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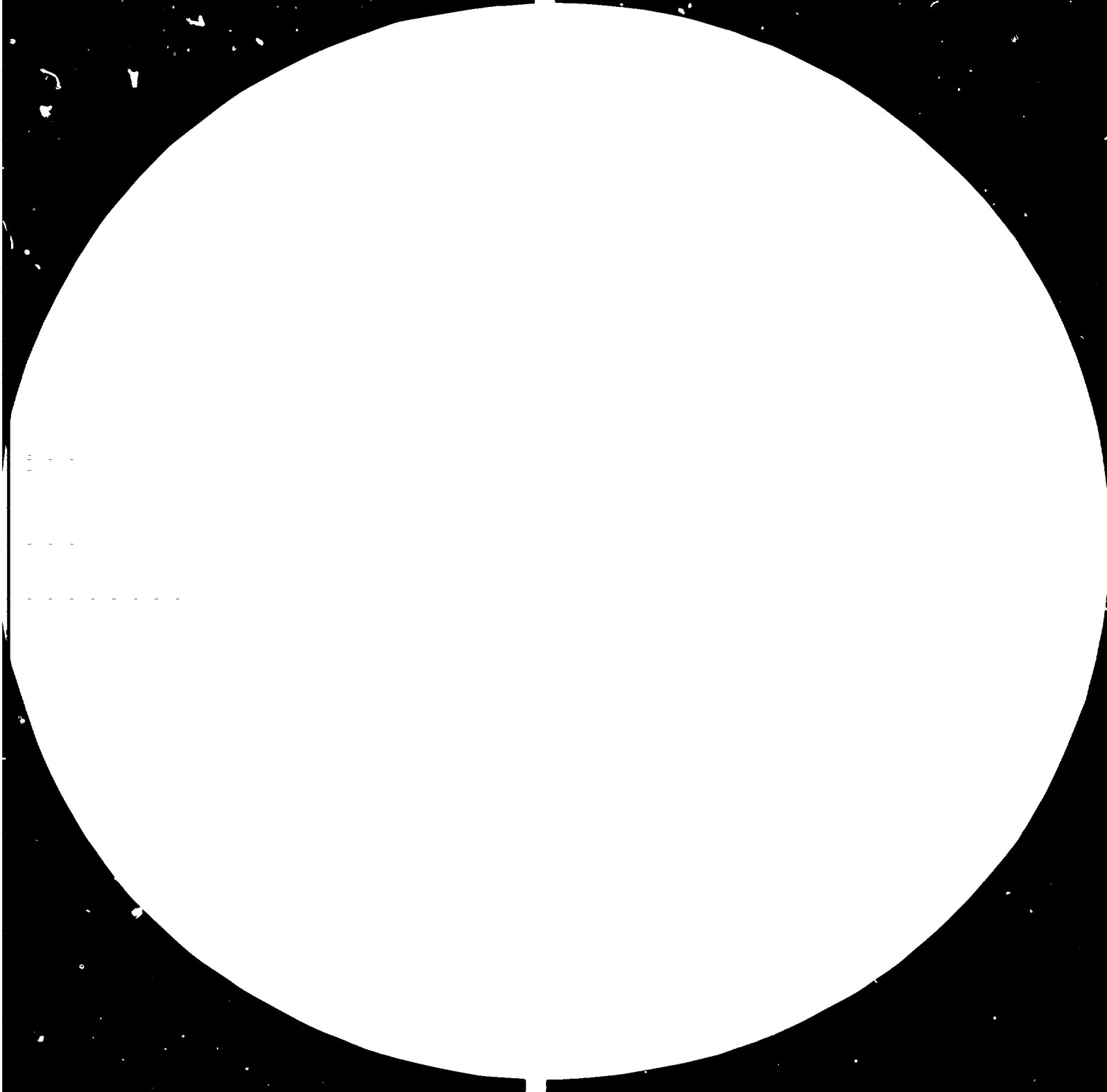
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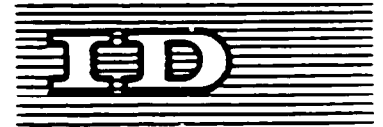


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First Meeting of the ad hoc Committee  
on Co-operation among Developing  
Countries in the Fertilizer Industry

Nairobi, Kenya, 11-13 March 1980

REPORT \*

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## INTRODUCTION

1. The Second Consultation on the Fertilizer Industry convened in Innsbruck, Austria, 6-10 November 1978, included in its agenda co-operation between developing countries in the fertilizer industry. The working group formed to examine this topic recommended a programme of action addressed to UNIDO.<sup>1/</sup>
  
2. The Working Group suggested that UNIDO should establish an ad hoc Committee with the following terms of reference:
  - (a) To co-ordinate the implementation of the programme recommended by the Working Group; <sup>2/</sup>
  
  - (b) To study in depth additional areas for co-operation between developing countries, not covered by the present report, and to recommend action.
  
