

poorest countries—less than \$500-\$600 per capita income—and a ceiling on interest rates at 5 percent would be reasonable from their standpoint.

Discussion with representatives of different ministries confirmed the idea that Romania considers implementation of a New World Economic Order a key task of its foreign policy—equally important as removing the strategic war danger. “The larger and larger gap between developing countries and developed countries,” the senior government official said, “is one of the main contradictions of our epoch. If this is not solved, it will be a direct threat to humanity’s survival.”

Short of changing the existing economic order, Romania tries to soften the effects of the international financial crisis. This country plays a leading role concerning South-South

cooperation. Expansion of such trade without foreign currencies is one key strategy. “Don’t call it barter,” Alzamora’s friend in the government told us. “Barter is the term used by the IMF.” But as a matter of fact, while the Ibero-American countries are promoting this type of clearing-trade among themselves, one of the purposes of Alzamora’s trip to Bucharest was to step up barter deals between the SELA countries and Romania. Brazil, for example, has become the main soybean supplier to Romania, following the U.S. trade boycott in 1981, and Romania is delivering machine tools in return. It has sold its original tertiary recovery methods for oil wells to Brazil and Argentina. “You see,” said the official jokingly, “this is another example of our deep-level cooperation with Latin America.”

# Romania builds up its industry despite economic warfare

by Konstantin George

Gauged by any yardstick Romania’s policy of national development is quite impressive, having scored a 10.2 percent growth rate in both 1981 and 1982, with the 10 percent annual growth rate to be maintained through 1985, the end of the current Five-Year Plan. The country’s all-out industrialization policy was proclaimed by President Ceaucescu, Romania’s then newly elected leader, in 1965. Since 1965, electrical power production, the infrastructural key to establishing a heavy-industry based economy, increased from 3,258 MW to 16,090 MW in 1980—a fivefold jump. Between 1981 and 1990, a further 17,000 MW capacity will be added, thus doubling the 1980 figure. No less striking was the advance from 3.4 million tons of raw steel in 1965 to 17.3 million in 1980, and projected at 20 million by 1985—an accomplishment achieved over many obstacles, not least of which was a Soviet embargo on iron ore exports to Romania. Romanian production by 1976 was on a par with both France, which produced 23 million tons, and Britain, which produced 22 million tons.

From 1965 to the present as we shall see below, a broad scope of entirely new integrated industries was created in Romania. These include shipbuilding, aircraft, and helicopter construction, tractor and combine production on a large scale, high performance oil drilling equipment and offshore platforms, construction and earth-moving machinery, electrical machinery, and turbines and hydraulic equipment. In all these sectors, the industry is fully integrated, and nearly all critical components for each sector are also produced in

Romania. A crucial example is now Romania’s nuclear energy program, where the nation is embarked on a major effort to build reactor component plants in conjunction with bringing 10 nuclear power plants on line by the year 2000.

As the current nuclear program and ongoing great infrastructural projects, revolving around the soon-to-be-completed Danube-Black Sea Canal (see below), the most striking feature of Romania today is that growth and progress continue into the 1980s despite the international economic depression. Romania has been affected, as the heavy import cuts and austerity belt-tightening measures of the past two to three years underscore. On the energy front, Romania has an extremely low dependency on the Soviet Union, a rate of dependency that would be the envy of several NATO members. By 1985, it will have no dependency on the Russians.

## Development and national transformation

Transformation is the word that describes Romanian postwar history. In 1950, seventy-four percent of the economically active population was employed in agriculture, with only 26 percent outside of agriculture. Today the figures are exactly reversed. By 1990, only 15 percent will be in agriculture. In 1950, only 12 percent of the economically active population was in industry. Today, over 35 percent are employed in industrial production. The 1950-83 yearly average for industrial growth has been 12 percent, and the advanced composition of industry is shown by the fact that already in 1980, 35.2 percent of industry was in the machine-

building sector, a percentage which has increased since then.

As a senior official at the Ministry of Machine Building stressed, "The state policy of ours to industrialize the country is not industrialization in itself. The purpose is the development of the country, and, primarily to increase the living standard of the population. To realize this it is necessary to increase the national income and to strongly develop industry. The development of industry advances the development of other economic fields. For example, how do you double or triple agricultural production without the necessary agricultural machinery or industrially produced products, or, how do you accomplish great construction projects without an industry to produce construction machinery?"

