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ECONOMIC COMMISSION FOR AFRICA  
Meeting of Experts on Iron and Steel  
in West Africa  
Monrovia, 14-18 October 1963

REPORT OF THE MEETING OF EXPERTS  
ON IRON AND STEEL IN WEST AFRICA

63-3727

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ON IRON AND STEEL IN WEST AFRICA

1. A Meeting of Experts on Iron and Steel in West Africa was held in Monrovia (Liberia) from 14 to 18 October 1963.
2. Delegates from the following countries were present: Gabon, Ghana, Liberia, Mali, Niger, Nigeria, Senegal, Sierra Leone. Also present were observers from Austria, the Federal Republic of Germany, Italy, the Netherlands, the Union of Soviet Socialist Republics, the United States of America, and Yugoslavia. A list of delegates is attached as Annex I.
3. The Vice-President of Liberia and the Commissioner of the Commonwealth District of Monrovia welcomed the delegates, and there were opening addresses by the Acting Secretary of State and the representative of the Executive Secretary. The text of the opening addresses is attached as Annexes II and III, (English only).
4. Mr. James M. Weeks (Liberia) and Mr. N'Guema (Gabon) were elected Chairman and Vice-Chairman respectively.
5. The provisional agenda (E/CN.14/IS/1) was adopted. The discussion was based on a report on iron and steel in West Africa prepared by the ECA secretariat and its consultants (E/CN.14/IS/2 and Corr.1 (English only) and Corr.2). During the discussion, tables extracted from a report prepared for the Third Conference on the Harmonization of Industrial Development Programmes in West Africa, convened by the President of Niger, were circulated at the request of the delegate of Niger.
6. Estimates of steel consumption (calculated as crude steel) in the sub-region for 1970 were put forward in the report, on the basis of a reasonably optimistic rate of growth of gross national product in the different countries, at 1.1 million tons. The ECA experts recommended that only the production of light sections, and not heavy sections or wide strip, should be envisaged in the first place, since economic production of the latter required a major market and the solution of more difficult technical problems. Even so, the proposed works on the one hand could not be expected to make the whole range of light sections required in the countries of the sub-region; on the other hand, in view of the geographical scope of the sub-region, the works could not be ex-

pected to supply the total market in the countries concerned, even of light sections. Finally, the existence of small works based on local scrap and making the same range of products would also reduce the market available to the new works. For all these reasons, the ECA experts proposed the setting up, in the first place, of a works with an initial capacity of 400,000 tons of crude steel. This works should be designed so that expansion would be possible.

7. The ECA experts had estimated, therefore, that it would be preferable to set up only one integrated works, in view of the economies of scale; this works should have an initial capacity of 400,000 tons of crude steel. A works of this size could use the blast furnace, which, except in special circumstances where the cost of energy (natural gas or hydroelectric power) was extremely low, still remained the most economical process for the manufacture of steel, at least at the level of production envisaged. Since the sub-region had meagre resources of coking coal and large reserves of rich ores which were in plentiful supply, these ores should be used, so as to reduce consumption of solid fuel to the maximum extent possible. Naturally, the blast furnace should be preceded by a plant, for the preparation of the charge and should be capable of using all possibilities of injection of other fuels alternative to coke such as natural gas, fuel oil, or pulverized coal, through tuyere injection, since these processes made considerable coke economy possible. The meeting considered that for the reduction of ore the most modern and efficient technology consistent with the economies of the industry and the economic conditions of the West African sub-region should be used.

8. The pig iron produced from ore of low phosphorus content should be converted into steel by an oxygen process. Since the technique of continuous casting was now well established, the ECA experts had recommended that it was unnecessary to go to the expense of installing a primary mill and the use of ingot casting. Semi-finished steel provided by the continuous casting plant should be: (i) rolled in finishing mills into light sections, wire rods, reinforcing bars, merchant bars, angles, narrow strip, light beams; (ii) supplied to re-rolling mills within the sub-region.

