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Global Preparatory Meeting for the First African
Regional Consultation on the Phosphatic
Fertilizer and Pesticide Industry

Lomé (Togo), 3-6 February 1988

REPORT*

* This document is a translation of an unedited original.

Preface

1. The Second General Conference of the United Nations Industrial Development Organization (UNIDO), held at Lima, Peru, in March 1975, recommended that UNIDO should include among its activities a system of continuing consultations between developed and developing countries with the object of raising the developing countries' share in world industrial output through increased international co-operation. The General Assembly, at its seventh special session in September 1975, endorsed the recommendation and requested UNIDO to implement it under the guidance of the Industrial Development Board.

2. In May 1980, the Industrial Development Board decided to establish the System of Consultations on a permanent basis, and in May 1982 it adopted the rules of procedure (the System of Consultations, PI/84) according to which the System of Consultations was to operate, including its principles, objectives and characteristics, notably:

The System of Consultations shall be an instrument through which the United Nations Industrial Development Organization (UNIDO) is to serve as a forum for developed and developing countries in their contacts and consultations directed towards the industrialization of developing countries;

The System of Consultations would also permit negotiations among interested parties at their request, at the same time as or after consultations;

Participants of each member country should include officials of Governments as well as representatives of industry, labour, consumer groups and others, as deemed appropriate by each Government;

Each Consultation meeting shall formulate a report which shall include conclusions and recommendations agreed upon by consensus and also include other significant views expressed during the discussions.

3. Thirty-one Consultations have been convened since 1977 covering agricultural machinery, building materials, capital goods, fertilizers, food processing, industrial financing, iron and steel, petrochemicals, pharmaceuticals, leather and leather products, training of industrial manpower, vegetable oils and fats, and wood and wood products.

4. Through Consultations, "UNIDO has set up a forum for developed and developing countries dedicated to the industrialization of developing countries. This forum has served to identify obstacles to industrialization and has considered these obstacles from a policy, economic, financial, social and technical point of view. This forum has also been used to monitor trends in world industry, with the result that a number of action-oriented measures towards increasing the share of developing countries in world industrial production have been identified and in some cases implemented. These measures have included policy changes on the part of developed and developing countries, new forms of international industrial co-operation, new concepts for entry into specific industrial sectors; and in addition, technical assistance projects of an innovatory type have been identified and implemented by the relevant arms of the Secretariat." (ID/B/34).

5. The Industrial Development Board, at its second session in October 1986, decided to include the First African Regional Consultation on the Phosphatic Fertilizer and Pesticide Industry in the programme of Consultation meetings for the biennium 1988-1989.

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INTRODUCTION

Background to the Preparatory Meeting

6. The Convening of the Preparatory Meeting was in accordance with the recommendations of the Fourth General Conference of UNIDO, to the effect that special attention be given to co-operation between developing countries in Africa, and with the decisions taken at the second session of the Industrial Development Board (October 1986). In addition, the meeting is expected to contribute, in the African countries, to the development of the fertilizer industry, which plays a crucial part by improving agricultural productivity and thereby ensuring self-sufficiency in the production of foodstuffs.

7. Phosphates are of primary importance to the fertilizer sector. With regard to the production of phosphates and their transformation into fertilizers, the current situation reflects a number of major problems, affecting virtually every stage of those operations. At present, there are many known phosphate deposits. Yet, phosphate producers and exporters throughout the world have begun to encounter problems in their operation. Demand for products of a better quality has brought about new expectations as to phosphate enrichment, and the problems posed by energy consumption and environmental protection, which are confronting the industry, are also becoming increasingly acute.

8. Quite apart from those issues which are of concern to the experienced phosphate producers, there are phosphate deposits in other African countries which are by nature very difficult to work or whose development is hampered by other technical and economic constraints. The situation therefore calls for a broad exchange of experience on a wide variety of topics relating to the production of phosphate and the development of the phosphatic fertilizer industry.

9. Some African countries, including Morocco and Tunisia, are among the world's major producers of phosphates and have accordingly acquired invaluable experience in the mining, concentration and processing of phosphates. The phosphate industry provides those countries with one of their main export commodities.

