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MINUTES OF THE THIRTEENTH MEETING
OF THE
UNIDO/FAO/IBRD WORKING GROUP ON FERTILIZERS^{1/}

Vienna, Austria
15 - 18 March 1976

UNIDO Headquarters

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I. OPENING SESSION

- a) The meeting was opened by Mr. M.C. Verghese, Head, Chemical Industries Section of UNIDO, on behalf of the Executive Director, Dr. Abd-El Rahman Khane and the Director of Industrial Operations Division, Mr. G.P. Veliky. Mr. Verghese pointed out the results of the continued close co-operation of UNIDO/FAO/IBRD over the past five years. The minutes of the twelve meetings already held were reproduced by UNIDO (document:IOD.7) for this meeting. To avoid disparaging remarks made on international and other organizations about the forecast of supply and demand, even closer agreement and harmonization between the organizations appear necessary in the future. Mr. Verghese was the chairman for the meeting.
- b) Adoption of the minutes of the 12th meeting was moved by Mr. W.F. Sheldrick of IBRD. The following amendments were agreed to for the record:
- (i) Item 4: last sentence ... deal with fertilizer demand and supply;
 - (ii) Item 9 (page 6): It was agreed to circulate an exchange of information perhaps two or three times per year... instead of News Letter);
 - (iii) Item 14 (d): An exchange of information would be circulated instead of News Letter.
 - (iv) Item 14 (f): Fertilizer demand and supply
 - (iii) Further capacity data would be provided
 - (v) Item 15: Next meeting - First paragraph be revised to read:
"It was agreed that future meetings of the Working Group would be held on a regular basis twice per annum, preferably in April and November of each year. It was also agreed that the meeting should retain its present form....."
- c) Adoption of the agenda for the 13th Meeting: The agenda for the 13th Meeting was adopted with minor changes which will be mentioned in the minutes under the respective headings.

II. Fertilizer Supply and Demand

The harmonization of the Group's listing of fertilizer production capacities and demand projection was started on the first day of the meeting by reviewing the up-dated information on existing and planned fertilizer production capacities for

- a) ammonia plants;
- b) phosphoric acid plants;
- c) potash plants.

From the year 1973/74 to 1980/81, up-dated and agreed figures for forecast production and demand balances are urgently required by FAO's Commission on Fertilizers in preparation of their meeting scheduled for June 1976. Since Centre d'Etude de l'Azote (CEA) was still awaiting some of the returns on their questionnaires, Mr. Seelinger agreed to complete this work for nitrogen fertilizers by 2 April 1976 and circulate a draft proposal amongst the members of the group. In order to adjust and agree on these figures, it was decided to have a meeting at the CEA's headquarter in Zurich on 14/15 April 1976 between FAO's Mr. Couston, IBRD's Mr. Stier and Mr. Panfil representing UNIDO.

An attempt will be made by UNIDO to improve on the data available from China.

The up-dating of ammonia capacities for 1974/75 to 1980/81 and of phosphoric acid and potash production capabilities were completed during the session and agreed upon by the Working Group. UNIDO is to complete the respective summary tables.

In addition, the listing for phosphate and potash capacities was completed for the base year of 1973/74. Any comments to the ammonia capacity base listing for 1973/74 will be incorporated by Mr. Stier (IBRD) for the Zurich meeting with UNIDO contributing their information collected for socialist countries.

In discussing the phosphate fertilizer production capacities, it was pointed out that the phosphoric acid plants for the base year 1973/74 in the USA operated at 92% of their nameplate capacity, while in the same period in Western Europe operated at 82% of their nameplate capacity.

It was agreed that the base data definitions agreed upon at the 11th meeting and referred to in the UNIDO/IOD.7, page 159, will be reviewed by Mr. Stier (IBRD) who will submit a draft proposal based on ISMA data for phosphoric acid plants at the Zurich meeting.

The group also adopted the following possible ratings for phosphoric acid plants being commissioned in the coming years.

