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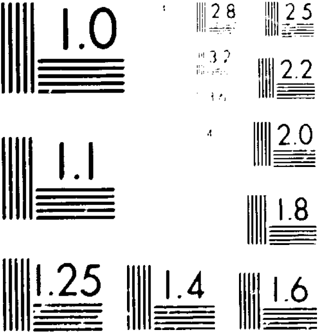


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Distr.
LIMITED

ID/WG.356/3
19 November 1981

United Nations Industrial Development Organization

ENGLISH
Original: FRENCH

Third Small Expert Group Meeting on Scenarios of the Iron and Steel Industry's Development

Vienna, Austria, 3-4 December 1981

# REPORT

## on the progress accomplished in the preparation of the "1990 scenarios for the iron and steel industry" *

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A. The work accomplished

1. It will be recalled that the recommendations of the Second Small Expert Group Meeting (12-13 March 1981) dealt essentially with: (a) the up-dating of information on the projects, (b) the need for a more in-depth analysis of project financing, (c) iron and steel industry markets which might be opened up by new energy sources, (d) the analysis in greater depth of the problems of manpower training, and (e) problems of technology and quality in developing countries.

For its part, the Bureau of the Small Expert Group (6-7 August 1981) drew the attention of the Secretariat to the need to study: (f) the promotion of new iron mine projects, and (g) the promotion of mini-steelmills.

2. In accordance with these recommendations, the Secretariat has undertaken the appropriate studies:

(a) Investment projects have been catalogued and analysed anew. This is an on-going effort necessary in order to monitor the evolution of the iron and steel industry.

Accordingly, chapter one of the "dossiers" has been completely reworked. It is available in French and will, as indeed all documents, be translated into English for the Working Group meeting scheduled for 3-4 February 1982.

The note annexed to this report summarizes the principal changes and recapitulates the characteristics of the projects by size, procedures and regions.

(b) The ananlysis of the financing of iron and steel projects has resulted in a study requiring the gathering of data on the 55 developing countries which have such projects and the establishment of certain indicators according to which these data can be interpreted. The importance of the information collected has led to its presentation in the form of a "special dossier" (in English). Following its discussion by the Small Working Group, this document might be incorporated in dossier No. 7, "Costs and financing" (UNIDO/IS.213, 9 March 1981).

(c) The study of the impact of new energy sources on iron and steel markets has also been the subject of a document presented as a "special dossier" (in French). This document has led to a change in the presentation of dossier No. 3, "Markets, product ranges and scale economies", but it does not appear that this special dossier on the relationship between energy and the steel markets has closed the debate. The dossier has therefore been proposed for discussion by the Small Group. On the basis of this discussion, this section of dossier No. 3 will be drafted in final form for examination by the Small Working Group.

(d) An examination of the problems of manpower training has been started. An oral statement on this subject will be made during the meeting of the Small Group, and a document will be submitted for discussion by the Working Group meeting in February 1982.

As this is a matter of exceptional importance, regarding which no comprehensive study appears to have been made, the analysis will be continued in 1982.

Certain preliminary modifications have been made to dossier No. 5, "Labour and the development of human resources".

(e) Dossier No. 4, "Technology and research", has been revised, and a preliminary analysis of the mass production of quality steel has been included in it.

(f) The subject of the supply of iron ore will be the subject of an additional note (in French) which will be distributed to the Small Working Group at the meeting on 3 and 4 December 1981.

(g) A special study on mini-steelmills, of particular interest to the African countries, has been started. However, dossier No. 3 has already been modified to place greater emphasis on the analysis of the subject of mini-steelmaking.

3. For the purpose of improving the quality of the work, the Secretariat has taken the following initiatives, which were not proposed in any explicit recommendations:

(a) It has appeared necessary to add to dossier No. 3 on markets an analysis permitting a distinction, as a minimum, between "long products" and "flat products." A complementary paper on the structure of international trade in iron and steel products from 1972 to 1977 has been prepared and transmitted to the Small Group (French version). A more detailed study has been launched to examine the possible consequences of an import substitution policy on exports by major steel product categories and in the light of the iron and steel projects of the developing countries. It is hoped that information pertaining to this analysis will be available in time for the February 1982 Working Group meeting.

(b) Recent trends in the steel production sector of the developing countries and the overtaking of certain of these countries by the economic recession which they had previously escaped prompt a continuation of the analysis contained in Part Two, "Proposals for the scenarios" (UNIDO/IS.213/Add.1, 11 March 1981), Chapter C, "Transitional economy? Structural crisis?" (pp. 22-35), and suggest that this analysis be transferred to Part One in the form of a dossier No. 8.

This new dossier might be entitled "Transitional economy and structural crisis: the impact of the restructuring of the Western steel industries".