Objectives of the Preparatory Meeting

10. - To exchange information on, and experience in, the planning, design, construction and operation of phosphate mines and phosphatic fertilizer plants in Africa;
- To identify the problems confronting the phosphate and phosphatic fertilizer industry and to examine possible solutions in the light of African regional co-operation;
- To encourage contacts with a view to co-operation on the basis of long-term arrangements covering joint ventures, technical assistance, the supply of raw materials and marketing;
- To identify in specific terms and in order of priority the key issues to be referred to the Regional Consultation on the Fertilizer Industry in Africa.

CONCLUSIONS AND RECOMMENDATIONS ADOPTED

Preamble

11. The conclusions and recommendations of the meeting specific to each topic on the agenda were formulated by subgroups of participants co-ordinated in each case by a chairman of a working session and were unanimously adopted during the last session.

12. Those taking part in the meeting stressed the vital need to develop and modernize the fertilizer industry in Africa, without which self-sufficiency in food production would be difficult to attain.

Conclusions

13. The major constraints in developing the use of fertilizers are primarily economic. Although many of the participants felt that in order to break the vicious circle of low agricultural productivity and low consumption of fertilizer it would first be necessary to enhance the purchasing power of the peasants, it was observed that stepping up the direct supply of fertilizer (grants, gifts) might also be a solution, if only a temporary one.

14. Be that as it may, it was unanimously recognized that the prime necessity was to clearly define an agricultural policy that encompassed all the components of agricultural development and which alone would make it possible to select a fertilizer strategy in each country.

15. If that policy, which was the responsibility of States, was to be correctly understood, the participants felt that there was need to rearrange all the information and data on the fertilizer sector (production, consumption, distribution, cost, agronomic data, etc. ...). The aim in view was to set up an African centre for information on fertilizers, modelled on FADINAP, the creation and success of which depended on the establishment and strengthening of the specialized units at State level and the regional organizations.

16. The other constraints in the development of the fertilizer industry in Africa were numerous and just as varied as the specific agricultural situations encountered on that continent. It was nevertheless realised that in numerous cases the insufficiency of the infrastructure made problems of logistics and distribution particularly acute. Another constraint normally encountered was that of financing, whether applied to existing industries or agricultural activities. Similarly, it seemed that there was need for agronomic and industrial technology research enabling local resources to be better developed and improved fertilizer efficiency to be attained, so that the organizations popularizing agricultural techniques could supply farmers with technological packages suited to the actual agricultural conditions.

17. Finally, an integrated approach to developing the fertilizer industry was the one that needed promoting, with its industrial, agricultural, commercial, financial, logistic and human (training and research) components within the States of the subregion and with multilateral and international co-operation.

Recommendations

18. The Preparatory Meeting for the African Regional Consultation on Phosphatic Fertilizers and Pesticides, recognizing the existence of serious constraints in the development of the fertilizer sector in Africa, adopted the following recommendations:

(a) Given that no lasting and effective solution to the problems of the fertilizer industry and the development of fertilizer application can be found unless an agricultural policy is clearly defined and applied, the governments of the countries of the African continent should accord the highest priority to the formulation and implementation of their national agricultural policy.

(b) Considering the importance of the wealth of information required to manage the fertilizer sector efficiently as well as the positive experience gained in other parts of the world, it is recommended that an African centre for information on fertilizers be set up as soon as possible and that national systems for amassing the information should be improved and upgraded.

(c) Considering that the choice of a fertilizer development strategy encompasses a large number of factors, it is recommended that the solution to the problems of the fertilizer industry in Africa should be tackled by decision-makers and sponsors of national and international funds within an integrated approach (industry, agriculture, trade, infrastructure, transport, finance, training and legislation).

(d) In view of the opportunities for complementarity existing between African countries, it is advisable to encourage and facilitate the establishment and development of co-operation between the African countries who have already acquired a certain skill in dealing with problems relating to the production and distribution of fertilizers (Tunisia, Algeria, Morocco, Senegal, ...) and other African countries wishing to develop their resources.

(e) In view of the high cost of engineering and its impact on the profitability of fertilizer plants and in order to allow for specific African features, the industrialized countries and the international organizations concerned are called upon to help with the development of national and/or regional engineering capabilities.

