



**TOGETHER**  
*for a sustainable future*

## OCCASION

This publication has been made available to the public on the occasion of the 50<sup>th</sup> anniversary of the United Nations Industrial Development Organisation.



**TOGETHER**  
*for a sustainable future*

## DISCLAIMER

This document has been produced without formal United Nations editing. The designations employed and the presentation of the material in this document do not imply the expression of any opinion whatsoever on the part of the Secretariat of the United Nations Industrial Development Organization (UNIDO) concerning the legal status of any country, territory, city or area or of its authorities, or concerning the delimitation of its frontiers or boundaries, or its economic system or degree of development. Designations such as “developed”, “industrialized” and “developing” are intended for statistical convenience and do not necessarily express a judgment about the stage reached by a particular country or area in the development process. Mention of firm names or commercial products does not constitute an endorsement by UNIDO.

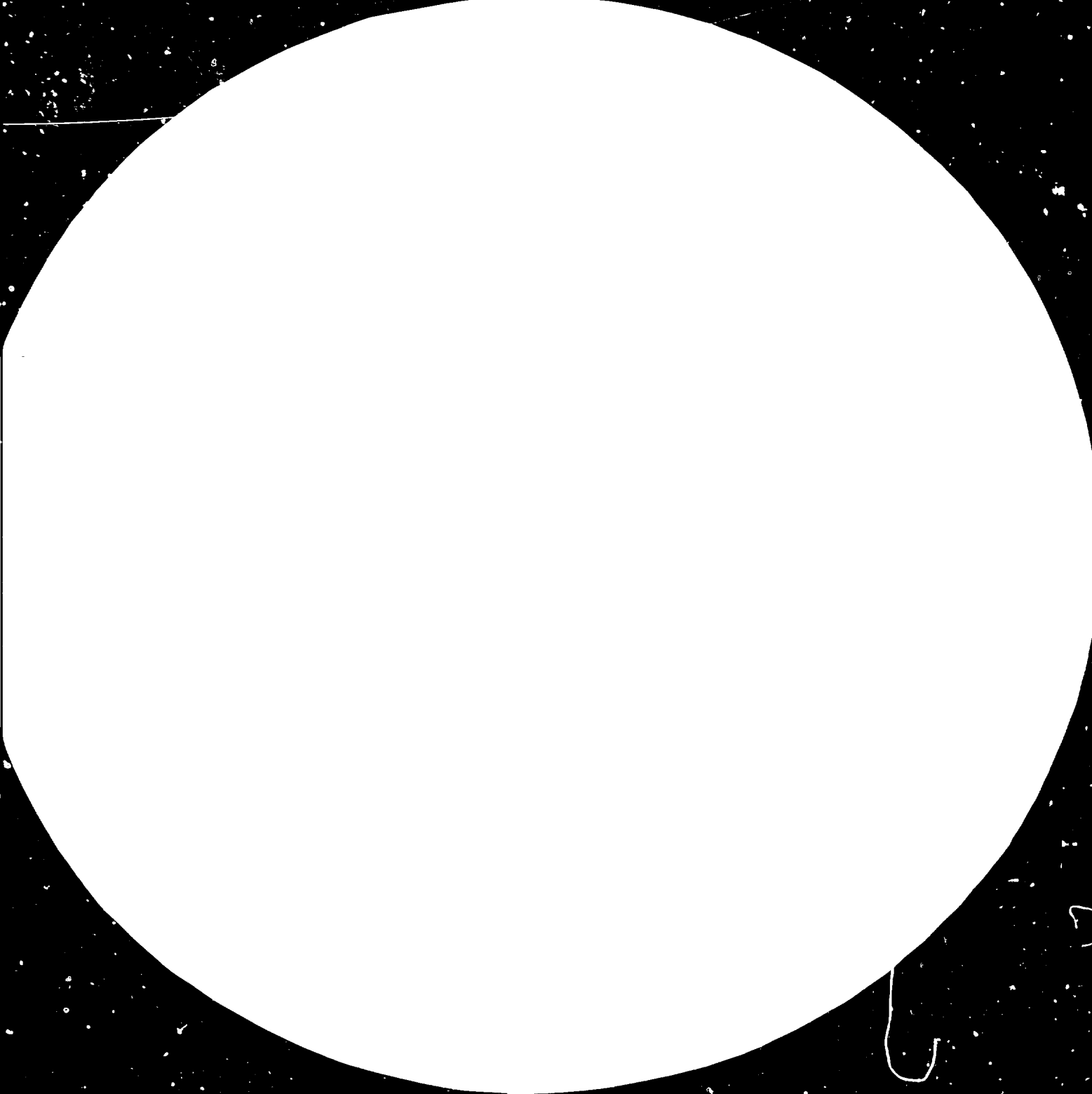
## FAIR USE POLICY

Any part of this publication may be quoted and referenced for educational and research purposes without additional permission from UNIDO. However, those who make use of quoting and referencing this publication are requested to follow the Fair Use Policy of giving due credit to UNIDO.

## CONTACT

Please contact [publications@unido.org](mailto:publications@unido.org) for further information concerning UNIDO publications.

For more information about UNIDO, please visit us at [www.unido.org](http://www.unido.org)





3.2



4



Wavelength (nm) 486.1 546.1 656.3

Resolution (cycles/mm) 1.0 1.5 2.0

Resolution (cycles/mm) 2.5 3.6 4.8

Resolution (cycles/mm) 6.3 9.0 12.0

10480

UNITED NATIONS  
INDUSTRIAL DEVELOPMENT ORGANIZATION

Distr.  
LIMITED  
UNIDO/PC.3  
13 April 1981  
English

---

SECOND SMALL EXPERT GROUP MEETING ON SCENARIOS  
OF THE IRON AND STEEL INDUSTRY'S DEVELOPMENT \*

Vienna, Austria, 12-13 March 1981

R E P O R T

000.3.

---