9. Since the price of a ton of steel products was relatively low ex-works, the cost of transport played an important part in the final price of products delivered to the consumer. The existing means of communication in the interior of the sub-region were geared to supply based on seaports; thus the cost of transport by tramp shipping between the seaports where the factory might be installed and other seaports should be carefully studied. Until now there had not been appreciable regular transport between the different seaports of the sub-region. Freight rates actually in force by the shipping companies seemed to be too high and should be capable of being reduced considerably when the new works was in production and supplying the different countries of the sub-region on a regular basis. It was therefore desirable that the countries interested in setting up a substantial new works should examine with the shipping companies freight rates which might be anticipated when the new works was established. In this connection there might be a case, also on wider grounds of promoting West African trade, for establishing joint West African shipping arrangements; this matter might be explored by the Standing Committee on Industry, Transport and Natural Resources.

10. It was generally agreed that only one integrated plant should be established at this stage, and that preferably this should be at a coastal site. It was noted that the ECA experts had recommended that the plant should be located in Liberia (either at Monrovia or at Buchanan), in Nigeria (at Port Harcourt) or in Ghana (at Tema). The meeting agreed that these sites should all be considered and requested that, in addition, consideration should be given to other sites in Nigeria and to a possible site in Gabon. It was agreed that the integrated coastal works should probably not be in a position to supply cheaply all the territories located far from the coastal plant, owing to the high cost of transport. Therefore, the desirability of considering the setting up of smaller plants at inland sites was recognized. It was recommended that a study should be undertaken as soon as possible of the costs, delivered to centres of consumption, of finished steel products produced at such plants and at the integrated coastal works. This study should take into account plans for technical cooperation between groups of countries in the sub-region.

11. It was suggested that there might be possibilities of producing at the integrated plant not only finished steel for the West African market but also pig iron and semis for export. It was recognized that the plant could economically produce a certain proportion of semis for re-rolling at small plants within the sub-region. However, it was pointed out that the world market for pig iron and semis was at present such that it was doubtful whether it would be wise policy to count on regular markets for pig iron and semis outside Africa, except perhaps on the basis of long-term contracts with certain large-scale producers such as Japan.
12. The meeting, recognizing the absolute necessity for a sizeable West African steel plant to have open access to the West African market, recommended that arrangements should be made so that West African governments gave priority in their purchases of steel products to the integrated plant, subject to the economic measures which might be taken later on in the reciprocal interest of the parties concerned. Consideration would also have to be given to limited tariff protection during the initial period of operation of the plant. It was also recognized that the availability of finished steel within West Africa would require study of new patterns of exchange, with a view to ensuring payment for the steel. Common ownership and management of the plant would also facilitate this process. These problems were complex and required further study by ECA.
13. The meeting considered that the setting up of an integrated iron and steel plant in West Africa should be regarded as part of a programme of establishing and sharing modern industries on a sub-regional and eventually an all-African basis.
14. The Executive Secretary was requested to carry out with the aid of expert consultants, as a matter of urgency, further studies as follows:
- (a) On the basis of information provided by Gabon, Ghana, Liberia and Nigeria, a comparative analysis of the prospective costs of production of integrated plants in these countries, assuming alternative capacities of 400,000 tons and 700,000 ingot tons;

- (b) Transport charges between plants located at the possible sites and the principal markets in West Africa;
- (c) Commercial arrangements for ensuring the maximum demand in West Africa countries for the products of the integrated plant, including the elements of a trading framework to ensure suitable exchanges in payment for the finished steel;
- (d) Possibilities of freight absorption in the pricing system;
- (e) Possible arrangements for joint financing, control and management of the integrated plant.
- (f) The possibility of setting up a second plant far from the coastal plant, within the framework of the programme of work on iron and steel already established by the ECA.

15. All governments in West Africa were requested to give the maximum aid to the Executive Secretary and his expert consultants in preparing these studies, with a view to their termination if possible within four months. The Executive Secretary was requested to convene a further meeting of experts towards the end of April, 1964, in Niamey, and the hope was expressed that all governments in West Africa would attend.