(f) In view of the desire of African countries to develop their resources and to have access to a fertilizer industry that is profitable and suited to their needs, it is advisable to promote a subregional and regional approach to industrial projects so as to provide them with a sounder basis.

(g) The meeting recommends that the competent multilateral organizations, such as UNIDO should support the mini-plant projects envisaged in certain countries until the stage of completion in order to test the feasibility of such projects. Similarly, the industrialized countries are called upon to lend financial and technical support for the design and construction of these plants when the conditions are satisfactory.

Priority subjects

19. Referring to the preparatory documents, papers and discussions of the meeting, the participants identified the following points as topics of priority that should be brought to the attention of the Regional Consultation:

(a) Formulation of an integrated approach necessary for developing the fertilizer sector in Africa;

(b) Definition of foreseeable ways of international co-operation for promoting the phosphatic fertilizer industry in Africa;

(c) In-depth analysis of the problems of financing phosphatic fertilizer projects and prospects for the future;

(d) Possibilities for establishing mini-plants for fertilizers in Africa;

(e) Possibilities for setting up an African centre for collecting and disseminating data on the fertilizer sector.

I. ORGANIZATION AND PROGRESS OF THE MEETING

20. The Preparatory Meeting for the Regional African Consultation on Phosphatic Fertilizers and Pesticides was held at Lomé (Togo) from 3 to 6 February 1988, in conjunction with the Togo Government (Ministry of Industry and State-owned Companies), which took care of the logistic side of the meeting.

21. The Meeting was attended by representatives from 15 countries, 10 of which were African (Algeria, Burkina Faso, Burundi, Cameroon, Morocco, Rwanda, Senegal, Togo, Zimbabwe and Zaire), two Asian countries (China and Indonesia), three European countries (France, FRG and Belgium), and from international organizations (UNDP, FAO, CEAO, Liptako-Gourma Authority, WADB, IFDC and IMPHOS).

22. After an address given by the UNDP Resident Representative, the Meeting was officially opened by Kadjila Labitoko, Private Secretary to the Minister of Industry and State-owned Companies.

23. In his speech, Mr. Oramane Ouattara, UNDP Resident Representative, said that Mr. Gérard Latorue, Director of the Consultations System at UNIDO and initiator of the Preparatory Meeting, who had been prevented for reasons beyond his control from coming to Lomé, had asked him to convey his sincere regrets to the Meeting and to wish all participants a fruitful exchange of ideas throughout their working days.

24. Mr. Ouattara pointed out that UNIDO attached great importance to the Meeting. The topics selected for the deliberations spoke for themselves. The vital importance of the fertilizer industry as a whole and also the phosphate industry for African countries no longer needed mentioning.

25. He expressed his conviction that one could rightly identify the continuing lack of food, the malnutrition of a growing population and the recurrent famines experienced by numerous countries on that continent as the causes of Africa's economic backwardness.

26. The Preparatory Meeting was being held in order to give special attention to African industrial sectors with a direct bearing on agriculture and co-operation between the African countries, in accordance with the recommendations made by the Second General Conference of UNIDO and by the African Memorandum of the Ministers of Industry on Industrial Development in Africa endorsed by that Conference. In addition, the Meeting was expected to contribute, in the African countries, to the development of the fertilizer industry, which played a crucial part by improving agricultural productivity and in the efforts deployed to ensure self-sufficiency in the production of foodstuffs.

27. Before ending, the UNDP Resident Representative thanked the Togolese authorities for the cordial welcome that the meeting had received in their capital. Thanks were also due to the French Government which in the form of a special contribution had made it possible to organize the Meeting despite UNIDO's budgetary constraints.

28. In his opening address, Mr. Labitoko said he was happy to see the unanimity existing on the priority given to agriculture and to the essential interaction between agriculture and industry for the purpose of development in Africa.

29. The use of fertilizers and pesticides for the improvement and harmonious development of agriculture, he continued, rightly counted among the topics for consideration in which there was global interest.

30. The catalytic role of those products in agricultural production and the complexity of the processes for their manufacture justified the choice of that subject for an in-depth study.

31. He then referred to the question of imbalance between the supply and consumption of fertilizer in Africa, which was a problem whose solution would involve a true evaluation of the supply, the demand and the requirements as well as a serious study of obstacles to the increased consumption of such products. As far as the overcapacity of the phosphatic fertilizer and pesticide production plants was concerned, he stressed the need for in-depth studies of the technology, design of the plants and the market.