The Central Committee Plenum of June 30, held during the stay of the *EIR* team in Romania, reaffirmed the all-out policy of national development and modernization of every sector. The following national priority projects are emphasized, all for completion by 1985:

- Completion of the 64-kilometer-long Danube-Black Sea Canal, an engineering masterpiece and infrastructural hub of national development. Inland waterway traffic will immediately double upon completion.

- Energy independence by 1985, through vast expansion of coal and lignite production, followed by a large nuclear program.

- Vast expansion of dam construction projects, with the centerpiece being the huge Iron Gate II project on the Danube on the border with Yugoslavia. These projects have the dual purpose of hydroelectric power and reservoir creation for flood control, and through hooking up into the irrigation system for drought alleviation.

- A top priority placed on a national irrigation program to double the current hectares under irrigation from 2.3 million in 1980 to 4 million in 1985.

- Tripling the production of chemical fertilizer from 1.6 million tons in 1980 to 5 million tons for 1985.

- Completing the first 660 MW nuclear plant at Cernavoda on the Danube by 1985.

### **Energy independence and going nuclear**

Romania's decision to engage in what, for a nation of 22 million, can only be termed, a monumental program, to not only install nuclear reactors between 1985 and 2000, but also to create a nuclear reactor industry, was defined by President Ceausescu in his report at the 12th Congress of the RCP, given on Nov. 19, 1979. Romania, by the 1990s, will be self-sufficient in the field of nuclear plant equipment manufacturing, in the processing of nuclear fuels, and in heavy water preparation. The plants are built on license from the Canadian CANDU type, and parts-licensing agreements were signed with U.S. and Italian firms, too. The scope of the plan is huge, with a goal of 10 plants totalling 10,000 MW by the year 2000.

The curve of expansion looks as follows: Current nuclear

capacity is zero. In 1985, the first reactor—mostly imported—is scheduled for completion at Cernavoda on the Danube. It will have a capacity of 660 MW. By 1990 there will be six such reactors with a total capacity of 3,960 MW, which will comprise 18 percent of Romania's energy output. By 2000, nuclear capacity will total 10,000 MW.

Romania's overall energy program, again emphasized at the recent Central Committee Plenum, is to achieve energy independence in 1985. This means, first and foremost, essentially eliminating dependence on imported oil. Romania will accomplish this by drastically reducing the use of oil as a fuel, so that by 1990, the near total domestic oil output will supply the feedstock requirements for the country's large petrochemical industry. Figure 1 gives the picture of the energy independence plan for the 1980s, by energy-type as a percent of total energy used.

One can note the steep percentage rise in coal-lignite before nuclear comes on line, and then, the significant percentage drop as part of the whole, as nuclear comes on line in quantity. For the short term, to achieve independence the all-out emphasis is on lignite production. As Romanian officials in several ministries stressed: "We know it [the lignite] is of poor quality, and far from an ideal solution, but our goal is to achieve energy independence in 1985, which is too early for nuclear power to take effect." Romanian lignite production has been quadrupling each decade. From 5 million tons in 1965, it reached 20 million tons in 1975, and will reach the 72 to 75 million ton range in 1985.

The only reason that Romania today has sufficient domestic oil production to feed its petrochemical industry is because Romanian built up a modern oil equipment industry, specializing in producing secondary and tertiary recovery equipment, in quality second to none. Romania is an acknowledged world leader in the export of such equipment. The marriage of this industry with the research and facilities of the shipbuilding sector developed an offshore rig production industry, whose products have been exploring for and commercially tapping oil deposits under the Black Sea.

### **No 'sunset' in the shipyards**

One striking feature of the country is that industries which in most of the OECD countries have been condemned to early death as "obstacles to a post-industrial society" are flourishing in Romania. This is not simply because "the state buys everything." The Constanza shipyard, with modern Swedish equipment supplied by ESAB and high efficiency, has competitively won contracts to supply Greek and even Japanese shipowners. Otherwise the great canal projects have created a boom in demand for new river craft, barges, and tugs.

The same "no sunset" story holds true in the vehicle industry. The canal projects have created a boom in production of all sorts of construction equipment, including various sizes of steam shovels, dump trucks, and bulldozers. Problems with export demand for certain kinds of trucks were solved by converting lines of truck production to tractor pro-

duction. Rumania exports tractors to the developing sector.

