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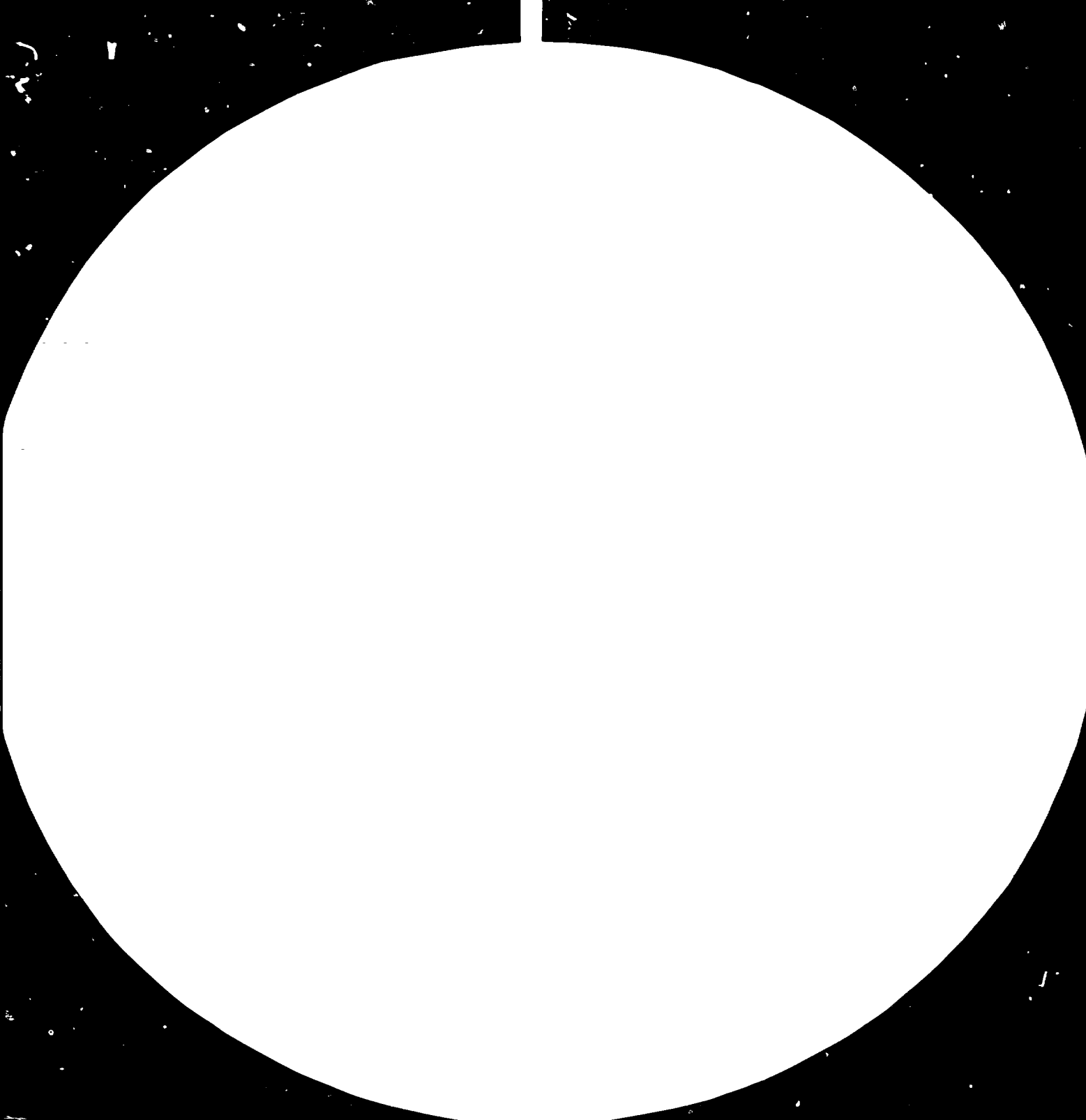
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Resolution Test Chart
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United Nations Industrial Development Organization

Third Consultation on the Fertilizer Industry
São Paulo, Brazil, 29 September - 4 October 1980

Agenda Item 3

PROGRESS REPORT ON ACTIONS
RECOMMENDED BY
THE SECOND CONSULTATION *

by

the UNIDO Secretariat

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CONTENTS

	<u>Page</u>
I. FOLLOW-UP ACTION RECOMMENDED BY THE SECOND CONSULTATION	1
II. UNIDO MODEL FORMS OF CONTRACT FOR THE CONSTRUCTION OF A FERTILIZER PLANT	2
III. ESTABLISHING A MULTILATERAL INSURANCE SCHEME PROVIDING ADEQUATE COVERAGE FOR CONSEQUENTIAL LOSSES INCURRED BY FERTILIZERS AND OTHER INDUSTRIAL PLANTS	5
IV. THE COST OF NEW FERTILIZER PROJECTS AND HOW THEY MIGHT BE REDUCED	7
V. MONITORING WORLD DEMAND FOR AND SUPPLY OF FERTILIZERS	10
VI. PROGRAMME TO STRENGTHEN CO-OPERATION BETWEEN DEVELOPING COUNTRIES IN THE FERTILIZER INDUSTRY	16
VII. UP-DATING THE UNIDO WORLD-WIDE STUDY, INCLUDING THE INDUSTRIAL PREPARATION OF ORGANIC FERTILIZERS	17
VIII. DEVELOPMENT OF THE FERTILIZER INDUSTRY IN LEAST-DEVELOPED COUNTRIES	18