32. In conclusion, he hoped that the Consultation System would encourage contacts and agreements between the African countries and the other developing countries.

33. Mr. Kossi Konou, Director of Industry and Handicrafts in Togo, was unanimously elected chairman of the first and last sessions: presentation of basic documents, and conclusions and recommendations and identification of the priority topics to be put before the Regional Consultation.

34. Mr. Braun, Head of the Fertilizer and Plant Nutrition Service (FAO), was unanimously elected chairman of the second session, during which the representatives of various countries and organizations presented papers.

35. Mr. Alain Derrien, Head of the Fertilizer Division at the Ministry of Industry (France), was unanimously elected chairman of the third session: identification of constraints in the development of fertilizer application and the emergence, maintaining and strengthening of an industrial production capacity, and joint study of the economic and technical aspects of the production and utilization of phosphatic fertilizers.

36. Mr. Khaled Boukhelifa, Deputy Director for Petrochemical Development at the Ministry of Energy and the Petrochemical Industry (Algeria), was unanimously elected chairman of the fourth session: the role of industrialized countries and multilateral organizations in developing the phosphatic fertilizer sector in Africa, and actual possibilities for a subregional and regional approach to industrial projects.

37. Mr. Philippe Ouedraogo, a mining engineer representing the Liptako-Gourma Authority for Regional Development, was unanimously elected chairman of the fifth session: situation and potentialities in the area of exchange of data, experience and information, and also mini-plants producing fertilizers.

38. The agenda was adopted by the Meeting (see annex II).

Technical visit

39. A technical visit to the buildings and installations of the Togolese Fertilizer Company near Lomé was organized for those attending the meeting.

II. SUMMARY OF DISCUSSIONS

The problems of the phosphatic fertilizer industry and the development of fertilizer application in Africa

40. A UNIDO official gave an account of the objectives of the Meeting, which were basically to help UNIDO to choose the issues to be submitted to the Regional Consultation on the Phosphatic Fertilizer and Pesticide Industry. He went on to clarify that it was a meeting of experts acting in a private capacity, whose opinion did not therefore commit either the body to which they belonged or their Government.

41. A UNIDO consultant then presented the Secretariat's basic document entitled "The problems of the phosphatic fertilizer industry and the development of fertilizer application in Africa". He stated that the fertilizer industry in Africa had had to face up to a seemingly paradoxical situation, in view of the following points:

- The strong demographic growth of the continent, which had recently undergone massive urbanization, was creating substantial food requirements which could be satisfied in the long run only by a significant increase in agricultural productivity, at present very low;
- The intensification required (a farmer had to feed 0.18 non-agricultural inhabitants in 1950 and would have to feed 1.20 of them by the year 2010); the essential diversification (satisfaction of the solvent urban demand) and the urgent protection of the environment (increase and maintaining of fertility) could not be satisfactorily solved without extensive recourse to fertilizers;
- Africa had major natural phosphate resources and a phosphatic fertilizer production capacity of 4×10^6 tons, but would hardly consume 0.8×10^6 tons in 1989/1990, whereas the evaluation of its potential needs was 5×10^6 tons.

42. A study of the deeper reasons for this situation and the experience of the past 25 years showed that it was above all the macro- and micro-economic constraints which were the determining factor, rather than the agricultural constraints or those linked with inadequate popularization of agriculture.

43. At the national level the four conditions for productive and profitable agricultural development for improving the present fertilizer consumption curve, i.e.:

- An agricultural policy clearly for the benefit of agriculture;
- A logistic, commercial and financial infrastructure suited to the rural sector;
- Agricultural prices which were remunerative for the farmers;
- Technological packages suited to actual conditions of production,

were rarely found together in Africa.

44. At the farm level, the motivating force for increased agricultural productivity, especially the use of fertilizers, was for the farmers the prospect of increased income and improved living standards, apart from an assurance of their own food supply.

This presupposes that they:

- Could acquire fertilizers suited to their needs (formulations, presentation) in good time and at low cost, thereby meeting the food requirements of a solvent urban population;
- Could utilize the gain in productivity due to fertilizers to increase food production (plant and animal food) meeting the needs of a growing urban population.

