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LUSAKA PROGRAMME OF ACTION FOR THE DEVELOPMENT AND UTILIZATION OF  
MINERAL RESOURCES IN AFRICA

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## I. INTRODUCTION

1. One of the most important requirements for accelerating the socio-economic advancement of the African region, as called for by the Lagos Plan of Action, is the development of the mineral sector in line with the increased use of minerals and mineral products in the economies of the African countries. At present, the consumption of minerals and mineral products in most African countries is very low compared with other regions of the world.
2. The mining industry in Africa is going through a severe crisis and all mining ventures, apart perhaps from those involved in noble metals and precious and semi-precious stones, have in recent years suffered appreciably from low sales and falling commodity prices, escalating capital investment costs, high production costs, growing competition in mineral development, and overproduction throughout the world.

## II. SALIENT FACTORS OF THE CRISIS IN THE MINERAL SECTOR

### A. Exploration and mineral development

3. Mineral exploration in the region has recently been flagging although the continent is well endowed with a wide variety of minerals.
4. Basic exploration, mine development and full-scale feasibility studies preceding mining operations are high-risk investments. In the course of the last two decades companies, international agencies and Governments have gradually shifted such activities from the African region to other areas. The result, which has been beneficial to many third world countries outside Africa as well as to developed countries, is that considerable mineral deposits elsewhere in the world have been identified, investigated and fully appraised, and are now ready to be brought into production as soon as recession ends and economic recovery takes over. Hence Africa's position in the world mining system is likely to decline further unless policies are devised to halt the downward trend and revive interest in Africa's mineral potential.
5. The number of new mining ventures and plant construction projects in sub-Saharan countries dropped during the period 1972-1982 from 27 to 11 while North and Central America experienced a rise from 30 to 114. In South American countries, new mining operations rose from 21 to 51 during the same period.

B. Low rate of performance in the African mining sector

6. Africa's mining and processing sectors are still lagging considerably behind in terms of cost control, recovery and operating efficiency. Africa is endowed with some of the highest grade bauxite, iron ore, copper, cobalt and gold ore deposits in the world but low productivity, high production costs and low recovery levels have confined activities to much higher-grade deposits than anywhere else in the world. This is a serious situation if mining is essentially confined to rich deposits the result, in the long run, will be an imbalanced depletion of economic resources.

7. Low recovery rates in the African mining sector can be ascribed to supply problems, chronic shortages of essential reagents and spare parts, and equipment operating below acceptable standards. In land-locked countries, maintenance problems are particularly acute.

8. Africa's mining sector has large tailings and mine waste dumps with high metal contents. Some of these are of economic interest since they could be profitably subjected to low cost reprocessing and secondary recovery of valuable metals.

9. Reprocessing old waste dumps is now in fashion in western countries, Latin America and Australia, and could profitably be tried in Africa where previous and base metals of considerable value may be recoverable from tailings and dumps.

C. Transport deficiencies and their effects on mineral development

10. The poor condition of Africa's road and river transport systems, railways, ports and related facilities is a growing handicap to development, slowing down exports and holding up consignments of primary ore, finished and semi-finished products as well as indispensable consumables for industry.

11. Transport deficiencies are also at the root of difficulties in maintaining adequate supplies for the mining sector. It is not unusual to see mining industries having to operate without proper maintenance, without replacement of worn parts and without the required quantities of consumables and reagents as a result of unreliable deliveries. In extreme cases, the industry has to resort to air freight at considerably higher costs per ton.

D. Marketing of mineral commodities

12. The development of Africa's own marketing sector was strongly recommended at the time of the formulation of the Monrovia Strategy for the Economic Development

of Africa in connection with the establishment of a new international economic order. Suggestions included greater control by African mineral-rich countries over marketing procedures and distinct African involvement in all transactions and aspects of mineral marketing on the international commodity markets.

13. Similar goals have been set in the Lagos Plan of Action, encouraging member States to become more actively involved in all stages beyond mining, processing and refining.

14. The need for African countries to derive larger profits from the sale of their commodities is even more pressing now that capacity in excess of present and future requirements is imposing serious cutbacks in production which in turn have reduced revenues from minerals and metals to their lowest levels since the inception of the modern mining industry in the region.

15. This effort was supposed to provide in-depth knowledge of marketing and brokerage practices and procedures, and the ability to forecast trends in consumption, speculation and general requirements so as to introduce timely and appropriate policy measures in order to reduce the adverse effects of market tampering and contribute to sustained price stability and possibly better growth prospects.

16. In 1983 the total export value of the mineral output of developing African countries was estimated at 6.8 billion dollars, of which some 30 per cent was marketed by African national marketing corporations established in recent years.

17. While this may still be far from effective control over all aspects of the metal trade and end markets it is, nonetheless, a considerable step towards greater control of market operations and is a distinct token of Africa's growing influence in the close-knit circle of metal traders.

18. Transport deficiencies also constitute one of the major problems contributing to the slow development of intra-African trade.