CHARTS

A. Division of Responsibility in the UNIDO Model Forms of Contract for Fertilizer Plants	3
B. Trends in Fertilizer Prices October 1978 to April 1980	9

TABLES

I. Working Group Forecasts of World Supply and Demand Balance for Fertilizer as at June 1978, June 1979 and June 1980	12
II. Growth of Fertilizer Production Capacity 1977-80 and forecast 1980-85	13
III. Growth in Fertilizer Production Capacity forecast by Joint Working Group as at June 1978 and June 1980	14

ANNEX

A. Conclusions and Recommendations of the First Meeting of the Ad Hoc Committee on Co-operation amongst Developing Countries in the Fertilizer Industry	19-20
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I. FOLLOW-UP ACTION RECOMMENDED BY THE SECOND CONSULTATION

1. The Second Consultation recommended the following follow-up action with a view to presenting the results of the work to the Third Consultation:

- (a) UNIDO should complete and present final drafts of the UNIDO Model Forms of Cost Reimbursable and Turn-Key Lump-Sum Contracts for the Construction of a Fertilizer Plant; and continue work on the Semi-Turn-Key and Engineering Services forms of contract (para.96)^{1/};
- (b) UNIDO should collect additional information on the amount and causes of consequential losses in fertilizer plants and, on the basis of that information, continue to examine with contractors, insurers, Governments and other interested parties, how appropriate solutions to the problem might be reached; (para.21)
- (c) UNIDO should continue to examine ways in which the cost of new fertilizer projects might be reduced and the projects made more viable; (para. 31)
- (d) The UNIDO/FAO/IBRD Working Group should continue to monitor the growth of fertilizer production capacity in the world, consider how information at the country level could be improved, and submit an up-dated report; the Group should also examine ways to increase fertilizer consumption and report on the progress made; (paras. 31, 63)
- (e) UNIDO should initiate and support a programme to strengthen co-operation between developing countries in the fertilizer industry; an ad hoc Committee should be established to coordinate implementation of the programme and report on the progress made; (para. 44)
- (f) UNIDO should continue to study the fertilizer industry with a view to up-dating the Second World-Wide Study as required; in co-operation with FAO, UNIDO should prepare a study on the industrial aspects of the preparation of organic fertilizers; (para. 60)
- (g) UNIDO should give special attention to the requirements of least developed countries in establishing a fertilizer industry. (para. 61)

2. The purpose of the Progress Report is to describe the action taken to implement these recommendations of the Second Consultation.

^{1/} Paragraph numbers refer to the Report of the Second Consultation on the Fertilizer Industry, Innsbruck, Austria, 6-10 November 1978 (ID/221).

II. UNIDO MODEL FORMS OF CONTRACT FOR THE CONSTRUCTION OF A FERTILIZER PLANT

3. For the Second Consultation, UNIDO prepared a first draft of the UNIDO model form of Cost Reimbursable contract. It also presented draft forms of four other types of contract used for the construction of a fertilizer plant, namely:

- (a) Turn-Key Lump-Sum;
- (b) Semi-Turn-Key;
- (c) Supply of Know-how and Engineering Services;
- (d) Supply of Engineering Services for a set of duplicate plants.

The responsibilities of the Purchaser and the Contractor are different in each form of contract. They are summarized in Chart A.

4. Following the recommendations of the Second Consultation, UNIDO took the following action with regard to the model forms of Cost Reimbursable contract and Turn-Key contract:

- (a) Written comments were invited on the forms of contract presented to the Second Consultation; all comments were received April 1979;
- (b) Revised drafts^{1/} were prepared for consideration by an Expert Group Meeting in November 1979 in which contractors and purchasers from developed and developing countries participated;
- (c) Taking into account comments which were made at this meeting,^{2/} a new draft was prepared for circulation to all Governments and for presentation to the Third Consultation;^{3/}
- (d) Written comments on these drafts were requested by UNIDO from contractors; they were received at the end of April 1980 and are being reproduced as documents for the Consultation.^{4/}

^{1/} Second draft of the UNIDO Model Form of Cost Reimbursable Contract, ID/WG.306/1. First draft of the UNIDO Model Form of Turn-Key Lump-Sum Contract, ID/WG.306/2.

^{2/} See Report of the Expert Group Meeting on UNIDO Model Forms of Fertilizer Contract for Fertilizer Plants, 26-30 November 1979, ID/WG.306/4

^{3/} Third draft of the UNIDO Model Form of Cost Reimbursable Contract, ID/WG.318/3 plus Technical Annexures, Add.1. Second draft of the UNIDO Model Form of Turn-Key Lump-Sum Contract, ID/WG.318/4 plus Technical Annexures, Add 1.

^{4/} Comments of contractors on the Turn-Key Lump-Sum Contract, ID/WG.318/4. Comments of contractors on the Cost Reimbursable Contract, ID/WG.318/5.