3. The ad hoc Committee would initially be composed of representatives of the following: governmental institutions and regional and inter-regional associations, federations and fertilizer industry development centres. The membership might be increased later if necessary.
  
4. The Committee should make a report of its activities to the Third Consultation Meeting on the Fertilizer Industry.
  
5. At the invitation of the Government of Kenya, UNIDO convened the First Meeting of the ad hoc Committee on Co-operation among Developing Countries in the Fertilizer Industry in Nairobi, Kenya, from 11 to 13 March 1980. The Meeting was attended by 15 participants listed in Annex A.

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1/ See Report of the Meeting, paragraphs 78 to 88.

2/ A description of activities of the organizations and associations invited to the Meeting was provided in the main document of the Meeting: "Co-operation among Developing Countries: Suggestions of Participants received by the UNIDO Secretariat." (ID/WG.322/1)

## CONCLUSIONS AND RECOMMENDATIONS

6. Having reviewed the Programme of Action recommended by the Second Consultation and having considered additional areas of co-operation, the Committee felt that efforts should be concentrated on the following limited range of activities so that practical results can be achieved quickly:

- (a) Co-operation for the development of the fertilizer industry in Africa should be given first priority.
- (b) Co-operation should be extended to the Governments of African States and to the Inter-African Fertilizer Committee of the OAU:
  - (i) to develop, co-ordinate and implement national and sub-regional fertilizer industry development plans;
  - (ii) to establish and operate an African Fertilizer Development Centre;
  - (iii) to prepare for the creation of an African Association of Fertilizer Producers.
- (c) Request UNIDO to compile, up-date annually and circulate to all developing countries a "Catalogue of Technical Capabilities available in Developing Countries" which describes the specific areas in the development of the fertilizer industry in which developing countries have sufficient experience and technical competence to offer co-operation to other countries; the first issue should be completed by end-1980.
- (d) Request UNIDO to promote and finance ECDC project in the fertilizer industry requested by developing countries and to discuss with the Government of those developing countries which have an established fertilizer industry the contributions they might make;
- (e) Request UNIDO to prepare and distribute well in advance a comprehensive list of the technical seminars and training programmes organized in developing countries and to prepare detailed proposals covering the years 1981-1983 that would facilitate a much greater exchange of experience among developing countries
- (f) Request UNIDO to prepare for consideration of the Third Consultation on the Fertilizer Industry proposals for strengthening both technical and economic co-operation among developing countries taking into account:

- 3 -
- (i) the activities of existing national, regional and international associations of fertilizer producers in developing countries;
  - (ii) the formation of regional associations of fertilizer producers in Africa and Asia as recommended by the Committee;
  - (iii) the proposal that a Developing Countries' Association of Fertilizer Producers be formed.
- (g) Suggest that the Committee be converted into a Permanent Committee meeting annually, that the next meeting be held in 1981 and that in the interim period the Chairman and three Vice-Chairmen assist the UNIDO Secretariat in implementing the above programme.



## I. ORGANIZATION OF THE MEETING

### Opening of the Meeting

7. The First Meeting of the ad hoc Committee on Co-operation among Developing Countries in the Fertilizer Industry was opened on 11 March 1980 by Mr. F. Ondieki, Permanent Secretary, Ministry of Industry, Kenya.

### Officers of the Committee

8. The Meeting agreed that the Committee should invite the following persons to serve as Chairman and Vice-Chairmen for one and two-year terms respectively:

Chairman: Mr. Paul Pothan  
Director of the Fertilizer Association of  
India and Chairman of I.F.F.C.O., New Delhi

Vice-Chairman: Dr. Paul Addoh (Ghana)  
Assistant Executive Secretary of the STRC  
Organization for African Unity (OAU), Lagos

Vice-Chairman: Mr. Farouq Al-Mayouf  
Secretary General of the Arab  
Federation of Chemical Fertilizer  
Producers (AFCFP), Kuwait

Vice-Chairman: Mr. Marcos Rocha  
Director of Associacao Nacional para  
Difusao de Adubos (ANDA), Brazil

### Adoption of the Agenda

9. The ad hoc Committee adopted the following agenda:

- (i) Co-ordination of implementation of the action programme recommended by the Second Consultation Meeting;
- (ii) Additional areas for co-operation and action recommended;
- (iii) Mechanisms for implementing co-operation among developing countries in the fertilizer industry.