\* This document has been reproduced without formal editing.

V.81-24129

## INTRODUCTION

1. The Small Expert Group proposed by the Working Group Meeting on Scenarios which was held in Algiers (3-5 December 1979) met in Vienna from 12 to 13 March 1981 in order to provide guidance, correct and amend the further work of UNIDO Secretariat leading to the elaboration of the intermediate scenarios for the period up to 1990.

The meeting was attended by members of the Small Expert Group with the exception of Mr. W.B. Cramer and by other invited experts. Mr. Bentebal, Chairman of the Arab Iron and Steel Union (AISU) and Mr. A. Montaz of the AISU attended the meeting as observers.

### I. ORGANIZATION OF THE MEETING

#### Opening of the Meeting

2. The Second Small Expert Group Meeting was opened by the Chairman of the UNIDO Task Force on Basic Industries. The Chairman of the Group, Mr. R. Hocine (Algeria) and Co-Chairman, Mr. B. Rollinger (Federal Republic of Germany) took over the meeting.

3. The agenda proposed by the UNIDO Secretariat (Annex 1) was adopted.

### II. SUMMARY OF DISCUSSIONS

#### Consideration of the paper UNIDO/IS.213 "1990 Scenarios for the iron and steel industry - Part One - The Dossiers" and the paper UNIDO/IS.213 Add.1 "1990 Scenarios of the iron and steel industry - Part Two - Proposals for the Scenarios"

4. A member of the Secretariat introduced the papers in the context of the terms of reference adopted by the Small Expert Group at its first meeting (Vienna, 3-5 September 1980). He pointed out that the first document contains the seven "dossiers" which have been summarized in the form of the hypotheses of evolution, main problems and suggested objects of negotiations. The second document contains the proposed scenarios for 1990 which were formulated through coherent consolidation of various hypotheses of three different types: hypotheses of evolution specific to the iron and steel industry (extracted from "the dossiers"), macro-economic and socio-political hypotheses. As requested by the Small Expert Group, the scenarios were aimed primarily at outlining alternative futures for the iron and steel industry in developing countries.