Chart A: DIVISION OF RESPONSIBILITY IN THE UNIDO
MODEL FORMS OF CONTRACT FOR FERTILIZER PLANTS

	LICENSING CONTRACT	CONTRACTOR & PURCHASER CONTRACT	SEMI-TURNKEY CONTRACT	TURNKEY CONTRACT
LICENSES	[Pattern: Contractor]	[Pattern: Contractor & Purchaser]	[Pattern: Contractor & Purchaser]	[Pattern: Contractor & Purchaser]
KNOW HOW AND BASIC ENGINEERING	[Pattern: Contractor]	[Pattern: Contractor & Purchaser]	[Pattern: Contractor & Purchaser]	[Pattern: Contractor & Purchaser]
DETAILED ENGINEERING	[Pattern: Contractor]	[Pattern: Contractor & Purchaser]	[Pattern: Contractor & Purchaser]	[Pattern: Contractor & Purchaser]
CHECKING DETAILED ENGINEERING	[Pattern: Contractor]	[Pattern: Contractor & Purchaser]	[Pattern: Contractor & Purchaser]	[Pattern: Contractor & Purchaser]
PROCUREMENT OF EQUIPMENT	[Pattern: Contractor]	[Pattern: Contractor & Purchaser]	[Pattern: Contractor & Purchaser]	[Pattern: Contractor & Purchaser]
INSPECTION OF EQUIPMENT	[Pattern: Contractor]	[Pattern: Contractor & Purchaser]	[Pattern: Contractor & Purchaser]	[Pattern: Contractor & Purchaser]
SUPPLY OF EQUIPMENT	[Pattern: Contractor]	[Pattern: Contractor & Purchaser]	[Pattern: Contractor & Purchaser]	[Pattern: Contractor & Purchaser]
DESIGN OF CIVIL ENGINEERING	[Pattern: Contractor]	[Pattern: Contractor & Purchaser]	[Pattern: Contractor & Purchaser]	[Pattern: Contractor & Purchaser]
CIVIL ENGINEERING WORKS	[Pattern: Contractor]	[Pattern: Contractor & Purchaser]	[Pattern: Contractor & Purchaser]	[Pattern: Contractor & Purchaser]
ERECTION OF PLANT	[Pattern: Contractor]	[Pattern: Contractor & Purchaser]	[Pattern: Contractor & Purchaser]	[Pattern: Contractor & Purchaser]
MECHANICAL TESTING START-UP AND COMMISSIONING	[Pattern: Contractor]	[Pattern: Contractor & Purchaser]	[Pattern: Contractor & Purchaser]	[Pattern: Contractor & Purchaser]
GUARANTEE TEST DEMONSTRATION	[Pattern: Contractor]	[Pattern: Contractor & Purchaser]	[Pattern: Contractor & Purchaser]	[Pattern: Contractor & Purchaser]
MECHANICAL WARRANTIES	[Pattern: Contractor]	[Pattern: Contractor & Purchaser]	[Pattern: Contractor & Purchaser]	[Pattern: Contractor & Purchaser]

CONTRACTOR	[Pattern: Contractor]	CONTRACTOR & PURCHASER (SEPARATELY)	[Pattern: Contractor & Purchaser]
PURCHASER	[Pattern: Purchaser]	VENDORS SELECTED BY PURCHASER & CONTRACTOR	[Pattern: Vendors]
PURCHASER UNDER CONTRACTOR'S SUPERVISION	[Pattern: Purchaser under supervision]	OPTIONAL BY CONTRACTOR	[Pattern: Optional]

5. As two earlier drafts of the UNIDO Model Form of Cost Reimbursable Contract have been examined by the parties concerned, the Consultation is expected to approve the Third Draft of this form of contract.

6. Since the UNIDO Model Form of Turn-Key Contract has not previously been discussed at a Consultation, the Consultation is expected to discuss the Second Draft of this form of contract in detail.

7. A First Draft of the UNIDO Model Form of Semi-Turn-Key Contract (ID/WG.318/2) has been prepared, since this form is of great interest to many developing countries. The Consultation is expected to review the approach adopted by UNIDO in the preparation of this form of contract.

8. Completion of a UNIDO Model Form of Contract for the Supply of Know-how and Engineering Services has been postponed so that this work can benefit from the preparation of a Model Form of Licensing Agreement for the Petrochemical Industry recommended by the First Consultation on the Petrochemical Industry, convened in Mexico in March 1979.

9. The first three forms of contract are presented under item 3 of the Agenda of the Consultation. A Working Group will be established on the second day of the Consultation with a view to:

- (a) Approval of the Third Draft of the Cost Reimbursable Contract;
- (b) Discussion in detail of the Second Draft of the Turn-Key Lump-Sum Contract;
- (c) Preliminary consideration of the First Draft of the Semi-Turn-Key Contract.

III. ESTABLISHING A MULTILATERAL INSURANCE SCHEME PROVIDING ADEQUATE COVERAGE FOR CONSEQUENTIAL LOSSES INCURRED BY FERTILIZERS AND OTHER INDUSTRIAL PLANTS

10. At the Second Consultation, the UNIDO secretariat reported that it had been advised that whilst the world's commercial insurance market was prepared to provide insurance cover for consequential losses resulting from material damage, insurance could not be obtained to cover consequential losses resulting from delays in completion of the plant or non-performance when no material damage was involved. UNIDO therefore suggested that the guarantee of the performance of complete plant and equipment might best be given by the Government of the supplier's country.^{1/}

11. There were conflicting views on this point and it was recommended that the UNIDO secretariat should collect additional information on the amount and causes of consequential losses and on that basis continue to examine the problem with contractors, insurers, Governments and other interested parties.

