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**Ad-hoc Experts Group Meeting
on the Development of African Metal Industries
Based on South-South Cooperation**

Addis Ababa, Ethiopia, 17-21 October 1994

REPORT

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I. INTRODUCTION AND BACKGROUND

1. The Ad-hoc Experts Group Meeting was held at ECA Headquarters, Addis-Ababa, Ethiopia, from 17-21 October 1994. The meeting was convened to consider the working paper on the development of African metal industries based on South-South Cooperation, country position papers and a proposed follow-up programme of activities on the development of African metal industries.

2. The experts examined the policies and issues that affect the prospects for the development of African metal industries taking into account current global trends in the metal industries such as: globalization, trends in the metal markets and the general strategic significance of African metals within the context of the opening up of access to hitherto un-accessible Eastern countries strategic metallic materials.

3. The experts then reviewed major determinants of the competitive development of African metal industries such as: financing of mineral exploration and mining development, technology transfer, potential for cooperation in mine production, beneficiation, smelting, refining, fabrication of metal products, and trade. Experts also address the issue of technological competitiveness of African countries in the development of metal industries within the context of South-South Cooperation.

4. The experts concluded their substantive deliberations by drawing-up concrete suggestions on how South-South cooperation could be brought to bear in the development of Africa's metal industries particularly through mechanisms such as joint ventures in financing exploration, mining development, optimum utilization of installed mining, mineral processing, smelting, refining and metal fabrication capacity in African countries.

II. ATTENDANCE

5. Experts from the following countries attended the meeting: Botswana, Egypt, Ethiopia, Ghana, Guinea, Nigeria, Namibia, Tanzania, Uganda and Zambia.

III. OPENING

6. The meeting was opened by Mr. M.D. Sarr, Deputy Executive Secretary of the Economic Commission for Africa on behalf of Mr. Layashi Yaker United Nations Under-Secretary General and Executive Secretary of the Economic Commission for Africa in his opening speech, he welcomed the participants to the ECA headquarters and to Addis-Ababa. He indicated that the last five UNECA Conferences of Ministers since 1990 have been organized around the concern that Africa still cannot shake off the malaise of secular economic stagnation, social decline and marginalization in the world. He pointed out that important steps have been taken to mark a turning point in getting the Africa continent prepare itself to enter the Twenty-First century on a competitive footing. He cited the Lagos Plan of Action, the Final Act of Lagos, the Programme of the Second Industrial Development Decade for Africa (IDDA-II) and the Abuja Treaty Establishing the African Economic Community as examples.

7. After describing the structure of African industries he pointed out that the African Region as a whole has very large reserves of the most important metallic and non-metallic

minerals from which essential metals and materials for sustainable industrialization are produced. Despite this favourable disposition, the continent which covers about 25 per cent of the total surface area of the entire earth, and has a share of world's population of about 10 per cent, sadly enough has a contribution to total world wealth in terms of output (GDP) of only 1.0 per cent.

8. The development of the metal industries was an essential step in the process to transform Africa's rural and agro-based economies to industrial ones. He then went on to say that the metal industry was of strategic importance and indispensable in the expansion of Africa's economic base. He also drew the attention of participants to the question of technology and skill development that should be taken into account. He said that the new generic technologies and the corresponding skills have profoundly changed the relationships among different economic branches including metal industries. Some technologies such as microelectronics have affected virtually all sectors of the economy. This meeting should address itself to the question of how the African region could improve its competitiveness, in a technology-based approach to the development of metal industries. He urged the experts to review major determinants of the competitive development of African metal industries such as: financing of mineral exploration and mining development, potential for cooperation in mine production, mineral processing, smelting, refining and fabrication of metal products.

9. With this in mind, he hoped that the ad-hoc experts group meeting would highlight the strategies that could be pursued to speed up industrialization in African countries through the use of their mineral resources. This he thought would contribute to achieving the overall integrated development through the development of the metal industries subsector. He concluded by saying that the results of the meeting would be widely disseminated with a view to reinforcing Intra-African Cooperation.