#### E. The industrialization dilemma

19. The mining sector in Africa, though essentially export-oriented, was also expecting to benefit from industrialization by selling its products to meet the needs of the developing industrial sector. However, slow progress in establishing and building up heavy industry in developing African countries has not so far allowed the mining industry to offset lower exports by supplying local consumers.

20. The commodities most affected in this respect are iron ore, bauxite, manganese and several other alloying materials which have failed to find outlets on the local market owing to slow implementation of industrialization programmes.

#### F. Trade barriers

21. A major obstacle to sustained development in the African mining sector is the tariff restrictions which often apply to ore and concentrates for import into industrialised countries. Tariff protection may also be applied to semi-fabricated products, encouraging exports of ores and concentrates while semi-refined and refined products are penalized. This situation prevails in many developed nations and reduces the prospects for the development of more integrated industries based on Africa's mineral resources.

#### G. Seabed mining challenge

22. During the last two decades, seabed mineral resources have generated a great deal of interest on account of the foreseeable depletion of long-established land-based ore deposits and the prospects of circumventing the uncertainties and risks related to conventional sources of supply by developing seabed resources. It is believed among mine promoters that the ocean floor offers an alternative to many conventional areas and holds good prospects for the economic mining, a few decades from now, of a restricted number of mineral commodities, some of which are essential to industrialised countries' metal and alloying industries.

23. Seabed mining of manganese, nickel and copper-bearing nodules and the recovery of polymetallic muds and brines constitutes a serious challenge to the conventional mining of land-based deposits, in particular for the African mining sector where these commodities represent no less than 30 per cent of the annual export value of all minerals of the region.

#### H. Financial constraints

24. Mineral development has traditionally been financed from internal cash-flows or issues of new equity, mostly on a small scale commensurate with the turnover of the operations.

25. Given the growing scale of mining projects, however, this approach is no longer possible and the industry has been forced to rely increasingly on external financing.

26. The over-production which has resulted from falling demand has not only been a considerable constraint on revenues but also created an additional burden which

is draining a large share of the foreign exchange earned to service the debts the industry has contracted.

27. Meanwhile, provisions for capital projects, plant rehabilitation and supplies have often been reduced in line with the limited resources available, at the expense of efficiency in the industry.

28. As the mining sector in Africa is highly capital intensive, financing arrangements have become increasingly complex. Meanwhile, economic prospects in the sector remain unfavourable.

29. In many cases the equity share of the capital for new ventures has fallen in relation to capital borrowed at interest rates which few developing African countries can afford. Ventures can be financed by a variety of arrangements, among them loans from consortia of international institutions, suppliers' and buyers' credits, and borrowings on international capital market - but these again command interest rates beyond the means of the countries concerned. All these possibilities are subject to increasingly stringent conditions and scrutiny, and thus favour countries offering financial safeguards and related incentives that few developing African countries can afford.

#### I. Institutional inadequacies

30. Although, as a follow-up to the recommendations of the Lagos Plan of Action, Africa undertook to strengthen national, subregional and regional institutions with a view to promoting activities, investment and co-operation in the mineral sector, little progress has been made towards the goal of greater self-reliance.

31. Efforts to create or consolidate technical, scientific and financial organs at the national, subregional and regional levels, capable of coping with the growing requirements of the mineral extraction industries and stimulating multinational co-operation in this field, have run into difficulties in so far as financial, material and moral support have not always been sustained.

#### J. Manpower development

32. Manpower development is a fundamental issue. Africa has not so far succeeded in raising sufficient personnel to the required technological levels, and this has perpetuated the dependence by Africa's mining sector on external expertise. National experts should be given greater moral and financial support by their governments in order to create incentives and generate interest for the mining sector.

33. Considerable progress has been made in the last 10 to 20 years in replacing expatriate management, engineering and skilled staff with well educated and trained local staff. However it has been recorded in many surveys of operating efficiency in the industry that insufficient emphasis has been placed on training the lower-level personnel who handle equipment of considerable capital value and share responsibility with management for the economic use of costly consumables.

34. Most affected by high operating costs due to improper use of mine inputs by poorly trained personnel are the small and medium-size mines. Training facilities to raise semi-skilled workers to skilled levels have been built up in the large operations over the years, though they are not yet available throughout the industry. Intra-African training based on experiences gained by countries like Egypt and Zambia should be encouraged.

#### K. Inadequate efforts to assist agriculture

35. Agriculture is considered to be of the highest priority in the social and economic advancement of Africa. The need to find ways of using the continent's abundant resources to produce adequate quantities of cheap fertilizer, where possible within easy reach of its intended consumers, is part of the challenge of the future for many developing countries if the trend to falling crop yields, declining food production and the resulting social hardship is to be reversed.

36. A severe imbalance in fertilizer-consumption between developed and developing countries has long been evident. The extremely low fertilizer inputs, per capital and per hectare, to the agricultural sector in sub-Saharan Africa by comparison with other geographical areas are particularly striking.

37. At least 26 countries in sub-Saharan Africa have some sort of phosphate deposits. The exploitation for domestic consumption of those of no apparent commercial interest could be considered in areas where smallholders do not have the means to purchase imported fertilizers.