ANNEX I

LIST OF PARTICIPANTS

I. MEMBERS AND ASSOCIATE MEMBERS

Gabon	Mr. Wielezynski, Commissariat au Plan Libreville Mr. Nguema Ndong, Ingénieur, Libreville
Ghana	Mr. J.A. Pokoo-Aikins, First Secretary, Ghana Embassy, Monrovia Mr. Edoo Mr. Mensah
Liberia	Mr. J. Milton Weeks, Director General, National Planning Agency, Monrovia Mr. A. Momolu Massaquoi, Director, Bureau of Mines, Monrovia Mr. Burleigh M. Holder, Assistant Consultant Dept. of State, Monrovia Mr. J. Jellico Bright, Research Officer, (Industry), Monrovia Mr. J. Larnax Cox, Director, Labour Bureau Monrovia Dr. Dan Hartstein, Advisor, Monrovia
Mali	M. Robert N'Daw, Directeur général du Bureau minier du Mali, Bamako M. Louis Sangaré, Directeur du Plan, Bamako

Niger	Mr. Bonnier, Commissariat au Plan, Niamey
Nigeria	Mr. Wilh. Heuvels, Industrial Adviser Lagos  Mr. Damcida, I.M., Deputy Secretary (Industry) Federal Ministry of Commerce & Industry, Lagos  Mr. O. Ekechukwu, Industrial Chemist, Ministry of Commerce, Enugu
Senegal	M. Seydina-Issa Diop, Ingénieur, Dakar  M. Mouhamadou, Ingénieur géologique Direction des Mines, BP 1238, Dakar
Sierra Leone	Mr. David S. Fraser, Asst. Chief Inspector of Mines, Ministry of Lands & Labour, Freetown

## II. OBSERVERS

Austria	Mr. H. Eder, Mining Engineer, LINZ/D, Vienna  Mr. Klinar, Consultant, LINZ/D, Vienna
Federal Republic of Germany	Dr. D'Heil
Italy	Mr. G. Lucifora, Director of Engineering Iron and Steel Plants, Cosider S.P.A., Genova
Netherlands	Mr. A. Drijver, Managing Director, Beverwijk
U.S.A.	Mr. Walter F. Keville, Third Secretary, Economic Attaché, Accra, Ghana  Mr. Roderick G. Murchison, Regional Minerals' Attaché, Accra, Ghana
USSR	Mr. I. Bourtsev, Counsellor, USSR Embassy, Freetown
Yugoslavia	Mr. Jakubin Martin, Diplom. Economist, Sisak  Mr. Numic Hajrudin, Engineer-Counsellor, Sarajevo

### III. ECA SECRETARIAT

Mr. A. F. Ewing, Director, Division for Industry,  
Transport and Natural Resources

Mr. R. Howard-Goldsmith, Expert, Mineral  
Resources Development

Dr. A. H. Leckie, Consultant

Mr. A. E. Denis, Consultant

ANNEX II

STATEMENT MADE BY MR WILMOT A. DAVID, ACTING SECRETARY  
OF STATE, ON 14 OCTOBER 1963

A little over two years ago, the Government of Liberia was host to the first African Conference of Heads of States and Governments which convened here in Monrovia in May 1961. Today, after a series of meetings and an era of progress, all of the people of Africa now proudly boast of their own organization, the Organization of African Unity, which came into being in May of this year in Addis Ababa.

It was in June of last year that the Government of Liberia was again host to another very important African Conference, the first meeting of the Committee of Nine established by the United Economic Commission for Africa and charged with the responsibility of devising ways and means for establishing an African Development Bank. In August of this year, just about a year after the Committee of Nine first met in Monrovia, the representatives of all the African States met in Khartoum and signed the Charter formally establishing the African Development Bank.