IV. ADOPTION OF THE AGENDA

The meeting adopted the following agenda:

1. Opening of the meeting
2. Election of officers
3. Adoption of the agenda and organization of work
4. Consideration of Document: ECA/IHSD/IDPS/006/94 The Development of African Metal Industries Based on South-South Cooperation
5. Presentation of the national position papers and preparation of follow-up programme of activities on the development of African metal industries based on South-South Cooperation
6. Plant visits
7. Any other business
8. Adoption of the report and closing of the meeting

V. ACCOUNT OF PROCEEDINGS

A. Election of officers

10. The meeting elected Mr. Aseged Mammo Deputy General Manager Basic Metals and

Engineering Industries Bureau, Ethiopia, as chairman and Mr. Octavian Mageni, Head Metals and Engineering Sector, Ministry of Industries and Trade, Tanzania as rapporteur.

B. Adoption of agenda and organization of work

The agenda and organization of work were adopted as amended.

C. Consideration of Document ECA/IHSD/IDPS/006/94: The Development of African Metal Industries Based on South-South Cooperation

11. The Secretariat presented the working document ECA/IHSD/IDPS/006/94: The Development of African Metal industries Based on South-South Cooperation. In the discussions that followed the presentation of the working document, the meeting made a number of amendments which are been reflected in published the working document. Experts made substantive comments on the following issues:

1. Globalization

12. Experts agreed that globalization is a major factor in the future development of the metal industries in africa. Markets of the future will no longer be national but international. Africa must be ready to compete in the international markets. The other important consideration was the role of the private sector in global markets. African countries will have to change their traditional role as suppliers of raw material to users of metals in the context of global markets.

2. Financing

13. In global markets dominated by private enterprise, investment finance will come mainly from the private sector. African countries will therefore need to create an enabling environment that will attract private finance.

3. Technology

14. Competitiveness of African metal industries in the global markets will be determined by technology. African countries will need to maximize on their utilization of there mineral resources. With technology, African countries might be able to shift the localised scarcity of mineral resources.

4. Multilateral institutions

15. The experts agreed that the new world order has created windows of opportunities that might lead to the re-orientation of the traditional role of multilateral institutions such as the World Bank, the IMF and the United Nations system. with regard to the metal industry sector, these institutions could possibly take up the role of providing venture capital for mineral exploration, evaluation of mineral deposits and mining development.

D. Presentation of the national position papers and preparation of follow-up programme of activities on the development of African metal industries based on South-South Cooperation

16. Country position papers were presented in the following order: Tanzania, Botswana, Nigeria, Egypt, Uganda, Ghana, Ethiopia, Namibia, Zambia and Guinea. In the discussions that followed the presentation of national position papers the following observations, conclusions, recommendations and follow-up programme of activities were adopted for the development of African metal industries based on South-South Cooperation:

E. Major Metal Industries Constraints

17. During deliberations, the experts highlighted a number of sectoral constraints which hinder efficient metal production and engineering development in many African countries which include:

1. Government policies

Most Governments in the African continent are characterized by having political instabilities, implementing non-permanent development programmes due to inadequate technical and financial capabilities, leaders lack the necessary scientific and technological vision, there is also lack of exchange of information and sharing of experience and skills between African countries which has not been fully explored. In fact the scale of effective sub-regional or regional cooperation is almost negligible.

2. Financing

Lack of the necessary financing is the critical missing link in the entire range of South-South Cooperation. Schemes of cooperation whether in trade, production, investment, education, mining, science and technology need adequate financial resources to be viable.

3. Human capital

Shortage of trained technical and managerial staff with a broad knowledge of project preparation, evaluation and implementation, and of the technical, organizational and financial aspects of industrial management. Generally there are no adequate professional cadres capable of providing an in depth engineering as well as managerial structure in most of the African metal industries.