The fact is that this restructuring appears to signal a significant trend which ought certainly to be taken into account more explicitly in preparing the scenarios.

(c) The up-dating of the projects has led to corrections being introduced in the resultant situations for the developing regions considered: countries of Africa south of the Sahara, North Africa and the Middle East, Latin America and Asia.

The new document which has been distributed to the Small Group (in French) supersedes the earlier analysis (pp. 64-75 of the "Proposals for the scenarios").

A variant to the normative scenario (variant $N_2$) has been developed, taking into account, on the one hand, the existing projects, and on the other, the hypothetical possibility of providing all countries having a population of more than three million inhabitants with a steelworks operating on the basis of a minimum capacity of 10 kg of steel (concrete reinforcing rods) per inhabitant. Country data sheets have been prepared to explain the options based on the various scenarios for the different projects.

B. Problems to be solved for the preparation of the scenarios

In order to complete the drafting of the scenario proposals, the Secretariat must find solutions to the following problems, all of which are reflected in the items proposed for discussion by the Small Group.

1. The formulation of scenarios with the participation of the interested parties implies a procedure based on successive approximations and continuing correction of data and results.

On the basis of the information available, it has been possible for the scenario surplus balance-sheets to be corrected on the supply side only; as will be evident, the main area of uncertainty remains that of demand. The completion of this work can be expected only in time for the plenary meeting of the Expert Group.

2. The financing analysis may, on the one hand, lead to a revision of performance estimates under the "crisis" and "trend" scenarios and to a more explicit description of the nature of the negotiations required to bring about the "normative" scenario; on the other hand, the decline in the income of the oil-exporting countries which certain forecasters predict beginning in 1985 needs to be taken into consideration.

The spreading of the recession in the iron and steel industry to regions which have so far been spared suggests the need for a simultaneous reduction in the estimated figures for demand and for projected production capacity. The interrelationships between long-term demand and the various project options must be more clearly stated.

One of the weaknesses of the attempt to quantify the scenarios (UNIDO/IS.213/Add.1, pp. 55 ff., "The iron and steel industry scenarios in order of magnitude") was the uniform application of macro-economic hypotheses regarding the growth of the steel industries of the developing countries. The Secretariat has received no information from the members of the Working Group of a kind that would enable it to call on other hypotheses. It would be useful therefore if this point were discussed by the Small Working Group.

One possibility regarding the normative scenario has been explored, namely the use of the results of UNIDO's LIDO model as a means of permitting, within the terms of the general hypotheses of growth, a regional pinpointing of steel industry growth rates. This information will, it is hoped, be available by the end of 1981.

At the present stage, information on supply is clearly more reliable than information on demand, so that it is mainly in the latter area that a major effort must be made to improve the data.

3. Another essential improvement which should be made involves an attempt to break down both projected production capacity and demand by major product categories (long, flat and special products). While on the supply side such a quantification appears altogether feasible, this kind of diversified accounting in the area of demand seems more difficult; however, from the point of view of international trading and future negotiations, a distinction of this kind seems justified by reason of the relatively segmented nature of the iron and steel markets. Moreover, it is essential if the evolution of the steel industries of the developing nations is to be brought into harmony with the restructuring now in progress in the steel industries of the Western countries with their emphasis on the upper quality range of steel products and comprehensive production rationalization.

It is suggested that the Working Group seek ways to overcome these difficulties.

4. There are major differences from one developing country to another with respect to the build-up of production at steelworks. In some cases it appears that the establishment of new production units is not resulting in a proportional increase in output and that there has been a decline in the utilization of installed capacity. The fact is, however, that the utilization of production capacity is a critical variable in the scenarios, with a major influence on the financing requirements. The facts which have been uncovered (during the work on training) strongly suggest that more importance should be given to this question that dossier No. 6, "The design and implementation of projects and the commissioning of new plants", should be strengthened, and that normative scenario $N_1$ should be further developed by optimizing the conditions for the scenario closest to the spirit of the Lima Declaration.

C. <u>On the development of scenarios for the Third Consultation on the Iron and Steel Industry: Some suggestions</u>

1. At the meeting of the Bureau of the Small Expert Group (6-7 August 1981) a number of negotiable items were selected. It will be recalled that an examination of the dossiers led to the identification of 28 so-called

"negotiation elements". Through the selection process, these elements were grouped into six areas: (a) costs and financing, (b) labour and the development of human resources, (c) technology and research, (d) raw materials and energy, (e) the new industrial arrangements, and (f) special action on behalf of the 40 countries which are newcomers to the steel industry

These negotiable items are clearly means of action and, at the same time, they represent the conditions under which the normative scenario, a scenario which assumes that the obstacles to the growth of steelmaking in the developing countries have been eliminated, becomes possible. Consequently, the concrete examination of these questions must either be incorporated into the "Proposals for the scenarios", of which they are an integral part, or else be taken up in a third part of the study dealing with "negotiation scenarios".