### Adoption of the Report

10. The report of the ad hoc Committee was adopted on 13 March 1980 for submission to the Third Consultation on the Fertilizer Industry to be convened in São Paulo, Brazil from 29 September to 3 October, 1980.

II. COORDINATION OF IMPLEMENTATION OF THE ACTION PROGRAMME  
RECOMMENDED BY THE SECOND CONSULTATION ON THE FERTILIZER  
INDUSTRY

11. The UNIDO Secretariat reported to the Committee that its efforts to obtain funds to implement the programme of action recommended by the Second Consultation had so far been unsuccessful. The Secretariat would, however, continue to try to implement the recommendations addressed to UNIDO, bearing in mind the views of the Committee and subject to the funds available.

12. Participants stressed the importance of UNIDO completing its compilation of information on the activities of national, regional and international federations or associations of fertilizer enterprises. Information on the activities of some of these bodies have been collected for the Committee. This work should be completed with a view to disseminating it before the Third Consultation.

13. It was suggested that a first meeting representatives of the associations recommended by the Second Consultation should be hosted by the Fertilizer Association of India from 2-3 December 1980. The meeting should be organized by UNIDO in co-operation with FAI. Participants should pay their own expenses. In subsequent years, other national or regional associations should act as hosts.

14. The participants considered the three recommendations of the Second Consultation related to workshops on technical management, training programmes for fertilizer plant's personnel and regional programmes to improve plant maintenance. Some progress had been made in this area. For example for the UNIDO in co-operation with AFCEP and IDCAS will implement a programme to improve fertilizer plant operations over the next three years that includes training workshops. The project cost is \$2 millions with a major contribution from UNDP. Another example was the IFDC programme which included training for middle level management for fertilizer industries in developing countries, particularly in the field of marketing fertilizers.

15. In addition, participants were informed of the programmes of management workshops organized by the Fertilizer Association of India, by ANDA in Brazil and by ADIFAL. FAO was arranging to provide some financial assistance to FAI

so that its workshops in the field of marketing fertilizers could include experts from outside India and a larger number of participants from other developing countries. Participants attending such courses were invited to combine their attendance with a short programme to visit one or two fertilizer plants.

16. Bearing in mind the above programmes, the Committee recommended that UNIDO should collect and publish a complete list of the training programmes organized for the fertilizer industry in developing countries. At the same time, UNIDO should clearly indicate the conditions under which it could sponsor the attendance of individual participants from developing countries at these training programmes. IFDC was urged to organize its training programmes at fertilizer plants located in developing countries.

17. UNIDO was further requested to prepare a programme of training courses for the period 1981-1983; priority should be given to two areas: (a) senior management, including the evaluation and financing of new projects; and (b) programmes for senior maintenance personnel concentrating on key items of equipment such as centrifugal compressors, boiler feed pumps, etc. Both programmes should be prepared on the basis of proposals to be drafted by FAI and ADIFAL.

18. Regarding another recommendation, UNIDO reported that it had received two requests for financing visits to inspect plants and other requests could easily be accommodated.

19. The Committee did not attach a priority to UNIDO examining the possibility of establishing a regional pool of common spares for fertilizer plants. It felt that standardization was difficult to achieve even at a national level.

20. The Committee agreed that national, regional and international federations, associations, development centres should be encouraged to provide UNIDO with technical information on important new developments in the fertilizer field with a view to its wider dissemination through UNIDO.

21. The Committee regretted that UNIDO had been unable to obtain funds to convene a technical seminar on recent developments in the technology of fertilizer production, as recommended by the Second Consultation. It suggested that the topics of most interest to the developing countries were advances in technology related to the following topics:

- a) Processing of low-grade phosphate rock;
- b) Improved technology to save energy in ammonia-urea manufacturing;
- c) Improved granulation techniques for urea, NPK compounds, etc;
- d) Fertilizer plants suitable for countries with a small market;
- e) Use of coal and other alternative feedstocks for ammonia production.