45. With this "ascending" approach to the problems of the fertilizer industry in Africa, which was based on a previous study of the actual demands of fertilizer consumers (farmers), the conclusion could be reached that the solution to the fertilizer industry problems should be sought in the multiplicity of the industrial systems of manufacturing the fertilizer which offered technologies, products and services of various dimensions and suited to the high diversity of African agricultural situations.

46. The solutions to be selected would be more valid within a subregional context because of the narrowness of the present national fertilizer markets and the needs in common with these subregions in the following fields:

- Organization of economic circuits and customs tariffs;
- Agronomic and technological research;
- Training for all the workers and managerial staff in the fertilizer branch.

47. If the farmers' real demands were to make themselves felt in the area of fertilizers, it would be highly desirable to encourage the professional organizations or producer groups and to establish direct contact at that level with the fertilizer distributors and middlemen since it was the latter who brought the real needs (quantity, formulations) of the farmers up to the level of industrial production.

48. So that the national and/or subregional decision-makers could make a reasonable choice between the different strategies for developing the fertilizer industry, it was strongly recommended that there should be progressively organized "fertilizer agencies" in which all the information required for decision-making could be gathered together.

49. International co-operation could usefully aid implementation of this integrated and multisectoral (agriculture, commerce, industry and finance) approach to development of the fertilizer industry and fertilizer application in Africa on the basis of its experience and its manpower (technical assistance) and financial resources that it was in a position to mobilize.

50. Such co-operation should, furthermore, provide food for thought on the ways in which to replace food assistance by development aid for the fertilizer industry that would not, in the short or long term, penalize either States or the various economic agencies in the fertilizer branch.

51. Another UNIDO representative then presented the Secretariat's second basic document entitled: "The problems of the development of phosphates and phosphatic fertilizers". In particular he stated the following:

- In face of the diversity of situations (resources, climate, soil, cultures, agricultural structures, geographical situation, etc.), there was no overall solution but rather there was a need for an adapted solution;
- There were four large families of phosphatic fertilizers:
 - Conventional fertilizers (soluble P_2O_5),
 - Thermal fertilizers,
 - Natural phosphate base fertilizers,
 - Partially soluble phosphate base fertilizers.

Prior to starting up fertilizer production one would have to examine whether one had control over the basic raw materials:

- Energy materials (manufacture of nitrogenous fertilizers);
- Materials containing the element sulphur;
- Phosphatic minerals;
- Potassic minerals,

and understand their characteristics (are they usable?).

- Produce them for what market (international, regional, local).

It was not easy to produce them and to sell them was still more difficult. One had to distinguish between a potential market and an actual, solvent market!

- The world fertilizer industry was right in the middle of a crisis and undergoing restructuring. The selling price of the manufactured products often had no connection with their cost price;
- The low prices applied were stifling the producers, but were still too high for the farmers in developing countries;
- The weight of the logistic costs had to be noted - it was often more than the price of the fertilizer itself.

Hence there was need:

- To find ways of providing agriculture with cheaper and more efficient fertilizers,

and to do so one had:

- To innovate by finding a production system totally adapted to the needs of the farmer;
- To offer at the same time simple, reliable, flexible and not very expensive technical solutions;
- To optimize without exception all stages of the operation (purchase, production, formulation, logistics, distribution, finances, assistance, etc.) on a permanent basis.

None of that could be envisaged unless:

- A national agricultural policy was clearly defined.

Identification of constraints in the development of fertilizer and on the emergence, maintaining and strengthening of an industrial production capacity

52. The constraints seem highly diversified on account of the very different situations encountered:

- Lack of income and motivation on the part of farmers. Difficulties in disposing of agricultural surpluses;
- Requirements for agricultural popularization and agronomic and technological research;

- Size of transport costs and other logistic expenditure;
- Lack of adequate financial resources;
- Multiple strategy options: in the form of aid for agricultural production, fertilizers and fertilizer production;
- Small volume of markets. Difficulties associated with the implementation of regional co-operation;
- Broad variety in the grade of the phosphate deposits;
- Financial profitability of the production plants as compared with imported fertilizers;
- Requirements for the transfer of technology and training;
- Requirements for a centralized information system on the fertilizer application sector.