Today you are here to convene the first meeting of Experts on Iron and Steel in West Africa. On behalf of the Government and people of Liberia, I heartily welcome you to our country as you are about to begin your deliberations on the possibilities of establishing an integrated iron and steel plant for West Africa. Like the two conferences mentioned above, this meeting is designed to lay the ground work on which to build a closer degree of economic co-operation among our countries. I have no doubt that the success you will achieve will be as spectacular as those already attained by us in the political and banking fields.

It is especially noteworthy that you have decided to approach the problem of an integrated iron and steel community on a sub-regional basis as a first step towards the gradual integration of the West African

Market into the frame work of the greater African Region.

That area north and west of the Congo, west and south of Lybia, Algeria and the Spanish Possession in West Africa, is composed of 18 countries whose economies, population and territories are not sufficiently strong enough to permit any of them to successfully combat the problem of a highly industrialized programme on an individual basis.

This situation arises as a result of a complex of factors principal among which are the strong economic blocs that exist in the world today. The industrialization and consolidation of the economic position of a country or a region in today's world is basically tied to the availability of World Markets.

Today, we see around us numerous examples of highly industrialized countries seeking to unite economically in an attempt to protect their markets and provide new markets for their expanding economies. Countries like the Soviet Union and the United States which are basically self-sufficient are engaged in sustained and determined efforts to find more available markets for the products of their industries. A recent example of this type of activity is the so-called "Chicken War" now going on between the United States and the European Common Market.

For us in Africa, if ever we are to develop an economy with any degree of independence, and in the parlance of everyday language, if ever we are to lift ourselves up by our boot straps, we must unite and work co-operatively. We must pool the resources we have, our natural resources and our manpower. We must produce goods which we can sell to each other. We must buy from each other. In short we must create an economic climate in which Inter-African Trade is not a possibility but the only possibility, feasible and sound from an economic point of view.

No true African needs to be convinced that he would be better off working co-operatively with his brother African. There is abundance of facts and figures which show that if we co-operate, we will be able to

undertake projects which cannot be undertaken on an individual basis. We will be able to undertake projects which can be accomplished more by undertaking projects together, which if they had to be undertaken on an individual basis would have to wait until some future time and possibly without achieving any appreciable result.

The sizes of our countries, area wise as well as in population, demand that we co-operate; our lack of financial resources requires us to do so; our need for adequate markets compels us to do so.

It is our duty to devise ways and means to combat this problem. We must find a way to counter the disadvantages we now face and use to our best interests the advantages that are favourable to us.

It has always been the view of the Government of Liberia that if we are to attain our cherished hope of making Africa an integrated unit, economic as well as political, our process of integration will have to be organic and well planned. It must be undertaken step by step and we must begin by co-operating in selected fields which lend themselves more readily to co-operation.

Distinguished delegates, the United Nations Economic Commission for Africa has constituted you as a Committee of Experts and charged you with the responsibility of studying the possibility of establishing an integrated iron and steel plant for the states constituting the sub-region of West Africa. In the next few days and at subsequent meetings, you are going to explore the feasibility of setting up such a plant; you will consider the possible location of the plant in relation to transportation facilities, raw materials that are required to feed the plant and the availability of trained persons to operate the plant. You are also going to study and determine what markets are available inside and outside Africa.

This is only one of the many problems in the economic complex which now faces us. Your task is a formidable one but I am confident that you are able to meet the challenge. This project holds in store immense benefits

for us as its success will open up to us vast new areas of co-operation which are closely tied to this particular project.

The Government and people of Liberia are indeed happy and honoured at your choice of our country to hold your first meeting. I want to emphasize in a most emphatic manner that my Government attaches the greatest importance to this meeting. The facilities of our country are at your disposal and we especially invite you to take time out from your deliberations to visit places of interest in Liberia. As you are concerned with iron and steel, it is hoped that you will be able to visit one of our iron ore mines. The ore you will see at this mine is of the highest quality. I need not tell you that it is the basic raw material used in the manufacture of iron and steel.