## The mechanization of agriculture

The scale of mechanization of Romanian agriculture in the postwar era, and most pronouncedly since 1965, can be seen in the following figures concerning tractor production; 1950, 23,700 tractors; 1965, 81,000; 1981, 155,000; and 1983, 160,000. Tractor production has doubled since 1965. The figures for self-propelled combines are much more dramatic: from 292 in 1965, to 44,000 in 1981 and 50,000 in 1983. The center of the Romanian agriculture machinery industry is in Brasov, a city nestled in the Carpathians, 160 kilometers north of Bucharest. Brasov is also a center for truck and helicopter production. In June, the 920,000th tractor came off the Brasov production line. One yardstick of the mechanization is the number of tractors per hectare. In 1938, it was one per 3,500 hectares. Now it is one per 60 hectares.

Romania has been unable to achieve the gains planned in agriculture in the 1980s, because of repeated droughts, each year more severe. This year's drought was the worst in 100 years, worse than the previous drought records for the 20th century, set in 1903. Despite this, Romania, unlike the Soviet Union, has not had to import any grain, and in fact Romania only imports food products that cannot be grown in Romania's climate, like citrus and tropical fruits, and feed grains for its livestock.

The commitment to mechanization is also seen in the agriculture investment figures for the 1981-85 Five-Year Plan. Regarding agricultural investments, 34 percent is slated for mechanization, 17 percent for land improvement, 31 percent for livestock, another top priority, and 15 percent for vegetable, fruit, and vineyards cultivation. To gauge the scope of the irrigation program now underway as a top national priority, the entirety of Romania's arable land under cultivation is 10 million hectares. Of that total, already 2.4 million hectares, or 24 percent are irrigated. The 1985 goal is 4 million, or 40 percent, and for 1990, 5.5 million, or 55 percent of arable land. The present geographical area of concentration in the irrigation program is in southeast Romania, on the Wallachian Plain, just west of the Dobruja.

The further modernization of agriculture is key to increasing the labor force in industry and construction. Twenty-six percent of the labor force, or 2.8 million people, now work in agriculture, of whom over half are more than 40 years old, and over half are women. These factors combine with a generally lower skill and educational level, as reflected in the fact that this 26 percent of the work force accounts for only 16 percent of the national income. By 1990, these two percentages will be more or less equal.

Romania has had an impressive city-building policy for the last 20 years, featuring a massive housing program that continues unabated today. Everywhere one goes, one sees construction activity, old neighborhoods being torn down, and blocks of new apartment buildings rising. Bucharest is ringed by new satellite cities, most built in the 1970s.

## Only the Bosphorus limits shipbuilding

by Edith Vitali

Today's world of shipbuilding is bereft of success stories, especially in the so-called advanced sector: Yards are being closed down, workers are facing mass layoffs—be it in Hamburg, New York, or Göteborg.

However, we have discovered one of the great exceptions, one inspiring example of how the shipbuilding industry can blossom if it is adequately treated as a national priority sector. On July 4, our group was the guest of Constanza's great shipyard and its director of export sales, Mr. Dumitru Muhcina. The Black Sea port Constanza, which the ancient Greeks called Tomis, and which was the asylum for the Roman poet Ovid, today handles 50 to 60 percent of Romania's exports, 40 percent of which are machine tools.

Romania has two ambitions: First, it wants to transport all sea freight to and from this country on their own ships. Second, Romania aspires to produce all components for shipbuilding domestically. On our way to the yard, we passed the rather new factory for ship engines in Constanza.

"I just love to build ships," said the director at the shipyard, while we were standing in front of several models, representing different phases in the development of the yard.

Ninety years ago, it began as two small workshops with repair facilities only. In 1938, an 8,000-ton floating dock was acquired, and in 1965, a floating dock of 15,000 tons was added. However, the two docks were utilized only for repair. A real turning point came in 1968: the beginning of actual shipbuilding. The first type was a small 1,920 dead weight ton (dwt) freighter produced for export. "We've never had any complaints from our customers," said the director proudly. In 1972, the shipyard assumed its current appearance, and in 1973—again exponential growth—a series of 55,000 dwt ships went into production. The first one was delivered in 1975 to the Romanian shipline Navrom.

In the same year, production of a 65,000 dwt bulk carrier and of a 150,000 dwt tanker started. "Our production is first of all for the domestic market," the director underlined, "but three of the 65,000 dwt type were exported to Japan, Hong Kong, and Greece. The only limit to the size of ships is the Bosphorus. If it weren't for the Bosphorus, I'd love to build even bigger ships." Right now, the fourth 150,000 dwt tanker is in production.

During a walk through the huge construction hall where large metal plates are being cut and welded into shape on