4. Power supply

Frequent power interruptions, inadequate water supply and absence of reliable communication infrastructure such as good roads, rails and working telephones contributes towards the weakening of production in metal industries.

5. Plant, machinery and equipment

Most of the technology (machinery and equipment) used in African metal industries was imported more than thirty years ago. These technologies are either inappropriate or obsolete by today standards. Such ageing machinery in some industries cause persistent stoppages in production. Some of the machinery also lack the important accessories, tools, lubricants, etc. to exploit their full potential. In many cases systematic maintenance programmes are not conducted and such a negligence causes frequent machinery breakdowns. It is also true that some important machinery and equipment are not available in the necessary diversity and capacity to encourage sub-contracting and specialised functions for a given subsector of industry.

6. Technology development

The infancy of the industrial supporting (servicing) institutions does affect the performance of the metal industries. Most national as well as regional R & D institutions are not yet to play their roles fully although they have already started to do their best under the prevailing operational circumstances. Most of those institutions lack professional staff and are still operating like projects since most of their basic infrastructure is still under project implementation. The major bottleneck for such projects is the lack of financing sources from either donors, Government's allocations or contributions from member states.

7. Quality control

A lot of African metal industries lack proper laboratory facilities and testing equipments to ensure proper sustained quality control of their products at each stage of production. Even in those few companies that have laboratories attached to their factories, the same are often short of supplies of the necessary chemicals, tools and other accessions to enable full or proper use of those laboratories. In order to ensure product quality standards.

8. Raw materials and inputs

Ironically, Africa cries for raw materials to run her manufacturing industry despite of having abundant mineral resources which are actually under-exploited due to various constraints including:

- dependence on imported inputs in exploration and production activities.
- depressed and dictated prices of commodities on the international markets
- scarcity of foreign exchange for procurement of essential inputs and spares.
- lack of skilled manpower for the sector's requirements.
- technological dependence on industrialized nations with negligible local in-built capability.
- insufficient funding by governments
- lack of data on the mineral potential reserves existing in the region.

- lack of sub-regional or regional cooperation and coordination in the exploration for and exploitation of metallic minerals, which are risky and capital - intensive ventures.

F. Opportunities:

18. With the above constraints in mind, it is tempting to recommend solutions to those constraints, and this has been done many times, but since there will never be any clear cut solutions, the meeting suggested to turn the existing constraints into opportunities as follows:-

1. Policies

There is need to design policies aimed at encouraging and promoting South-South flow of investment and technology. Countries with resources for foreign investment will need to design policies aimed at encouraging investments to be made in other countries within the South. The countries without investment resources will require to evolve policies and incentives that will attract foreign investment from countries of the south. Financial cooperation could involve institutions and mechanisms, regional development banks, multilateral institutions and South-South development assistance mechanisms already in place.

2. Investment in human capital

There is need to invest in human capital. The most important determinant of high sustained economic growth is the ability and productivity of the people who are entrepreneurs, managers and workers in productive undertakings. Increasing education and technical capability of the population is a key to an efficient and flexible economy that can effectively respond to challenges of adaption and external shocks.

As could be learnt from the South East Asian experience, their superior record growth has been largely due to accumulation of physical and human capital. It is important that deliberate policies must be put in place to achieve a rapid accumulation of human resources. The result of these policies will be a broad, technically inclined human capital base well-suited to rapid economic development. As such continuous training and re-training programmes should be enhanced.

3. Exploitation of mineral resources

There is need to exploit the existing abundant mineral resources and use them efficiently. As such Africa should not be satisfied with being a supplier of cheap raw materials (crude or semi-processed) and should maximize utilization of its own resources to increase the goods value added.

Most of the constraints which hinder the development of the mining sub-sector in Africa could be minimized through:-

- increased knowledge of the mineral resource base through networking, creation

of databases, intensification of exploration efforts, provision of laboratory and pilot plants and dissemination of information through regional institutions such as the African Iron and Steel association, (AISA).