22. The Committee felt that UNIDO should prepare a programme of technical seminars for the period 1981-1983 covering these topics, taking into account the examination of these topics by other bodies and meetings. Bearing in mind the broad experience of China in the fertilizer industry, it was recommended that one technical seminar be convened in China.

23. The Committee also noted the importance for developing countries of new developments in:

- a) the fixation of nitrogen by plants;
- b) the rate of absorption of phosphates by the roots of plants.

### III. ADDITIONAL AREAS FOR COOPERATION BETWEEN DEVELOPING COUNTRIES AND ACTION RECOMMENDED

#### Co-operation with countries establishing their first fertilizer plant

24. The Committee considered a case study of the establishment of the first fertilizer plant in an African country. It concluded that (a) considerable preparations were needed before deciding what type of fertilizer plant to construct, and (b) more use could be made of the experience of other developing countries. In this connection, the Committee prepared a check-list of the steps required for developing a viable fertilizer industry, which might serve as a guide to countries wishing to establish a fertilizer industry for the first time, (Annex A).

25. The Committee suggested that where a suitable co-ordinating body does not exist, a "Fertilizer Authority", "Fertilizer Committee" or "Fertilizer Association" should be established to co-ordinate development of the fertilizer industry at the national level. It should be composed of:

- Government officials from the Ministries of Industry and Agriculture,
- Representatives of manufacturers, importers and exporters of fertilizers,
- Representatives of Agricultural and Scientific Research Institutions.

26. The Terms of Reference of such a body might be:

- To review current status of agricultural research in the country and to prepare projection of future agricultural production taking national development plans into consideration.
- To review current availability of raw materials for fertilizer production within the country, existing production capability and future plans for augmenting production.
- To act as a centre for collection of information relating to fertilizer use, production, raw materials, marketing and distribution.
- To prepare guidelines for improving infrastructure for the production and distribution of fertilizers and recommend who should be responsible.

- To examine the impact of Government policies with regard to prices of fertilizers and agricultural produce and subsidies and make recommendations.

27. The Committee felt that countries establishing a fertilizer plant for the first time should at an early date make arrangements for the training of local personnel in a similar fertilizer plant located in another developing country. Examples of such co-operation were quoted. It was suggested that although contractors were usually obliged to provide for training, the type of co-operation proposed (i.e. twinning arrangements) could be promoted and assisted by UNIDO

#### Additional areas of technical co-operation

28. The Committee considered additional areas of technical and economic co-operation which might be suggested. It identified the following areas of technical co-operation as being those most important to ensure that a viable fertilizer plant was constructed and operated successfully:

1. Estimating requirements for fertilizers and the product to be produced.
2. Developing the market for fertilizers in advance of completion of the plants.
3. Examining the suitability of local raw materials for fertilizer production
4. Preparation of a feasibility study for establishing a fertilizer industry
5. Arranging financing for the fertilizer
6. Selection of technology, equipment and process license.
7. Pre-qualification of contractors
8. Preparation of tenders and analysis of bids.
9. Preparation and negotiation of the contract.
10. Supervision of construction and technical advice
11. Training of a complete team to operate the plant
12. Development of a maintenance programme.
13. Trouble-shooting.

29. The Committee also felt that more use should be made of developing countries experience in the mining and beneficiation of fertilizer raw materials.

30. To facilitate such co-operation, the Committee recommended that a "Catalogue of Technical Capabilities of Developing Countries" should be compiled by UNIDO to show in which of the above areas each developing country was prepared to provide co-operation. It was further suggested that whenever possible a local firm of consultants in the country receiving co-operation should be involved in the work.

Additional areas of economic co-operation

31. The Committee noted that new fertilizer plants were being established with co-operation between countries at a sub-regional level (ASEAN countries) and with co-operation of one country in Africa and one country in Asia in another case. The Committee felt that more projects involving such types of co-operation should be developed, particularly in Africa. The Committee suggested that economic co-operation should be considered in more detail at the second meeting of the Committee.

#### IV. MECHANISMS FOR IMPLEMENTING CO-OPERATION AMONG DEVELOPING COUNTRIES IN THE FERTILIZER INDUSTRY

12. The Committee noted that whilst regional associations of fertilizer producers had been formed in the Arab States and in Latin America, there was no such association for African and Asian producers. The formation of such associations was recommended.