5. A view was expressed that a joint venture represents an optimal form of partnership between developed and developing countries on the way to set up a new steel plant in a developing country.
6. Attention was drawn to the bilateral buy-back arrangements which helped developing countries to repay their debts in a convenient way. Those arrangements could be more universally applied.
7. Special arrangements should be made to facilitate financing of infrastructure related to the steel projects in developing countries. The problem should be considered further, together with other financial aspects of the iron and steel industry, at the forthcoming Global Preparatory Meeting on Industrial Financing (Vienna, 23-25 March 1981).
8. A view that in the period under consideration no technological breakthrough in steel production is feasible was not challenged. But it was pointed out by several speakers that smaller scale of steel production is possible owing to DR process, which is realized by modular units in order to accommodate the size of a plant to different requirements. It was also observed that different combinations involving oxygen convertors and continuous casting are applied. By 1990 probably four or five new processes might be available.
9. In the context of increasing importance of smaller plants an expert from CMEA country suggested that UNIDO could consider an elaboration of typical (standard) designs which subsequently could be used by a number of the developing countries.
10. A speaker from a developing country expressed a view that the authors of the discussed documents overemphasized the importance of special steels for developing countries in the decade 1980 - 1990.
11. An expert from a developed market economy country expressed an opinion that investments devoted to restructuring energy sources will have a limited impact on steel consumption in general. The impact might be more tangible as far as special steels are concerned.
12. The opinion expressed in the papers about feasibility of mass production of special steels was questioned because of limited market. On the other hand, it was noted that demand for special steels is growing fast. It was exemplified that the special steel producers abandoned small workshop technologies and moved towards mass production methods.
13. In reference to the notion of coastal plant a view was expressed that plants at deep rivers should be regarded as such. Furthermore, it was proposed to regard as coastal plants those having harbours capable to receive vessels 80,000 DWT or more.

14. Some doubts were expressed about necessary link between work groups and collective know-how and high productivity in the steel industry. As a decisive factor was regarded a technological approach based on elimination of all obstacles to productivity. This approach could be adopted both by groups and individual workers.

15. In view of the large scope of training needed for new plants it was proposed to exclude the training from a financial scheme of a project and to regard it as an independent programme.

16. A view was expressed that a crisis scenario should not suggest figures lower than existing capacities. On the other hand examples of cancellations and delays were quoted in order to justify validity of low level estimates envisaged for a case of crisis.

17. In the opinion of an expert from Latin America problems relating to raw materials and technology are not going to become significant obstacles for developing countries interested in an expansion of steel capacities. Financing for steel investments and infrastructure represent a main restrictive factor. Other experts insisted that priorities vary according to regions.

18. Steel industry's recession in developed market economy countries and its implications for developing countries should be more fully reflected in the documents.

19. It was stressed that a number of information on particular countries and projects should be reviewed and corrected.

20. An expert from a socialist country of Eastern Europe pointed out that in the coming decade steel production in CMEA countries is going to increase at a slower rate than earlier. The growth will be achieved rather through modernization of existing plants than through new projects.

#### AGREED CONCLUSIONS AND RECOMMENDATIONS

1. The Small Expert Group has congratulated UNIDO for the papers UNIDO/IS.213 "1990 Scenarios for the Iron and Steel Industry - Part One - The Dossiers" and UNIDO/IS.213/Add.1 "1990 Scenarios for the Iron and Steel Industry - Part Two - Proposals for the Scenarios", which in its opinion form a good basis for all future work and has reached the following conclusions:

- a) There is a general consensus concerning the methodology adopted by the authors of the papers.

- b) So far, three exploratory scenarios have been elaborated:
  - crisis scenario;
  - trend scenario; and
  - so-called "normative" scenario.
- c) One of the essential tasks given to the Secretariat of UNIDO was to develop a normative scenario based on the Lima target. This task still remains to be fulfilled.
- d) It was stressed that no new figures should be gathered in respect of steel making capacities by 1990 and the existing figures should be used. There was a suggestion to assume as a global figure about one billion tonnes subject to review by the Secretariat in the context of the existing forecasts.
- e) The general goal is to achieve the capacities envisaged by so-called "normative" scenario as a minimum.
- f) The main objective of the Small Expert Group as well as the Working Group as a whole is to propose complete operational solutions to secure the trend scenario and to achieve possibly the co-called "normative" scenario.
- g) There was a general agreement that the main problems as listed in the summaries of "The Dossiers" are relevant to all developing regions. But the intensities and priorities vary according to the regions.