<u>Operating year</u>	<u>1st year</u>	<u>2nd year</u>	<u>3rd year</u>
Per cent of nameplate capacity, developed countries	40%	80%	90%
Per cent of nameplate capacity, developing countries	35%	70%	80%

Agreement was reached on wet phosphoric acid plant process losses or diverse chemical uses as follows for both developed and developing countries:

Process losses per annum to be calculated as 6%

Storage, transfer and handling losses per annum to be calculated as 5%

Phosphoric acid for technical use, developed countries 10%

Phosphoric acid for technical use, developing countries 0%

Similarly Mr. Stier has undertaken to treat the potash figures in the same manner as those for P_2O_5 adopting the same time table for completion of this work.

It was noted that the rated capacities for phosphate plants in India were on a 310 day basis. The adoption of a change in rating to standard 330 or 300 was deferred to the next meeting. A recommendation was also made that a separate listing for nitro-phosphate plants be prepared for the next meeting. ISMA was in agreement with this proposal. It was agreed that all comments on phosphoric acid plant listings be sent to Mr. Stier (IBRD). Concerning the potash production figures, the deduction of 4% for industrial uses in the world (see pages 159, last para. of UNIDO/IOD.7) will remain, as well as the 1.5% for losses to determine potash available for agriculture. However, 1.5% will be increased to 10% for the USSR. For Italy and Spain 100 and 200 thousand tons K_2O should be deducted from the capacities to give the supply capacity.

The supply figures for nitrogen, phosphate and potash require a continuous study and the decision on these will have to be deferred to the next meeting when more reliable data becomes available. At this point, the losses have to be deducted from production figures and not the capacity data.

The fertilizer demand figures are at present still published by the group on a regional basis. Mr. Couston reiterated that for the World Food Conference, data was developed from country by country information.

Taking into account a) population increase;
b) income level or change in income;
c) change in diet;
d) price factor for agricultural products; and
e) expected crop production,

Mr. Erus advised that the data collected for statistical purposes in FAO is completely computerized and can be readily available, and distributed in a form of a computer print-out every three months. This would enable exchange of information before the meeting of the Working Group.

The world fertilizer supply/demand and balance 1974/75 to 1980/81 by regions shown in tables 2, 3 and 4 on pages 164*, 165, 166, 167 and 168 of the UNIDO/IOD.7 report were corrected for demand of phosphate and potash. For potash the corrections were completed except for North America which is to be reviewed at the Zurich Meeting in April, together with the nitrogen figures.

Case histories for nitrogen production and consumption for China and India were reviewed in detail by Mr. W. L'Eplattenier (CEA). The matter is to be reviewed when more information becomes available. Import figures for China for nitrogen are well known and so are the production figures for the coming years for the large nitrogen plants presently on order or under construction. It is the production figures for the small plants, 3,000 - 5,000 tons per year of which there are supposedly as

* North America only.

many as 2,000 operating in China (some only on seasonal basis) and the medium sized plants with the capacity of 50,000 tons per year for which there are no reliable data at present.

In the case of India the consumption figures by IFDC, UNIDO/ESCAP and UNICO for the year 1977/80 show less variation and the shortfall is smaller to be met by imports.

d) Grouping of countries and format of recording

Professor R.Ewell initiated a preliminary discussion on the above topic pointing out differences between grouping of countries by FAO, IBRD and UNIDO, as well as UN Population Council (see appendix table I.). Mr. Erus advised that FAO completed a comprehensive study on this topic and a report is available on request, making several proposals for changing the grouping. The present system, however, has been adopted by ECOSOC, and it is not only for fertilizers, but all commodities.

IBRD suggested its own classification, but has accepted the one used by the UN and FAO as shown in appendix 1. Mr. Erus who was not prepared for this added item on the agenda, will circulate FAO's report on this subject to UNIDO and IBRD before the next meeting for the discussion.

e) Harmonization of methodology for projecting supply/demand

This item of the agenda was discussed under b) and c) in determining the supply and demand of fertilizers.

III. a) Review on on-going projects for de-bottlenecking of production facilities in developing countries

Mr. Paul Stangel advised that IFDC has been requested and provided assistance to

- i) Colombia - Baranquilla plant, on NPK quality control (2 engineers);
- ii) Venezuela - Nitroven plants, on ammonia production and problems associated with environmental pollution;
- iii) Taiwan - start-up assistance for an NPK fertilizer plant;
- iv) through ESPINDESA in Spain on NPK Production;
- v) Ghana - import and bulk handling of fertilizers.