### III. RECOMMENDATIONS AND CONCLUSIONS

38. In the light of the long and deepening economic recession in the mining industries, it is difficult to predict with confidence what future trends may be with respect to broad recovery in the mining industry as a whole, mineral consumption, and demand for the range of mine products which make up the resource base of Africa's mineral sectors.

39. Against a background of difficult and unpredictable circumstances while the economic recession is still far from showing a clear up-turn, the mining industry in developing Africa should base its short- and medium-term future on a self-sustained recovery effort, placing emphasis on a wide range of operational improvements and encouraging a more cost-conscious attitude at all stages in the mining industry in order to restore its viability and competitiveness vis-à-vis other producers. In essence the African mining industries need to revitalize and modernize their operating, financing and marketing management. To achieve better results in a limited time span, priorities must be set that match the resources the mining sector can afford to deploy for this purpose.

40. A review of the salient factors affecting the mining sector in Africa suggests that consideration should be given to the following points:

(a) The assessment of natural resource endowments in Africa based on selecting criteria should continue to be pursued, giving priority to commodities offering the best prospects for growing consumption, appreciating world market prices and the development process of each country;

(b) While large-scale mineral projects are essential to the foreign-exchange earnings and socio-economic development of Africa, sustained growth in this sector of the mining industry relying on national inputs and resources is often beyond individual countries' capacity. Considering present-day reliance on private, State and mixed enterprises for larger operations, emphasis should be placed by African countries on the simultaneous development of the small and medium-scale mining sector, especially in rural areas where mineral development could have optimum impact on the provision of basic human needs for the large population of Africa;

(c) Existing and future mining industries in Africa must be oriented to meet the basic needs of the African population; hence the need for measures including the review and revision of existing policies, legislation, marketing arrangements and taxation applying to both large and small-scale mineral development projects so as to promote greater local and regional manufacturing and consumption of their products;

(d) While restructuring the African mining industries seems indispensable in order to respond to the region's needs, co-operation and consultations between African suppliers and consumers (national, subregional or regional) will also have to be increased so that sources of supply for mineral development projects and markets for minerals and mineral-based products are readily known. This process is likely to increase intra-African trade in minerals and mineral products. In addition

transport and communications systems between African countries should be developed and/or improved. Every effort should be made to facilitate the transport of commodities, especially from land-locked countries;

(e) ECA should study the possibility of establishing associations concerned with specific minerals or groups of minerals and report there-on to the next regional conference;

(f) Capital projects within the reach of national capabilities and offering quick returns, such as the reprocessing of tailings and mine dumps containing recoverable precious and base metals to prolong the life of the resources within the mining industry, should be promoted. National mineral development policies, legislation and taxation on small and medium-scale mineral development activities will have to be reviewed and redefined in order to include incentives to potential small operators such as village co-operatives, private companies, individuals and larger mine operators who introduce cost-saving methods and other measures to improve performance and productivity in the mining sector. National machinery will also have to be reviewed to ensure that small- and medium-scale mineral development operators are supported by other sectors of the economy and vice-versa;

(g) Governments should create investment incentives, offering equitable conditions for new mine promoters and investors so as to restore confidence in the mining sector in Africa and attract capital investment. States should endeavour to harmonize their policies as regards private investors in the region in order to avoid unproductive competition by African countries for such capital investments;

(h) ECA should hold discussions with ADB on the possibility of establishing a special mechanism (such as a special window) for financing mineral development projects in Africa with a view to according high priority to Mineral Resources Development. A report on these discussions should be submitted to member States as early as possible;

(i) States which have not yet become members of the ESAMRDC or CAMRDC are urged to do so, and all members of those Centres are urged to pay their subscriptions regularly;

(j) Increased performance in the industry should be sought by enhancing a more rational utilization of national expertise. The development of manpower at all levels should be improved by up-grading institution for training, research, technology development, finance management, production and engineering services to the standards required by the large-, small- and medium-scale mineral operators. African enterprises and policy makers should make full use of the skills and expertise that Africans can

provide giving them appropriate facilities and incentives to do a good job. Exchanges of skilled technical staff among African countries and institutions should be encouraged, as should the use of African institutions to train technical staff;

(k) Emphasis should be placed on development and research geared towards large scale commercial fertilizer projects and the production and use of indigenous phosphate natural gas, potash, sulphur and other raw materials in forms less costly to process than conventional fertilizers: experiments in a number of African countries in recent years have met with considerable success yielding outstanding agronomic results when compared with the increased yields obtained with fully upgraded, acidulated and processed fertilizers;

(l) ECA should approach international organizations and donors seeking financial support for projects promoting the commercial development and use of low-cost fertilizers;

(m) The task of monitoring the implementation of recommendations on the development of the mineral sector in Africa should be assigned to the regional and sub-regional institutions concerned;

(n) On the basis of points raised during the Regional Workshop on the Role and Prospects of Copper and Aluminium in African Development, the Conference adopted one further recommendation: "A regional survey of copper and aluminium fabricating facilities and marketing prospects should be conducted with a view to the promotion of intra-African trade in copper and aluminium products".