12. In line with this recommendation, the following action has been taken:

- (a) UNIDO has analysed the causes and amount of consequential losses incurred by 27 fertilizer plants built in developing countries and 30 ammonia plants built in North America up to 1975;
- (b) UNIDO has discussed with contractors the liabilities they are prepared to accept through its preparation of the Model Contracts;
- (c) UNIDO staff discussed the problem with export credit insurance agencies in Belgium, France, the Federal Republic of Germany and the United Kingdom;
- (d) Experts on contracts and insurance from Canada, the Federal Republic of Germany, Switzerland, United Kingdom and the United States were invited to suggest a new approach to the problem. They met three times in 1980 to draw up a detailed proposal for establishing a multilateral insurance scheme that is presented for consideration under Agenda Item 4 of the Consultation.^{2/}

^{1/} The progress made in implementing the follow-up action recommended by the First Consultation, ID/WG.281/13, para. 29.

^{2/} Establishing a multilateral insurance scheme providing adequate coverage for consequential losses incurred by fertilizer and other industrial plants, ID/WG.318/6.

13. The results of UNIDO's discussions with the export credit insurance agencies of the Government of some countries showed that they could not insure the interests of the Purchaser of an industrial plant without a change in policy supported by legislation giving them additional powers.
14. The results of UNIDO's discussions with Contractors showed that they are generally unwilling to accept contractual liability for any consequential loss.
15. The results of UNIDO's preliminary discussions with Insurers showed that the world commercial insurance market might be receptive to a new approach provided the insurance scheme proposed by UNIDO covered all industrial plants and not only fertilizer plants.
16. UNIDO therefore decided that it might be advantageous to introduce a third party which could manage the multilateral insurance scheme, help to safeguard the interests of the Purchaser when appropriate, and act as arbiter in the case of dispute. Therefore the multilateral insurance scheme proposed by UNIDO in document ID/WG.318/6 has been worked out using the approach adopted by the commercial insurance industry.
17. The experts mentioned in para. 14(d) prepared a draft insurance policy that will supplement insurance covers already available to cover material damage and consequential losses during the period of construction and the first three years of operation of the plant. The capability of the insurance industry to offer cover on the basis of this draft insurance policy is in the process of being assessed through discussions with insurance and re-insurance companies and will be reported to the Consultation.
18. The Consultation will be invited to suggest any modifications required to bring the multilateral insurance scheme proposed by UNIDO in line with the original request of developing countries at the Second General Conference of UNIDO held in Lima in March 1975, which asked Governments of developed countries to establish an insurance scheme to cover the risks to which the developing countries are exposed in their industrial co-operation with their developed countries.^{1/}

^{1/} Draft resolution ID.CONF.3/L.9 containing this request was referred by the Conference to the Industrial Development Board (ID/B/C.3/38) which in turn decided that this subject should be examined by Consultations on the Fertilizer Industry, ID/CONF.3/38, paras. 300-302.

IV. THE COST OF NEW FERTILIZER PROJECTS AND HOW THEY MIGHT BE REDUCED

19. No further work was undertaken by UNIDO on this topic.
20. At the Second Consultation, UNIDO presented a study made by the Fertilizer Unit of the World Bank entitled "Investment and Production Costs for Fertilizers", ^{1/}
21. An up-dated version of this study was prepared for the FAO Commission on Fertilizers which met in June 1980. The study covers ammonia plants based on natural gas, urea plants, phosphoric acid plants, triple super-phosphate plants, DAP plants, single super-phosphate plants and the mining and beneficiation of potash.
22. The study points out that the two main factors in determining fertilizer costs, the costs of raw materials and investment, can vary significantly for different site locations and it is important to take this into account when projecting fertilizer costs and prices. In this study three different scenarios were considered in order to represent a wide range of possible site locations. The first is for a site with available supporting infrastructure. Normally this would be in a developed country but it could also occur in a developing country which already has a well-developed fertilizer industry. The second scenario covers a site which has some facilities but where some infrastructure would have to be provided, and the third scenario is a site at a remote location without any existing infrastructure. These two latter situations are most likely to occur in a developing country. With regard to raw materials costs, tables have been prepared which, in the case of nitrogen fertilizers, relates realization prices to gas prices, and in the case of phosphate fertilizers to sulphur and phosphate rock prices.
23. The new study shows that, allowing for a 15 per cent return on capital invested, it is judged that the realization price range to justify new fertilizer plants on new sites would have to be as follows in mid-1980 as compared to those reported earlier:

^{1/} Reprint of a paper prepared for the Fourth Session of the Commission on Fertilizers, Rome, September 1977; UNIDO document ID/WG.281/10.