2. The Small Expert Group has asked the Secretariat of UNIDO -

- to link the trend and normative scenario in a precise way to the summaries of the dossiers in order to show what actions have to be taken to meet specific scenario requirements;
- to define feasible and necessary objectives for negotiations leading towards obtaining results described in the normative scenario;
- to categorize the above objectives according to hierarchies of necessities suitable for particular geographical regions.

3. In order to guide further work of the Secretariat the Small Expert Group has made recommendations concerning methods and timing of work.

3.1 Methods:

- a) The members of the Small Expert Group and experts will make written comments, corrections and additional data to the list of projects and their evaluation;
- b) The members of the Small Expert Group and experts will study a paper dealing with problems enumerated in para 2 and prepare their comments;
- c) These comments will be taken into account at the elaboration of an up-dated paper to be presented by the Secretariat containing the final, well-defined objectives for negotiations. The paper should be proposed for consideration by the Bureau of this meeting and subsequently submitted to the large Working Group.



3.2 Timing:

- a) The members of the Small Working Group and experts are invited to send to UNIDO their comments, corrections and additional information on the list of projects before the end of April.
- b) The "dossiers" will be revised by the Secretariat before the end of June.
- c) The Bureau and the Secretariat will undertake jointly the selection of the negotiable elements which can realistically be envisaged (end of July).
- d) The members of the Small Expert Group after having contacted other Working Group members in regional groups are expected to send their comments concerning the projected regional demand, offer and other topics by the end of July.
- e) The Secretariat will examine the necessary conditions for the realization of a normative iron and steel scenario coherent with the Lima target, with respect to:
  - the negotiable elements selected jointly by the Bureau and the Secretariat
  - the regional forecasts of demand and supply
  - prospects of iron and steel industry of industrialized countries.

The final paper will be prepared by the Secretariat by the end of August for its consideration by the Bureau.

4. The Secretariat of UNIDO has been asked to further examine in detail:
  - i) an influence of the new energy developments on steel demand;
  - ii) the problem of best suitable methods of training for the steel industry in developing countries;
  - iii) the problems of technology and quality in respect to developing countries.

5. Referring to the forthcoming Global Preparatory Meeting on the Industrial Financing, the Small Expert Group asked the Secretariat -

- a) to establish a close connection between the work of the Global Preparatory Meeting and the Working Group on Steel Scenarios;
- b) to submit to the Global Preparatory Meeting suitable background documentation concerning the financing for the iron and steel industry;
- c) to involve an expert from the steel sector (which is advanced in the consultation process) in the activities on the industrial financing;
- d) to try to have the finance for steel industry regarded as a case study in consultation activities on the industrial financing.

6. Taking into consideration the problems of the countries - newcomers - the Small Expert Group has included into its scope of activities elaboration of the technical and economic criteria to be assessed in establishing a steel industry, including the exploitation of orefields, and expound the nature of the successive stages in the consideration of plans and projects (introductory note by the Secretariat - see Annex 2).

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

Vienna, Austria. 12-13 March 1981

AGENDA

1. Opening of the Meeting
2. Consideration of the paper UNIDO/IS.213 "1990 Scenarios for the Iron and Steel Industry - Part I - The Dossiers" and the paper UNIDO/IS.213/Add.1 "1990 Scenarios for the Iron and Steel Industry - Part II - Proposals for Scenarios".
3. Discussion on time-table and scope of the further activities of the Working Group.

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

Vienna, Austria, 12-13 March 1981

NOTE ON FURTHER ACTIVITIES OF THE WORKING GROUP ON SCENARIOS

The Second Consultation Meeting on the Iron and Steel Industry (New Delhi, 15-19 January 1979) recommended the UNIDO Secretariat to organize meetings between groups of developing countries that are working through their steel industry development programmes together with other interested developing countries in order to set out the technical and economic criteria to be assessed in establishing a steel industry, including the exploitation of orefields, and expound the nature of the successive stages in the consideration of plans and projects.