13. All participants indicated their willingness to co-operate with African countries either directly or through the Inter-African Fertilizer Committee of the OAU. In this connection, it suggested that this Committee might encourage and foster technical and economic co-operation with non-African States as well as between Member States of the OAU. It further suggested that this Committee might concentrate its efforts on:

- The collection, collation and dissemination of information on the demand for fertilizers and raw materials within Member States.
- The dissemination of information on the availability of fertilizers.
- The dissemination of information on the availability of technical expertise and know-how.
- Provide a forum for the exchange of technical information with a view to up-grading level of efficiency of the fertilizer industry.
- Serve as a central co-ordinating authority for fertilizers.
- Prepare proposals on behalf of the OAU Member States for specific forms of co-operation with UNIDO, FAO, World Bank, IFAD, IFDC and other interested international organizations, including the establishment of an African Fertilizer Development Centre.

14. The Committee considered briefly other ways of strengthening contacts and co-operation between developing countries. It requested UNIDO to prepare for consideration of the Third Consultation on the Fertilizer Industry proposals for strengthening both technical and economic co-operation among developing countries taking into account:

- (a) The activities of existing national, regional and international associations of fertilizer producers in developing countries:



- (ii) The formation of regional associations of fertilizer producers in Africa and Asia as recommended by the Committee:
- (iii) The proposal that a Developing Countries' Association of Fertilizer Producers be formed.

35. The Committee suggested that it be converted into a Permanent Committee meeting annually, that the next meeting be held in 1981, and that in the interim period the Chairman and three Vice-Chairmen assist the UNIDO Secretariat in implementing the above programme.

36. The Chairman and three Vice-Chairmen were elected with this purpose in mind.

STEPS REQUIRED FOR DEVELOPING A VIABLE  
FERTILIZER INDUSTRY

- A. Requirements for Establishing a Chemical Fertilizer Industry
1. A soil survey to determine the suitability of different soil types that will support cropping for given production localities.
  2. Meteorological data and irrigation requirements.
  3. Current developments and trend in Agriculture.
  4. Future development of crop types and how this will change over a given period of time.
  5. Long term Government plans based on population growth.
  6. Food balance sheet.
  7. Internal infrastructure that affect overall agricultural activities.
  8. List of research capabilities and their location.
  9. Historical development of fertilizer use.
  10. Present fertilizer use by crops, by areas.
  11. Detail description and limitations of the existing fertilizer marketing system.
  12. Fertilizer demand projections for different crops for the project periods by nutrients.
  13. Types of fertilizers required to fulfil demand projection.
  14. Appropriate packaging.
- B. Determination of the availability of local raw materials and resources that can be used in the fertilizer industry
1. Conducted geological survey to determine indigenous mineral resources.
  2. Possible development on organic fertilizer industry based on local resources.
  3. Complimentary industries relevant to fertilizer production.
  4. Socio-economic Study to determine acceptability of inorganic fertilizers.
- C. Determine a suitable fertilizer marketing system which will make fertilizer timely available to farmers efficiently
1. Determine pricing policy that may include either fertilizer subsidy or a crop produce.
  2. Analysis of the appropriate marketing margins and personnel incentives to effectively operate the marketing system.

3. Determine the promotional activities, i.e. formal and on the job training, advertising, demonstrations, field trials, farmer meetings and soil and crop testing.
- 
- D. Government Policy and actions required to support the development of a fertilizer industry
    1. Review existing governmental policies related to the fertilizer industry and recommend additional policies and actions to strengthen development of a fertilizer industry.
    2. Establishment of an Autonomous Monitoring Group to follow up on the required activities and to take necessary actions.
- 
- E. International Assistance
    1. To identify what can be done locally within a given country and areas for which international assistance may be requested.

ANNEX B

LIST OF PARTICIPANTS

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ANNEX CLIST OF DOCUMENTS AND  
CONFERENCE ROOM PAPERS

ID/WG. 322/1

Co-operation among Developing Countries in the Fertilizer Industry. Suggestions of Participants at the First Meeting of the ad hoc Committee on Co-operation among Developing Countries in the Fertilizer Industry, Nairobi, Kenya, 11-13 March 1980.

CRP/1

Opportunities for Co-operation among Developing Countries in the Fertilizer Industry: a Case Study of the Experience of Kenya, ITET Consultants Limited.

CRP/2

First Meeting of the ad hoc Committee on Co-operation among Developing Countries in the Fertilizer Industry, opening speech by F.N. Ondieki, Permanent Secretary, Ministry of Industry, Republic of Kenya.