Role of industrial countries and multilateral bodies in the development of the phosphatic fertilizer sector in Africa

53. Following presentation of the topic, the discussions gave rise to the following exchange of ideas:

Some of the representatives pointed out that the industrialized countries which had financial resources and technology should concern themselves with assisting the African countries to develop their natural phosphate resources; they should also let them join in the research underway on development processes and help them to train good managers able to supervise the processes and the production plants.

54. One representative stated that the developed countries should help the African countries to run the risks involved in putting new processes into effect.

55. One representative requested that South-South co-operation should be encouraged with countries such as Morocco and China, which had already had some experience in the field of fertilizers.

56. Another representative raised the question whether UNIDO could set up a regional network for undertaking an exchange of information on ways of implementing training programmes.

57. In reply to that question, it was pointed out that in Asia there was an organization playing that part - FADINAP - which had established a system for managing a data bank on fertilizers; in the case of Africa it was up to those concerned themselves to make their viewpoint known; it could be said, however, that FADINAP was a good example that could be adopted for Africa.

58. According to another representative, the role of the developed countries was not the most important thing; the main issue was that the African countries should define their needs precisely.

59. Another representative pointed out that transfer of technology was so expensive that it was often more economical to import a ready-made product; there was need for technology easily absorbable and less costly.

60. Some representatives stated that the infrastructures existing in Africa were often quite sufficient and that the problem was more the inadequacy of the engineering.
61. One representative pointed out that there were opportunities for complementarity between African countries in N,P,K fertilizers and that exchanges between African countries should be encouraged.
62. One representative stressed the fact that some fertilizer plants had been ruined by bad management; he hoped that the problem would be settled by privatization of the management, since the latter could even be a solution at the subregional level.
63. One representative indicated that the failure of certain production plants was often due essentially to defects in the initial design.
64. According to another representative, the most important issue was not the method of management (private or public) but the organization.
65. Another representative noted that the engineering companies were moving towards concentrated groupings, which was not necessarily the most practical solution to helping the African countries.
66. One representative stressed the logistic prerequisites which conditioned the development of the fertilizer industry; the industrialized countries would have to make their contribution at that level.
67. One representative pointed out that fertilizer projects were often not cost effective, but that other aspects, for example the social side, should also be taken into account.

Actual possibilities for a subregional and regional approach to industrial projects

68. Some representatives brought out that the problem of fertilizer plants was that of the narrowness of the market and that a subregional or even regional approach to industrial projects was necessary, provided it did not engender more complex logistic difficulties.
69. Another representative felt that the African countries had natural resources and that the developed countries with financial and technological means should show interest in facilitating the development of such resources in that subregion.
70. Another representative pointed out that it was national egoism that was slowing down the implementation of industrial projects at regional level.
71. Another representative pointed out that certain experience in the field encouraged cross collaboration between enterprises in different States and that the technological problems could be overcome within the context of association with the developed countries.
72. Some other representatives stated that in order to deal with national sensibilities one would have to identify, concurrently, other poles of development in domains other than phosphates so that each country could find its own advantage.
73. One representative pointed out that the problem of fertilizers fitted into the overall scheme of broader co-operation, the essential issue being that of the political will of the countries concerned.

74. One representative raised the question whether despite the difficulties involved in national egoism there might be a possibility of establishing information and data collecting points at subregional level which would make it possible to take decisions with full knowledge of the facts.

Present situation and future prospects for the exchange of data, experience and information in the fertilizer sector

75. The meeting first heard a report by Mr. Rein Coster, from IFCD-Africa, on the conditions for the setting up and operation of the FADINAP (Fertilizer Advisory Development and Information Network for Asia and the Pacific) Centre. He completed his report by describing the IFCD-Africa project under way for the establishment in Africa of an information network for amassing and centralizing data on the fertilizer trade and existing resources.

76. The representatives of IMPHOS (World Phosphate Institute), FAO and IFA (International Fertilizer Association) were then invited to describe the activities conducted by their organizations in the collection and circulation of data on fertilizers: IMPHOS was focusing its efforts mainly on agronomic research and all technical aspects of fertilizer utilization; FAO, which had helped to set up FADINAP, was backing fertilizer promotion projects in 12 African countries, circulated publications on fertilizer consumption in all countries of the world; IFA was collecting for its members information on the problems involved in distributing and marketing, but not on matters of price.