- development and diversification of mineral exports by continuously undertaking commodity analyses and market identification.
- encouragement of local utilization of mineral raw materials, especially industrial/non-metallic minerals in conjunction with the industry sector.
- reduced dependence on foreign inputs of mining equipment, spares and other consumable by developing local capacity or utilize fully the existing facilities.
- training of high level professional, managerial and technical personnel in all aspects of mineral resources development.
- Cooperation in exploration, development, mineral processing and marketing of the region's mineral resources.
- development and implementation of projects without much delay for the benefits of the economies of the region. Effective project management and continuous follow up of project implementation should be given priority.
- assessment of the mineral activities and improvement of investment climate.
- governments participation in the mineral sector in the initial stages with the intention of selling the resulting investment ventures to capable local entrepreneurs when the project has shown stability and good performance.

4. Acquisition of technology

Emphasis should be given to acquisition of appropriate technology in mining and metal production facilities. The growth strategy of the African metal industries should include among its main objectives the rehabilitation and modernization of its existing facilities to cope with the current economic and technological demands of the goods being produced.

In other words, there is a need to establish more comprehensive engineering infrastructures in the region in the field of engineering design and project implementation. Moreover, necessary facilities for spare parts and components manufacturing should be established. Such facilities include the design and prototype development centres, foundries, machine shops, forging shops, tool rooms, heat treatment, metal cutting and fabrication and surface finishing.

5. Infrastructure for socio-economic development

There is a need to improve, expand, sustain, consolidate and maintain on a continuous basis the economic infrastructures which are critical to development and survival of

metal industries as well as telecommunication. Equal consideration should be given to reliable availability of social infrastructures such as education, health, political stability.

6. Research and development facilities

There is need to establish and strengthen research and development/quality control facilities at national as well as regional level. The words R & D and the word total quality management go hand in hand with the word "Competitiveness". In order to maintain a market share or to penetrate a new market, enterprises will be forced to carry out intensive R & D on relevant aspects of their products and also ensure that the products are of the highest quality as well as price competitive and commercial efficiency. There is no short cut to this except that all enterprises have to invest in R & D and quality control. When one enterprise cannot afford it alone, pooling together either within the national, regional or South-South Cooperation framework should be explored.

Other alternatives of limiting the effects of lack of sources of financing of R & D institutions in the region is to consider rationalization of the various existing institutions, soliciting cost sharing from benefiting industries and trade associations on partnership and fee arrangements and other considerations.

7. Environmental protection

Industries should be environmentally conscious in terms of disposal of solid, liquid and gaseous wastes in order to minimise environmental pollution. In order to achieve that objective, there is need to formulate workable national environmental policies, standards and protection legislation for sustainable economic development and survival. In other words, all African Governments within the South-South Cooperation framework should adopt a positive environment management outlook that will allow for a cleaner and safer operating of metal industries while at the same time ensuring industrial reliability and maintaining a competitive edge in the internal and export markets.

8. Consultation and involvement of economic actors

Dialogue or consultative mechanism between Governments and metal industrial enterprises/associations should be enhanced under the auspices of the Economic Commission for Africa (ECA). In doing so, feedback and reaction on impact of Government policy measures would thus be facilitated. Governments could also promote the interaction between national business oriented organizations and associations, such as Chambers of Commerce, engineering institutions, Manufacturers Associations as well as continuous contact with regional bodies such as the African Iron and Steel Association (AISA), African Regional Centre for Engineering Design and Manufacturing (ARCEDEM), Arab Iron and Steel Union (AISU), EGITALEC of Egypt for design and engineering activities, Central Metallurgical Research & Development Institute (CMRDI) of Egypt, etc.