2. Specific work has already started on these negotiable items in the areas of financing and training; analytical studies are still required for the areas of technology and research, raw materials and energy, and, above all, with a view to the designing of new industrial arrangements.

In the interest of rapid progress in this work, it has been suggested that from among the 55 developing countries which have projects a representative sample of the principal kinds of situations encountered should be developed, and that detailed discussions should be started with the countries concerned following the plenary meeting of the Expert Group. The intention should be to pinpoint the problems in these countries and the nature of the negotiations required.

Similarly, the major industrial countries should make clear what possibilities for negotiations exist in the above-mentioned areas. This double enquiry should be completed by April 1982 in order that the results may eiether be incorporated into the actual scenarios or form a third part dealing with "negotiation proposals".

Through these measures, an added impetus would be given to the Third Consultation and an opportunity created for experimenting with another approach to the preparation of these meetings.

Annex

# REVISED PROJECTS AND PRODUCTION CAPACITIES FOR 1990

1. The list of projects contained in the annex to the study on the picture for 1985 has been brought up to date on the basis of available information. 1/

The expansion projects or new projects have been classified in three categories:

I. Project idea and prefeasibility study;

II. Projects under study and in the process of negotiation;

III. Projects under construction or at the immediate pre-construction stage (contract signed and financial arrangements concluded).

2. A total of 125 projects have been reviewed. These account for a total capacity of about 116 million equivalent tonnes of steel, of which some 58 million tonnes (or slightly more than 50 per cent of the total) fall under category III and approximately 58 million under categories II and I.

3. Of the 125 projects:

43 are mini-steelmill projects (less than 200,000 tonnes capacity), representing an aggregate capacity of about 4 million tonnes; 2/

30 are projects for units of from 200,000 to 500,000 tonnes capacity, representing a total capacity of about 11 million tonnes;

20 are projects for units of from 500,000 to 1 million tonnes capacity, representing a total capacity of about 16 million tonnes;

32 are projects for units of more than 1 million tonnes capacity, representing a total capacity of about 85 million tonnes (or some 70 per cent of the total capacity of the projects).

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1/ "L'image 1985 de l'industrie sidérurgique mondiale", UNIDO/ICIS.161/Rev.1, 16 July 1980.

2/ To this should be added four groups of mini-mills identified, respectively, in the Republic of Korea, another Asian country, Mexico, and Brazil, along with three projects of unspecified capacity.

4. Geographically, these projects are distributed as follows:

In Asia: 33 projects, including:

7 mini-steelmills;

9 projects of from 200,000 to 500,000 tonnes capacity;

6 projects of from 500,000 to 1 million tonnes capacity;

11 projects of more than 1 million tonnes capacity;
for a total capacity of about 42 million tonnes.

In Africa south of the Sahara: 21 projects, including:

15 mini-steelmills;

3 projects of from 200,000 to 500,000 tonnes capacity;

1 project of from 500,000 to 1 million tonnes capacity;

2 projects of more than 1 million tonnes capacity;
for a total capacity of about 9 million tonnes.

In North Africa and the Middle East: 28 projects, including:

12 mini-steelworks;

5 projects of from 200,000 to 500,000 tonnes capacity;

5 projects of from 500,000 to 1 million tonnes capacity;

6 projects of more than 1 million tonnes capacity;
for a total capacity of about 19 million tonnes.

In Latin America: 43 projects, including:

9 mini-steelworks;

13 projects of from 200,000 to 500,000 tonnes capacity;

8 projects of from 500,000 to 1 million tonnes capacity;

13 projects of more than 1 million tonnes capacity;
for a total capacity of about 45 million tonnes.

5. The total announced or estimated cost of all these projects comes to about $US 160 million, broken down as follows:

4.135 million dollars for the mini-steelworks; 3/

11.255 million dollars for the projects of from 200,000 to 500,000 tonnes;

20.840 million dollars for the projects of from 500,000 to 1 million tonnes;

and 123.175 million dollars for the units of more than 1 million tonnes capacity (or 77 per cent of the total amount).

6. The 125 projects are located in 55 countries, as follows:

12 in Asia;

14 in Africa south of the Sahara;

16 in North Africa and the Middle East;

13 in Latin America.

On the other hand, there are 50 developing countries for which no project is listed (9 in Asia, 23 in Africa south of the Sahara, 6 in North Africa and the Middle Eost, and 12 in Latin America).

3/ To this figure should be added $2,675,000 for the mini-steelwork projects in Mexico, Brazil, the Republic of Korea, and another Asian country.