77. The participants deliberated on the problems associated with the credibility of statistical data in Africa, the large number of bodies concerned with fertilizer information, and the conditions for operation and management of the data bank planned by IFCD-Africa. The representative of the latter institution provided additional explanations.

78. In conclusion, the participants agreed on the value and importance of being able to have in Africa a centre responsible for centralizing and circulating information on resources, production, distribution, marketing and also projects for development of the resources available.

79. The participants called on UNIDO, FAO and other competent organizations to lend support to the African States in the study and effective creation of a centre of that kind, modelled on the experience of FADINAP, for which the objectives and modes of functioning would have to be decided jointly by the parties concerned.

Mini-fertilizer plants

80. A representative of UNIDO first described the conditions that this type of low-capacity plant would have to meet, using processes differing from those of the major industries and in a special technical and economic environment. He stressed in particular the need for such plants to use local resources, to minimize distribution costs through their establishment, to adapt to the needs of the environment, to maximize the local value added, to suit the existing market in size, to be easily and reliably operable, and to function with the minimum of risk, more particularly by pooling the purchase of raw material with a major producer. Observance of the rules of effective and flexible management geared to the trends in the users' needs was clearly fundamental.

81. After this introduction, the discussions dealt with the ways in which the mini-plant was a special category, the importance of management, the efficiency of public or private management, the size of the market to consider, and the level of cost in mini-plants.

82. Some participants drew attention to the risks involved in the increase of competing production units and the need to safeguard solidarity and complementarity in the production projects planned. It was also pointed out that the industrialized countries would need to share with the African countries the technological risks associated with mini-plants.

83. In conclusion, the meeting decided that the creation of mini-plants was one of the solutions to the problems of development in the landlocked countries possessing raw materials.

84. The construction of those mini-plants should be carried out under conditions ensuring their adaptation to the economic and technical environment and make it possible to provide fertilizer for users at competitive prices, while bearing in mind the need to strengthen the solidarity and complementarity of the African fertilizer producers.

III. CLOSING OF THE MEETING.

86. In his closing address, Mr. Oramana Ouattara, UNDP Resident Representative and Resident Co-ordinator for the operational activities of the United Nations in Togo, stated that the conclusions and recommendations of the meeting brought to light the quality of the work undertaken and the need to clearly define an agricultural policy covering all the components of agricultural development and which alone would make it possible to select a fertilizer strategy in each African country; he also expressed the wish that in view of the high priority accorded to that sector and unanimously recognized at the Meeting, programmes and projects relating to the production and utilization of fertilizers would receive a favourable welcome.

87. Mr. Gueye A. Kiffa (Senegal), in a motion of appreciation tabled on behalf of all the participants, expressed his gratitude to the UNIDO Secretariat for having organized the meeting and ensured that it progressed smoothly, and also conveyed his thanks to the people and the Government of Togo for having accorded the Meeting such a warm welcome at Lomé and having extended generous hospitality to the participants.

88. Mr. Kadjila Labitoko, Private Secretary to the Minister of Industry and State-owned companies, gave a formal closing address. Among other things, he noted that study of the high-quality documents of the UNIDO Secretariat and the papers presented by the representatives of the countries present and the international organizations had enabled the experts to put their finger on the real problems of Africa and the concerns of the international community. The depth of the study of the constraints on development, as well as the relevance and the quality of the statements made during the discussions, fully reflected the aspirations of the African peoples to self-sufficiency in food production. He concluded his speech by pointing out the urgent need for systematic exploitation of the real possibilities of a subregional and regional approach to industrial projects in Africa as well as potentialities for the exchange of information for promoting the production and utilization of phosphatic fertilizers and pesticides in Africa.