Realization Price Range*
current US\$/Metric Ton

	<u>end-1977</u>	<u>mid-1980</u>
Urea (bagged)	170-200	250-270
Phosphoric Acid (as 100% P ₂ O ₅)	275-300	400-420
Triple Superphosphate (bulk) ⁵	130-150	190-210
Diammonium Phosphate (bulk)	190-210	280-300
Phosphate Rock (70 BPL)	22-25	35-45
Potash (fob Vancouver)	50-60	110-120

24. The main factors accounting for the increased cost of production are the capital cost of plants and the cost of raw materials. The study's estimates of the cost of plants in current dollars at a location with some infrastructure have increased as follows:

	<u>end-1977</u> \$ million	<u>mid-1980</u> \$ million
1650 tpd urea based on natural gas	230	280
3 million tons/yr high grade phosphate rock	80	112
1000 tpd phosphoric acid (100% P ₂ O ₅)	155	200
1200 tpd DAP (bulk product 18-46) ⁵	35	45

25. As regards raw materials, the prices assumed to obtain the realization price shown in para. 25 above are as follows at a location with some infrastructure:

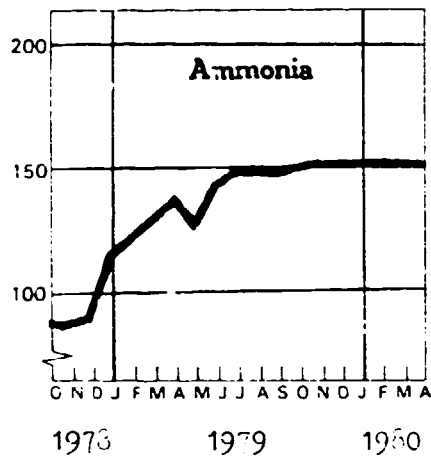
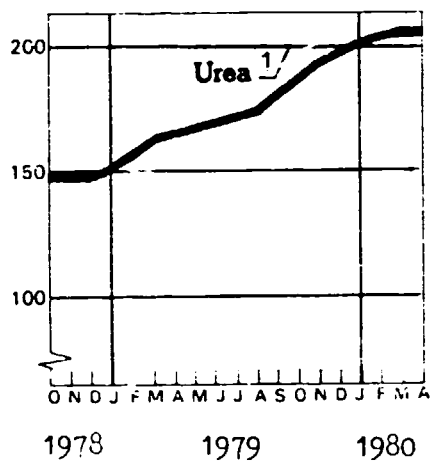
	<u>end-1977</u> \$	<u>mid-1980</u> \$
natural gas per thousand s.c.ft.	1.0	2.0
phosphate rock per ton	25	35
sulphur per ton	65	100

26. The price of fertilizers traded internationally is difficult to measure. The recent trend in the price of urea, phosphoric acid and DAP is shown in Chart B. Despite a substantial increase in price since October 1978 when the Second Consultation was convened, prices have not reached a level which the World Bank estimates is required to justify new investment. The impact of this situation on new plant construction is considered in Part V.

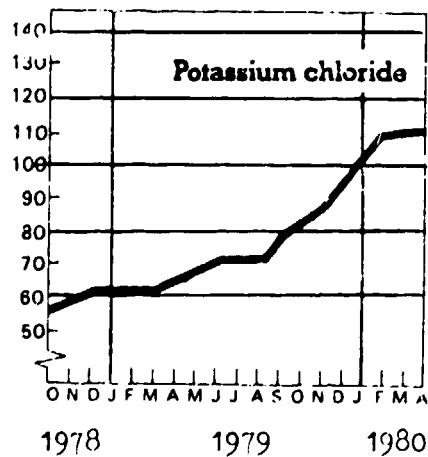
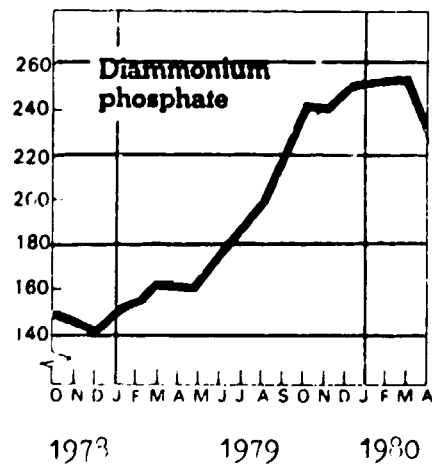
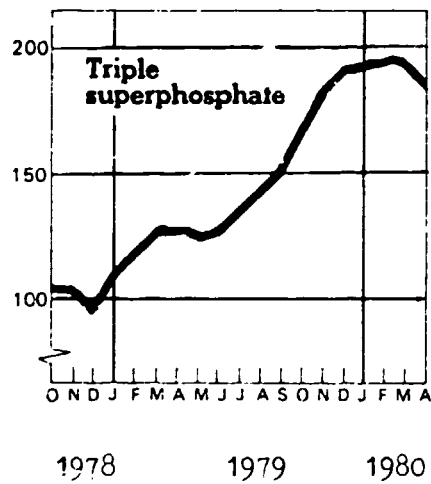
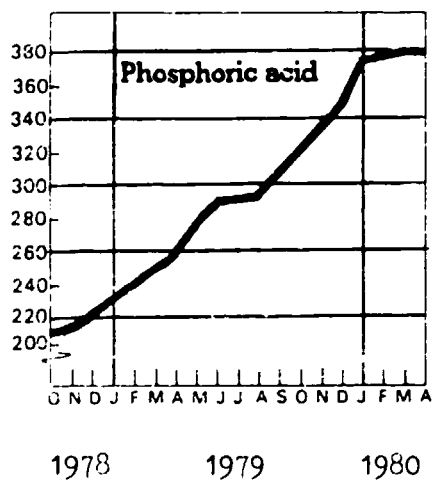
Chart B: TRENDS IN FERTILIZER PRICES

October 1978 to April 1980

US\$ per metric ton f.o.b. Western Europe



US\$ per metric ton f.o.b. United States Gulf



1/ Urea in bags

2/ Metric ton P₂O₅

3/ f.o.b. North America

V. MONITORING WORLD DEMAND FOR AND SUPPLY OF FERTILIZERS

27. The First Consultation recognized the need for more fertilizer production within the developing countries in order to meet increased consumption and assist industrial development. It suggested the following objectives:

- (a) The achievement by the developing countries of self-sufficiency in fertilizer production as soon as possible and in any case by 2000;
- (b) The production by the developing countries of a surplus for export;
- (c) The maintenance of reasonable balance between supply and demand in the world market.

