

METALS: THE LIFEBLOOD OF HUMAN CIVILISATION

The Soviet progress in metals production. In 1922, the Soviet Union put out a mere 0.3 million tons of steel and an equal amount of ferrous rolled stock. The figures, for 1983 are 153 million and 107 million tons, respectively. Until May 1932, it did not produce domestic aluminium. Today, the USSR exports titanium, which can withstand very high temperatures and pressures and is far stronger than aluminium and magnesium alloys, to many countries. Soviet non-ferrous metallurgical enterprises now produce 74 chemical elements from Mendeleev's table. In the period from 1976 to 1982, they began the production of more than 1,000 new types of products and efficient metal sections.

With Soviet technical assistance, many countries have built more than 70 ferrous metallurgical and over 100 non-ferrous metallurgical enterprises, and about 80 more are being built or designed. Developing countries receive the bulk of Soviet assistance in the field of metallurgy.

With the Soviet help, India has built such ferrous-metallurgy giants as the Bhilai and Bokharo plants with a total annual design capacity of 10.5 million tons of steel, and the Korba aluminium plant which is to produce 100,000 tons of aluminium annually, including 50,000 tons of aluminium rolled stock, pipes and other products. These plants have made India self-sufficient in high grade metals, and India is now exporting large amounts of ferrous metals.

Turkey is another recipient of Soviet aid in metallurgy. The foundation for her metallurgical industry has been laid with the construction of the Iskenderun metal works and the Seydisehir aluminium plant, whose capacities are being substantially expanded. These enterprises promote Turkey's industrial and economic development and create jobs. Soviet experts have built and are building or expanding the operation of metallurgical enterprises in Iran, Pakistan and other countries in Asia. (*Soviet Features*, Vol. XXIII, No. 185, December 7, 1984).

IMPROVING SHEEP AND GOAT PRODUCTIVITY

In Asia, the Near East, Africa and Latin America there are approximately 400 million sheep and more than 300 million goats. They are an important source of meat, milk and wool and of products.

In 1983, the International Atomic Energy Agency (IAEA), with the Food and Agriculture Organization (FAO) created a Coordinated Research Programme on problem-oriented research to improve sheep and goat productivity. At a forthcoming Research Coordination Meeting in Nairobi, Kenya, (from 4-8 March 1985), scientists from the Peoples' Republic of China will report on the reproductive performance of the Saanen Chengdu Mah crossbred goat, researchers from Malaysia on their attempts to improve liveweight gain of Katjang goats through feeding rice straw treated with acid or alkali to improve its nutritive value, and from Northern Kenya on research to assess the nutritional value of thorn bush pasture for sheep. In Nigeria work will be reported on steps to improve the Yanhassa ewe.

Sheep and goats are often reared in areas where the climate is harsh with extremes of heat and/or cold, high humidity, and on pastures where feed is scarce and of low nutritive value and often seriously con-

taminated with pathogenic organisms, as well as a recurrent lack of water. If the efficiency of small ruminant production under small-holder management could be increased, the nutrition of millions of people would be greatly improved.

To increase animal productivity in such areas requires better sheep and goat nutrition, increased reproduction and better disease control. There are valuable applications of nuclear techniques in each of these fields. Isotopic methods can be used to examine the nutritive value of locally available foodstuffs. Radioisotopic tracer technology assists in determining accurately the water requirements of sheep and goats reared under different environmental conditions, and in devising efficient watering practices. Analytical methods based on isotope markers (*e.g.* radio-immunoassay) are also of particular value in studies of animal reproduction. Such techniques are simple, inexpensive and quick because measurements are performed on milk or blood samples. (IAEA-Press Release-PR-85/4-International Atomic Energy Agency, Wagramerstrasse 5, P. O. Box 100 A-1400, Vienna, Austria.)