Annex I

LIST OF PARTICIPANTS

AFRICA

Algeria

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- P. Djato Kolani, Ingénieur technologue, Direction de l'industrie, B.P. 831, Lomé
- Y. Numadi, Chef, Section de la normalisation, Direction de l'industrie, B.P. 831, Lomé
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- A. K. Johnson, Docteur en géologie, Université du Bénin, EDS, B.P. 1515, Lomé
- A. Lawson, Docteur Ingénieur agronome, Ecole supérieure d'agronomie, B.P. 1515, Lomé
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INTERNATIONAL ORGANIZATIONS

West African Development Bank (WADB)

- K.R. Aka, Ingénieur industriel, B.P. 1172, Lomé, Togo
- C. Talabe, Ingénieur du génie rural, B.P. 1172, Lomé

West African Economic Community (CEAO)

- M. Kane, responsable de division, B.P. 643, Ouagadougou, Burkina Faso

Food and Agriculture Organization (FAO)

- H. Braun, Chef du service des engrais et de la nutrition des plantes,
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International Fertilizer Industry Association (IFA)

- Pierre L. Louis, Executive Secretary, Production and International Trade,
Rue Marbeuf 28, 75008 Paris

International Fertilizer Development Centre - Africa (IFDC)

- P.L. Vlek, Director, B.P. 4483 Lomé
- T. Frederick, Co-ordinator, engineering and training, B.P. 4483, Lomé
- Rein Coster, Market analyst, 4483, Lomé, Togo

World Phosphate Institute (IMPHOS)

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UNDP

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UNIDO

M. Abtahi, Industrial Development Specialist, UNIDO, Vienna, Austria

D. E. Ghozali, SIDFA/UNIDO, B.P. 911, Lomé

Annex II

AGENDA

1. Opening of the meeting
2. Election of chairman and adoption of agenda
3. Submission of the basic documents on issues for possible examination by the African Regional Consultation on the Phosphatic Fertilizer and Pesticide Industry
4. Reports by representatives of the countries and various organizations
5. Consideration of the principal topics
 - Identification of constraints in the development of fertilizer application and the emergence, maintaining and strengthening of an industrial production capacity;
 - Joint consideration of economic and technical aspects of the production and utilization of phosphatic fertilizers;
 - The role of industrialized countries and multilateral organizations in the development of the phosphatic fertilizer sector in Africa;
 - Actual possibilities for a subregional or regional approach to industrial projects;
 - Situation and potentialities in the field of data, experience and information exchange;
 - The fertilizer mini-plants
6. Conclusions and recommendations and identification of priority topics to be submitted to the Regional Consultation
7. Examination and adoption of the report of the Meeting
8. Closing session

Annex III

LIST OF PAPERS PRESENTED

Simen Pierre:	Situation in Cameroon with regard to phosphates and phosphatic fertilizers
Ndorimana Benoît:	Memorandum on the situation regarding the Burundi phosphate project
Masozera Wa Runiga:	Situation regarding phosphates in Lower Zaire
Kabore Grégoire:	Account of the situation regarding phosphates and phosphatic fertilizers in Burkina Faso
Ouali Djellali:	Report on the situation regarding fertilizer and phosphate in Algeria
Sri Ambar Suryosurnarko:	Phosphatic fertilizers in Indonesia
Mo Shukan:	The demand and production of phosphate fertilizer in China
Binsack Rudolf:	The use of rock phosphate in West Africa: Lessons learned from some technical co-operation projects
Vlek Paul L.G. and M. Terry Frederick:	Phosphate and phosphatic fertilizer industry development in Africa
Braun Hans:	Mineral fertilizers in Africa: Agronomic and economic problems affecting their production in the region. Report on the production of phosphates and derived products
El Bouanani Ahmed:	FERTIMA, a subsidiary of the Groupe Office Chérifien for Moroccan phosphates: distribution of phosphatic fertilizers in Morocco.
Ghazi Mohamed:	Groupe Office Chérifien for Moroccan phosphates: account of the production of phosphates and derived products.
Ouedraogo Philippe:	Present status of the demand and prospects for regional production of phosphatic fertilizers in the countries of the Liptako-Gourma Authority for Regional Development.
Besnard Maurice:	The Humifert process
Makonese Eban	Current situation and future prospects of phosphatic fertilizers in Zimbabwe with potential for the promotion of African industry through various schemes
Gueye A. Kiffa	Commercial situation and prospects for sale of fertilizers by SENCHIM (ICS) (Problem of regional and subregional solidarity)