28. For the Second Consultation, the UNIDO secretariat prepared a report which monitored progress towards these goals based on the estimates of the UNIDO/FAO/IBRD Working Group on Fertilizer for demand ten years ahead and UNIDO's own estimates of demand in the year 2000. It also suggested ways to improve the information presented^{1/}. The Second Consultation discussed the need to publish information at the country level; conflicting views were expressed; and the Joint Working Group was asked to consider how such information could be improved.

29. Meetings of the Joint Working Group were convened in Vienna in June 1979 and in Rome in May 1980. The Working Group's assessment of the world demand supply situation as at these two dates will be made available to participants in July 1980^{1/}. To help improve information at the country level, the Working Group invited individuals from India and Japan in 1979 and Brazil in 1980 to participate. UNIDO requested information from 40 developing countries, of whom one-third responded. The Working Group decided to continue its policy of publishing estimates only at the regional and world levels.

^{1/} The assessment as of June 1979 was published by FAO at the end of 1979 and entitled "Current World Fertilizer Situation and Outlook 1977/78 to 1983/84". The assessment as of May 1980 will bear a similar title and will be submitted to the FAO Commission on Fertilizers in late June 1980.

30. An analysis of the forecasts made by the Working Group in June in each of the last five years shows that:

- (a) forecasts of the world supply/balance are subject to substantial changes from one year to another; (see Table I)
- (b) that new plants have been implemented less quickly than forecast in the developing countries; but
- (c) that increases in supply capability in industrialized countries were initially under-estimated^{1/}.

It therefore appears that more accurate information at the country level needs to be developed through co-operation between individual countries and UNIDO, FAO and the World Bank.

Progress since the Second Consultation

31. The 1979 and 1980 Reports of the Joint Working Group reveal the following developments in the World Fertilizer situation in the two years since the Second Consultation was held in November 1978.

- (a) World consumption of fertilizers (measured in terms of the nutrients) increased 4 per cent in 1977/78 and nearly 8 per cent in 1978/79;
- (b) Consumption of fertilizers in developing countries (excluding China) increased 14 per cent in 1977/78 and 7.5 per cent in 1978/79; with consumption of phosphate fertilizers growing slightly faster than that of nitrogen;
- (c) Developing countries used 26 kilograms of nutrient per hectare compared with 113 kilograms in developed countries with market economies and 94 kilograms in those with centrally-planned economies;
- (d) There has been sufficient production to meet demand, despite the closure of significant ammonia capacity in developed countries;
- (e) Production of nitrogen fertilizers increased in developing countries by 12 per cent in 1977/78 and 14 per cent in 1978/79. For phosphate fertilizers, the increase was 20 per cent in 1977/78 and 7 per cent in 1978/79,
- (f) There appears to be sufficient production capacity in existence or planned to come on stream to meet future demand in the next three years; however the estimated world surplus of supply capability is less than 5 per cent of world consumption for each nutrient and inadequate to cover forecasting errors of a size experienced in the past.

^{1/} See Report updating the UNIDO World-Wide Study of the Fertilizer Industry prepared for the Third Consultation, July 1980.

(f) Since the Second Consultation in October 1978, there has been a marked slow-down in the development of firm plans for new nitrogen fertilizer capacity in both developing and developed countries and for phosphate fertilizer capacity in the developing countries.

32. The world supply/demand balance for nitrogen, phosphate and potash as forecast by the Working Group in June 1978, June 1979 and May 1980, is summarized in Table I.

33. The growth of fertilizer production capacity 1977-80 and the growth forecast for the next five years 1980-85 as estimated by the Joint Working Group is shown in Table II.

34. The marked slow-down in planned additions to capacity is also revealed quite clearly in Table III which compares the growth in fertilizer production capacity forecast at June 1980 with the forecast made in June 1978.

Table I
WORKING GROUP FORECASTS OF
WORLD SUPPLY AND DEMAND BALANCE
FOR FERTILIZERS
(million metric tons N)

Year Ending June 30	Nitrogen			Phosphate			Potash		
	As at June 1978	As at June 1979	As at June 1980	As at June 1978	As at June 1979	As at June 1980	As at June 1978	As at June 1979	As at June 1980
1977	-	-	-	-	-	-	-	-	-
1978	0.66	-	-	3.91	-	-	2.02	-	-
1979	1.56	0.04	-	3.58	2.86	-	1.76	1.85	-
1980	2.28	0.10	0.53	2.77	2.33	0.79	1.60	1.77	-0.98
1981	3.35	1.43	0.57	3.05	2.19	0.68	1.30	1.64	-0.97
1982	4.35	1.90	0.98	2.64	2.21	1.01	0.91	1.11	-0.80
1983	3.59	1.45	1.60	1.97	2.30	1.30	0.40	1.04	-0.23
1984	-	0.88	2.07	-	1.80	1.19	-	1.40	0.49
1985	-	-	2.43	-	-	0.91	-	-	1.02

SOURCE: UNIDO/FAO/IBRD Working Group on Fertilizers, June 1980 estimates are preliminary.

