

Copper exports¹ of developing countries as a percentage of total exports and gross domestic product, 1969

Country	Exports in 1969 millions US \$	Value of copper exports As a percentage of	
		Total exports	Gross domestic product
A. Copper as major foreign exchange earner (above 10 per cent of total exports)			
Zambia ²	720.8	94.6	52.6
Congo-Kinshasa	475.8	83.0 ³	33.0 ³
Chile ³	730.7	78.3	12.7
Peru	250.1	28.9	6.1 ⁴
Philippines	150.9	15.6	1.8
Uganda	21.4	10.8	2.4 ³
B. Copper as important foreign exchange earner (between 3-10 per cent of total exports)			
Haiti	2.3	6.2	...
Bolivia	7.4	4.1	0.8
Nicaragua	6.3	4.1	0.83
C. Copper as minor foreign exchange earner (less than 3 per cent of total exports)			
Mexico	21.5	1.5	0.08 ²
Morocco	2.3	0.5	0.07
Cuba	2.3	0.35 ³	...
China (Taiwan)	3.5	0.3	0.07
South Korea	0.1	0.02	...
India	0.2	0.01	...

Source: Organisation for Economic Co-operation and Development, Series C., 1969 (January-December), *Commodity by Trade: Imports Monthly Bulletin of Statistics*, March 1971; International Monetary Fund, *International Financial Statistics*, April 1971.

1. Copper ore concentrates, including matte (SITC 283.1); Copper and alloys, unwrought (SITC 682.1); Copper and alloys of copper, worked (SITC 682.2).
2. 1968 data based on International Monetary Fund, *International Financial Statistics*.
3. 1968 data.
4. 1967 data.

Nickel exports¹ of developing countries as a percentage of total exports and gross domestic product, 1969

Country	Exports in 1969 (million US \$)	Value of copper exports As a percentage of	
		Total exports	Gross domestic product
Cuba	13.4	2.1 ²	...
Indonesia	4.4	5.9	0.06 ²
New Caledonia	67.4 ³

Source: *Annales des mines* (1968), January 1971; Organisation for Economic Co-operation and Development, "Series C" 1969 (January-December) *Commodity by Trade; Monthly Bulletin of Statistics*, March 1971.

Cobalt exports¹ of developing countries as a percentage of total exports and gross domestic product, 1968

Country	Exports in 1969 (million US \$)	Value of cobalt exports As a percentage of	
		Total exports ⁴	Gross domestic product
Democratic Republic of the Congo	29.7 ⁵	5.2	0.2
Zambia	4.7 ⁶	0.6	0.3
Morocco	n.a.

1. Nickel ore and concentrate, including matte (SITC 283.3); Nickel and alloys, unwrought (SITC 683.1); nickel and alloys, worked (SITC 683.2).
2. 1968 data.
3. Territory of France.
4. United Nations. *Monthly Bulletin of Statistics*, March 1971.
5. Banque Nationale du Congo, 1970.
6. Republic of Zambia, Annual Statement of External Trade, 1968.

Economic implications of sea-bed mineral production for developing countries

The factors affecting the economic exploitation of the sea-bed minerals by the developing countries include fiscal, commercial, technological and above all the legal framework within which the institutional arrangements have to be defined. As far as technological aspect is concerned, the knowledge of existing exploitable resources is inadequate, and extensive exploratory activity is still required before reaching any final conclusion. Moreover, besides the knowledge of nature and the extent of the resources, it is also essential that the mining and processing methods should not be only technologically possible, but also commercially feasible.

From the petroleum production estimates, it is clear that their impact on the world trade of petroleum will be minor for the developing countries exporting petroleum. On the other hand, the developing countries importing petroleum will have to adjust according to the changing trend of greater diversification of petroleum supplied in the world.

The situation in case of marine nodules is more complex and uncertain because not enough is known about their location and metal content of deposits. In view of this fact, the extent and timing of the impact on the world trade of the four metals—manganese, copper, nickel and cobalt will only be a matter of speculation.

However, if and when, the exploitation of the sea-bed minerals becomes feasible, it would certainly have an impact on the economy of developing countries and ultimately might bring about some changes in the market conditions. This change in market conditions might cause at least two types of disruption: In the first place, the fluctuations in the prices of raw materials. If the prices rise sharply due to temporary shortages, producers will be benefitted and consumers harmed. If, on the other hand, there is an excess of supply prices will drop resulting in benefit for the consumers at the expense of

suppliers, leading to a long-run trend for deterioration in prices.

In general, the basic conclusion concerning the exploitation of sea-bed resources for the benefit of mankind and the developing countries in particular would be that if and when the exploitation of sea-bed minerals becomes technologically possible and commercially feasible, some regulatory and compensatory arrangements will have to be made to protect the interests of the developing countries.

B. Marine Mineral Resources in the Asian-African Countries¹

In recent years exploration and exploitation of the marine resources have assumed a new importance. One of the most outstanding achievements in this direction has been the development of new techniques and instruments to dig deep below the ocean floor. Various deposits occurring in the continental shelves, continental slopes, continental rise and the ocean floor, have basic differences depending upon the time, place and environment of their geological formations. Be that as it may, without going into details of technical characteristic of each and every marine deposits, a brief survey of their distribution in the Afro-Asian region of the world has been made.

1. Mineral deposited within bedrock

In the saline sedimentary basins of the shelves in Persian Gulf and the southern part of the Red Sea, there are many salt dome structures containing large quantities of elemental sulphur. Also, the geological evidence indicates that the shelf and slope areas of Africa and Middle East may contain bedded salt deposit and potash layers.

Coal is another important deposit which occurs in large quantities beneath the sea floor off coast of Japan, China

1. This summary has been prepared from the report of the Department of Economic & Social Affairs, "Mineral Resources of the Sea", published in 1970.