G. The African Iron and Steel Association (AISA)

19. AISA was established in 1991 with Nigeria as the headquarters. AISA has the objective of establishing a continental data bank of high grade information. Among the most important activities are the gathering of experience gained in the search for methods of securing the best production of first grade metals, experience gained from trouble-shooting in the operation of the steel plants, identified new markets for specialized steel products like alloy steel and special sections as well as their production, training programmes that are suitable to member's particular requirements and comparative advantage on raw materials and steel production.

20. The scope of operation of AISA therefore, covers all the mining, production and processing activities associated with the iron and steel industries as specified in the definition, standards, practices and classifications universally accepted and applied. It is also within the Association's scope to promote and encourage throughout the African countries, the processing and consumption of iron and steel production and by-product; and liaise with member countries with a view to establishing extensive and profitable co-operation among them on a permanent basis and in three fields namely exchange and information, technical and techno-economic studies and training.

H. Project engineering, management and implementation services

21. The meeting examined a model institution in Egypt that has been successfully operating as a project engineering, management and implementation company. The Egyptian, Italian Engineering and construction Joint Stock Company (EGITALEC) was established in 1977. It is a joint venture between four Egyptian metallurgical public sector companies and an Italian engineering and contracting company. Egitalec provides complete services for studies, consulting, design, engineering, project management and implementation services. To-date the company has implemented about 180 projects and play now an important role in local design and manufacture of capital equipment. The company succeeded in creating local skills in these activities at international level through technology transfer and intensive on the job training of local staff.

22. The experts noted that EGITALEC succeeded in getting recognition of several important international financing organisations such as IBRD, US-AID, CIDA, the Islamic Development Bank etc. The company has undertaken several metallurgical and industrial projects financed by these organizations. Moreover, the company is now working as a local subcontractor for several international companies undertaking projects in Egypt but are based in the United States, Germany, Italy, Denmark and Italy (to mention only a few).

23. EGITALEC has successfully won overseas contracts for engineering projects and studies. The company has accumulated valuable experience, capabilities and know-how in the mining, metallurgical and chemical industries sectors which can be put at the disposal of other African countries. The company could play a vital role in the development of African metal industries based on South-South cooperation particularly in the fields of training, studies, engineering, design, project management and implementation for new projects, rehabilitation and upgrading of existing plants.

I. The Development of African Metal Industries based on The South-South Cooperation concept

24. The need for the countries of the South to develop has now been recognized. It goes beyond the simple aspiration for material advancement. The envisaged development should be determined by what people perceive to be their social and economic priorities. In working together therefore, to increase their own capacity to develop, based on self-reliance, the countries of the South can more effectively achieve this desired development.

25. African countries are highly endowed with abundant mineral resources. However the development of metal industries has been constrained by among others:

- (a) the general on-the-average poverty levels of countries within the subregion which makes the financing of projects on their own difficult
- (b) the lack of will-power amongst countries to make the ideals of regional integration take root, a situation which might allow the pooling of financial resources in order to implement projects on a joint-venture-basis and
- (c) the general lack of experience, capacities and capabilities to design, promote, implement and operate large scale projects;

26. It is therefore recommended that:

- 1. There is a need now for countries of the South to come together in mutual support joint-endeavour, reciprocal actions, including the creation of networks for sharing research findings and business opportunities, on mineral-based metal-industries projects.
- 2. A metal industries development consultative committee is proposed to be established within the framework of existing institutions and organs at a continental level. The committee could have subregional representations at the level of regional economic communities (PTA, SADC, ECOWAS, ECAS, UMA) and at national levels. Its scope of operations could cover consultations and coordination of exploration, mining, production, and processing activities.
- 3. It is further proposed that an **African minerals development facility** either as a fund or as a window of resources in existing continental banking institutions could be formed with incentives similar to what obtains in the Agricultural Development Banks, on Industrial Development Banks. The Economic Commission for Africa (ECA) should undertake a study to assess the need, issues involved and options available for setting-up such a facility based on South-South cooperation.

4. **There is a need for the ECA to establish a comprehensive database that would serve as a basis for promoting the development of metal industries based on South-South cooperation.**