TABLE II: GROWTH OF FERTILIZER PRODUCTION CAPACITY 1977-80 AND FORECAST 1980-85

	Capacity			Increase in Capacity			
	Actual June 1977	Estimate June 1980	Forecast June 1985	3 Years Total	Annual Average	5 Years Total	Annual Average
<u>Nitrogenous Fertilizers</u>							
Developing Countries	19.6	28.5	38.9	8.9	3.0	10.4	2.1
Developed Countries	58.5	69.7	76.7	10.6	3.5	7.0	1.4
World Total	78.1	97.6	115.0	19.5	6.5	17.4	3.5
<u>Phosphate Fertilizer</u>							
Developing Countries	4.3	5.0	8.7	0.7	0.2	4.4	0.9
Developed Countries	21.7	24.5	27.0	2.8	0.9	5.3	1.1
World Total	26.0	29.5	35.7	3.5	1.1	9.7	1.9
<u>Potash</u>							
Developing Countries	0.4	0.4	1.7	-	-	1.3	0.3
Developed Countries	30.3	32.3	41.8	2.0	0.7	11.5	2.3
World Total	30.7	32.7	43.5	2.0	0.7	12.8	2.6
<u>Developing Countries Share in World Total</u>							
Nitrogen Fertilizer	25.1	29.3	33.9	X			
Phosphate Fertilizer	16.6	15.8	24.3				
Potash	1.1	1.3	3.8				

SOURCE: UNIDO/FAO/IBRD Working Group on Fertilizers

Note: "Developing countries" include Asian CPE's
1980 estimates are preliminary.

TABLE III: GROWTH IN FERTILIZER PRODUCTION CAPACITY FORECAST BY JOINT WORKING GROUP JUNE 1978 AND JUNE 1980

	Estimate of the Working Group Reported to the Second Consultation			Estimates of the Working Group Reported to the Third Consultation				
	Estimated Capacity at June 1978	Increase Planned up to June 1983	Forecast Capacity at June 1983	Actual Capacity at June 1978	Increase Planned up to June 1985	Forecast Capacity at June 1985	Increase Planned up to June 1983	Forecast Capacity at June 1983
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
<u>Nitrogenous Fertilizers</u>								
Developing Countries	22.9	14.7	37.6	21.2	17.7	38.9	11.7	32.9
Developed Countries	61.9	16.1	78.0	59.9	16.2	76.71	15.6	75.5
World Total	84.8	30.8	115.6	81.0	33.9	115.0	27.3	108.4
<u>Phosphate Fertilizers</u>								
Developing Countries	4.6	5.1	9.7	4.3	4.4	8.7	2.9	7.2
Developed Countries	22.2	2.1	24.3	22.9	4.7	27.0	5.3	28.2
World Total	26.8	7.2	34.0	27.2	8.5	35.7	8.2	35.4
<u>Potash</u>								
Developing Countries	0.4	0.8	1.2	0.4	1.3	1.7	::	::
Developed Countries	30.8	5.8	36.6	32.0	9.2	41.8	::	::
World Total	31.2	6.6	37.8	32.4	11.1	43.5	::	::

SOURCE: UNIDO/FAO/IRRD Working Group on Fertilizers

Note: "Developing countries" include Asian CPE's; 1980 figures are preliminary.

35. In other words, taking into account the extension of the planning horizon in 1980 to include two additional years from June 1983 to June 1985, the total world ammonia capacity (existing and firmly planned) has remained the same as reported two years ago, 115 million metric tons nitrogen although slightly more phosphoric acid capacity, 35.7 versus 34.0 million metric tons P_2O_5 .

36. Under Agenda Item 3 (dealing with the Progress Report), the Consultation will have the opportunity to examine the causes of this slow-down in new investment. Under Agenda Item 6, New Issues for Further Consultations, there will be an opportunity to draw conclusions and recommend appropriate action.

Ways to increase fertilizer consumption

37. The First Consultation urged that immediate steps be taken to increase fertilizer consumption in developing countries and emphasized that "self-sufficiency" as reported in para. 27 above, should be interpreted with references not to the present low levels of fertilizer consumption, but to a stimulated optimum level of consumption.

38. The Second Consultation, in paragraphs 62 and 63 of its Report, stressed the need to increase fertilizer consumption and recommended that the Joint Working Group study this matter and report jointly on the progress made to the Third Consultation. At the 1979 meeting of the Joint Working Group, FAO felt that the recommended activities were mainly the concern of FAO. After consultation with UNIDO, it was agreed that FAO will submit its own report on this subject to the Consultation^{1/}.

39. The World Bank Group recognises that investment in distribution and marketing infrastructure often costs as much as the investment in the fertilizer plant itself and that the Bank should be more active in this field. Such investment is likely to be more important in the 1980's than in the 1970's, when new fertilizer manufacturing facilities were frequently able to use existing distribution facilities previously used to handle imports^{2/}.

1/ FAO activities in promoting and overcoming constraints to the efficient and complementary use of mineral fertilizers, organic materials and biological nitrogen fixation by small scale farmers in developing countries.

2/ World Fertilizer Review and Fertilizer Requirements of Developing Countries to 1979. Internal Report No. 2675, September 1979.