Your presence here is indicative of the keen sense of the responsibility which our several Governments have in this vital problem, not only for the peoples of our Continent but also for the peoples of the world in general.

In welcoming you again to Liberia, it is the fervent wish of my Government that your deliberations will be fruitful and that your every act will enhance the cause of African Unity as well as the progress and development of the world.

ANNEX III

STATEMENT MADE BY MR. A. F. EWING, REPRESENTATIVE OF THE  
EXECUTIVE SECRETARY OF ECA AND DIRECTOR  
OF THE DIVISION FOR INDUSTRY,  
TRANSPORT AND NATURAL RESOURCES

I should like, in the name of the Executive Secretary of the Economic Commission for Africa, to express our sincere thanks to the Government of Liberia for acting as hosts to this meeting.

The Secretary of State has rightly recalled other occasions when the Government of Liberia has acted as the starting point of an important African venture. Apart from the famous Monrovia Conference, which was one of the stepping stones to African unity, the Government of Liberia has played the same pioneering role in the work of ECA. The success of the Khartoum Conference establishing the African Development Bank was due in large measure to the work of the Committee of Nine, which started work in Liberia and was led by a distinguished Liberian. This particular meeting of experts could well be of major importance, not only from the point of view of iron and steel development but also in the whole process of industrialization of Africa.

The first meeting of the ECA Standing Committee on Industry and Natural Resources, held in Addis Ababa a year ago, stressed the importance of starting immediately modern strategic industries, as a vital necessity for a real industrialization programme. The Committee equally underlined that since these industries were necessarily of a certain minimum size, sub-regional co-operation was essential with modern industries deliberately designed to serve the markets of several countries. Iron and steel is a major example of this type of industry, since a certain minimum scale of

output is required. This meeting of experts may well be the starting point in a whole series of similar ventures designed not only to set up iron and steel-making on a sufficient scale in the major sub-regions of Africa but also a number of other key industries, shared out on an equitable basis.

The whole programme of work of ECA on industrialization is along these lines and hence we cannot overstress the significance of what we are starting this week.

We begin with the fact that iron ore is one of West Africa's richest natural resources. The time has come when this should be transformed into steel for use in Africa and not simply exported as raw material. There is no need to dwell on the role of iron and steel in the development of economy. It is universally recognized that without domestic production of iron and steel, the whole complex of engineering industries on which a modern economy depends cannot grow. Once this group of industries is established there is a multiplier effect and a steady stimulus to the whole process of economic growth.

The agenda of this meeting of experts - and in parentheses, I hope we shall be joined in the course of the day by a few more delegates who have been announced, together with our distinguished consultants who have played a large part in the preparation of the basic document before us - follows the lines of our document and provides for a systematic examination of the demand for iron and steel products, raw materials and fuel, factors governing the size and location of an integrated steel plant, technical matters, labour and transport. I need not dwell in this opening meeting on the content of the document, except that I would like to sound a warning that we should not be carried away by apparently attractive new small-scale processes which have not yet been commercially proved.

There is an item on the agenda on trade in iron and steel. It would seem inappropriate to try to go too far into trade problems, which are now being dealt with intensively by other ECA bodies. I would recall in this connexion the resolutions designed to move towards a Free Trade Area and eventually an African Common Market, passed at the fifth session of ECA and at the Summit Conference in Addis Ababa. One thing is clear, however, and that is that if we are to succeed in setting up a sizeable plant to serve a large part of the West African market, there must be free trade in iron and steel products, at least, between the participating countries.

This meeting is one of the earlier practical tests of the spirit of Addis Ababa, a test which was passed with flying colours in Khartoum when the decision was taken to establish the African Development Bank. We may hope the same spirit of mutual give and take prevails here. Successful discussion of these problems illustrates decisively the concept of political unity and economic common-sense joining hands.

May I once again express our sincere thanks to the Government of Liberia for making this meeting possible, and wish you every success.