At the meeting of the UNIDO Task Force on the Iron and Steel Industry (25 June 1979) it was agreed upon that the elaboration of scenarios for the horizon 1990 and techno-economic criteria for establishing the steel industry in developing countries should be dealt with by the same Working Group. The experience of work of the Working Group has confirmed validity of the approach because further expansion of steel making capacities in developing countries envisaged in the scenarios will be influenced by countries - newcomers in the sector. Moreover, within the framework of consultation activities on the capital goods a significant contribution has been obtained, which is relevant to the work on the criteria.

For the present, when the work on scenarios has been advanced it seems worth-while to consider the following steps:

- 1) Prepare a paper on the technical and economic criteria taking into account the existing documents, supplemented by a new, up-to-date experts' evaluation;
- 2) Submit the paper to the members of the Small Expert Group for written criticism and suggestions; and
- 3) Submit a revised and improved version of the paper on criteria to the participants as well as the report on scenarios to the members of the Working Group before the plenary meeting of the group.

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

Vienna, Austria, 12-13 March 1981

LIST OF PARTICIPANTS

ALGERIA

Mr. Rezki HOCINE - Chairman  
Directeur General  
Société Nationale de Sidérurgie  
Le Paradou - HYDRA  
Alger

Mr. Mahieddine SAIDI  
Directeur  
Société Nationale de Sidérurgie  
Alger

BRAZIL

Mr. Fred Woods DE LACERDA  
Secretário Geral  
Instituto Brasileiro de Siderurgia  
Rua Araujo Porto Alegre, 36-7<sup>o</sup>  
Rio de Janeiro - RJ

CZECHOSLOVAKIA

Mr. Josef MIKSA  
Director, Department 601  
Federalni Ministerstvo Hutnictvia  
Tezkeho Strojirenstvi  
Na Frantisku 1039  
110 15 Praha 1

FRANCE

Mr. André SIGNORA  
Expert Economiste  
Chambre Syndicale de la Sidérurgie Française  
5 bis. rue de Madrid  
75008 Paris

GERMANY, Federal Republic of

Mr. Bernt ROLLINGER - Co-Chairman  
Manager  
Project Department  
KORF Stahl AG  
Postfach 508  
Moltkestrasse 15  
7570 Baden-Baden

INDIA

Mr. Minu Nariman DASTUR  
Chairman and Managing Director  
M.N. Dastur and Company  
P-17 Mission Row Extension  
Calcutta - 700 013

Other invited Experts

ALGERIA

Mr. BENTEBAL  
Chairman  
Arab Iron and Steel Union  
Alger

Mr. A. MOMTAZ  
Arab Iron and Steel Union  
Alger

AUSTRIA

Mr. G. MEINDL  
Voest-Alpine AG  
Linz

BRAZIL

Mr. L.F. SARCINELLI GARCIA  
Director  
SAGE Consultoria Tecnica Ltda  
Rua Mexico, 31 Conj. 304  
Rio De Janeiro

CZECHOSLOVAKIA

Mr. Z. BÖHM  
Federalni Ministerstvo Hutnictvia  
Tezkeho Strojirenstvi  
Na Frantisku 1039  
110 15 Praha 1

FRANCE

Mr. P. JUDET  
Institut de Recherche Economique et  
de Planification du Developpement  
Universite des Sciences Sociales de  
Grenoble  
38000 Grenoble

INDIA

Mr. S.N. ACHARYA  
C/o. UNIDO  
VIC D1839  
Post Box 300  
A-1400 Vienna

UNIDO Staff

Mr. D.A. Butaev - Chairman of the UNIDO Task Force on Basic Industries  
Mr. B.R. Nijhawan - Vice-Chairman of the Task Force  
Mr. I. Angelov  
Mr. P. Gonod  
Mr. Y. Grebtsov  
Mr. C. Gürkök  
Mr. C. Rakotondrainibe  
Mr. A. Wilk  
Mr. K. Yoshino  
Mr. K. Thadathilputhenpurayil - Secretariat

