remaining 18 per cent in cash. ■