VI. PROGRAMME TO STRENGTHEN CO-OPERATION BETWEEN DEVELOPING COUNTRIES
IN THE FERTILIZER INDUSTRY

40. To implement the programme of co-operation among developing countries in the fertilizer industry suggested by the Second Consultation (paras. 80 to 84 of ID/221), UNIDO took the following action:

- (a) UNIDO prepared a proposal for convening a Technical Seminar in China at which technology for the production of ammonia, urea and NPK fertilizers on both a large and small scale would be discussed; the proposal was submitted in 1979 to UNDP for financing as an inter-regional project; a negative answer was received indicating that it might be reconsidered in UNDP's 1982 to 1987 programme (para.81);
- (b) No plans were made for convening an inter-regional meeting of associations of fertilizer producers; the Fertilizer Association of India has invited UNIDO to convene such a meeting on 3 December 1980 in New Delhi immediately preceding the Jubilee Meeting of the Fertilizer Association of India (para.32);
- (c) UNIDO has offered to co-operate with OAU in the establishment of a Fertilizer Development Centre in Africa. Proposals for such a centre have been prepared both by UNIDO and by the International Fertilizer Development Centre (IFDC); both proposals are under consideration by the OAU; no action has been proposed for a similar centre in Asia (para.83);
- (d) With UNDP support, UNIDO has initiated a project to last 4 years in Arab countries entitled "Regional Co-operation Programme for the Development and Promotion of Fertilizer Production and Utilization", the total cost is over US\$2 million (paras. 80 and 83);
- (e) The proposals for training programmes were reviewed internally by UNIDO; it was found that they could not be financed in 1979 or 1980; an assessment of existing seminars and training programmes is being made and proposals for the period 1982 to 1984 are being prepared for submission to potential sources of financing.

41. The First Meeting of the ad hoc Committee on Co-operation among Developing Countries in the Fertilizer Industry was convened by UNIDO in Nairobi in March 1980. The Suggestions made to the Meeting^{1/} and the Report of the Meeting^{2/} are distributed as documents for the Consultation. The recommendations of the Meeting are listed in Annex A.

1/ ID/WG.322/1

2/ ID/WG.322/2

VII. UP-DATING THE UNIDO WORLD-WIDE STUDY, INCLUDING THE INDUSTRIAL PREPARATION OF ORGANIC FERTILIZERS

42. A report up-dating the UNIDO World-Wide Study is submitted as a background document for Agenda Items 3 and 6. Its contents include:

- The current world situation in the fertilizer industry.
- Forecasts of demand for fertilizers in the medium-term and up to the year 2000.
- Analysis of the results of forecasts made by the UNIDO/FAO/IBRD Working Group on Fertilizers.
- The impact of organic fertilizers as an additional source of nutrients.
- Issues requiring further examination.

43. The fourth section of this Report includes UNIDO's response to the request for a joint UNIDO/FAO Study of the industrial preparation of organic fertilizers. It is based on a consultant study prepared for UNIDO on this subject, giving special attention to the processing of urban waste.^{1/}

44. UNIDO agreed that FAO should report independently on this subject in the paper referred to in para. 38 above.

1/ The Commercial Production of Organic Materials for Soil Improvement in Developing Countries.

VIII. DEVELOPMENT OF THE FERTILIZER INDUSTRY IN LEAST DEVELOPED COUNTRIES

45. At the Second Consultation, UNIDO presented a survey of the opportunities for establishing fertilizer production, bulk blending and bagging facilities in 20 least developed countries, mainly those located in Africa^{1/}. The Second Consultation recommended that UNIDO give special attention to developing the fertilizer industry in the least-developed countries.

46. As a follow-up to the 1978 survey, UNIDO took the following action upon the request of the country concerned:

- (a) in Benin, a bulk blending and bagging plant is under construction and the feasibility of a single super-phosphate plant has been prepared;
- (b) in Burundi, indigenous deposits of peat and phosphate are being examined to test their suitability for the manufacture of fertilizers; Lake Kivu gas may also be used;
- (c) in Malawi, the feasibility of establishing a plant producing calcium ammonium nitrate using hydro-electric power has been prepared and a project is being developed;
- (d) i. Nepal, a pre-irvestment study of a bulk blending and bagging plant is being implemented;
- (e) in Somalia, a pre-investment study has demonstrated the feasibility of a bagging plant without bulk blending;
- (f) in Zaire, the opportunity to make nitrogenous fertilizers using hydro-electric power and to use local deposits of phosphate are being examined.

47. UNIDO will continue to give priority to the requirements of least-developed countries. The General Assembly has approved limited funds to finance the participation of selected least-developed countries in UNIDO's programme of Consultations in the 1980-1981 biennium.

^{1/} Opportunities in Least-Developed Countries to Establish Facilities for the Production and Distribution of Fertilizers and the International Co-operation Required, ID/WG.281/9. The full report, UNIDO/IOD/220, covered the following countries: In Asia, Afghanistan, Bangladesh and Nepal; in the Middle East, Yemen Arab Republic and the Yemen Democratic Republic; in Africa, Benin, Burundi, Central African Republic, Chad, Ethiopia, Gambia, Malawi, Mali, Niger, Rwanda, Somalia, Sudan, Tanzania and Upper Volta.

CONCLUSIONS AND RECOMMENDATIONS

Conclusions and Recommendations of the First Meeting of the Ad Hoc Committee on Cooperation amongst Developing Countries in the Fertilizer Industry

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:

- (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.