Mr. Keleti (UNIDO) outlined in brief the assistance rendered to India in maintenance and repair of fertilizer plants by a team of experts provided by POLYTECHNA (CSSR) under sub-contract for 6 months visiting three plants operated by FCI and two by FACT.

b) UNIDO's activities in the catalyst field was briefly reviewed by Mr. Aleinov of UNIDO. Following the expert group meeting in Bucharest in 1972, a conference was organized by the International Committee for Catalyst and their use in co-operation with UNIDO in 1973. The Joint UNIDO/Romania Centre has now prepared a reference manual on the manufacture of catalyst for fertilizer and petrochemical industries. The manual includes information on 71 catalyst producing companies throughout the world and is being re-edited for publication. UNIDO has provided technical assistance in this field to Iran and Cuba, and is actively pursuing the creation of regional catalyst programmes.

c) Model on marketing fertilizers, ASEAN group region

Mr. P. Stangel of IFDC presented a brief on the IFDC paper, T-2, January 1976, entitled "The Potential for Regional Co-operation in Fertilizers".

The study undertaken in co-operation with the World Bank is primarily intended to investment plans in the fertilizer field for the region. It fits in with the policy of the Consultation Group of Food Production and Investment in Developing Countries (CGFPI) and the World Bank to promote regional planning and guide country by country investments. The paper presents a statistic model from which the Bank is planning to make a dynamic model. The draft of the paper prepared for the February 1976 meeting of the CGFPI was presented at the regional meeting of the Asian Development Bank in Manila where about 30 countries were represented. The cost of transportation and the required infrastructure needs more detailed study. Comments on the report from the group included

- i) low natural gas prices assumed (50 ¢ per 1000 cu.ft.);
- ii) the exclusion of Brunei and Singapore from the survey as potential locations for nitrogen industry. Brunei was considered more suitable for LNG export shipments than production of ammonia, while Singapore could have been included for plants using any associated gas or naphtha for feedstock. Strategic decision for the Philippines to produce 75% of their nitrogen demand was also taken into consideration.

IV. Summary of UNIDO Meetings

a) Mr. Keleti (UNIDO) presented a brief summary on the New Zealand Workshop in Fertilizer Technology held in conjunction with the 15th Technical Conference of the New Zealand Fertilizer Manufacturers' Research Association in Auckland, New Zealand. The report, ID/WG.220/2 was available to all participants, and it included a brief on the fertilizer production facilities manufacturing single superphosphate in New Zealand.

b) Mr. Panfil (UNIDO) summarized the Interregional Meeting on Safety in Design and Operation of Ammonia Plants held in New Delhi, India, during January 1976. The meeting was convened jointly with the Fertilizer Association of India. The report will be available to all members of the Working Group when published. The Fertilizer Association of India has indicated their interest in holding such a meeting on a biannual basis in the future.

V. Third Interregional Fertilizer Symposium

As a result of the restructuring of UNIDO the convening of meetings was transferred to a newly created Division, International Centre for Industrial Studies. Mr. A. Dumitrescu of the Sectoral Studies Section presented a brief plan on holding such a conference in November 1976 after UNIDO's studies on global fertilizer situation are completed. The title of the consultations will be changed and the draft outline of the programme was circulated amongst the group.

VI. Matters arising from the 12th Meeting

a) The use of organic materials as fertilizers

Mr. Hauck (FAO) advised on the Workshop to be held in Bangkok at the FAO Regional Office from 26 October to 5 November 1976. All aspects of organic fertilizers will be discussed for the ESCAP region. The ESCAP region was selected by FAO first to hold such a meeting since the use of organic fertilizers is higher in that region than most other regions. The meeting will discuss practical aspects, processes as well as economics of organic fertilizers including biogas. UNIDO's co-operation and assistance were requested for this meeting.

Mr. Maung (UNIDO) briefly reviewed the two feasibility studies on production of compost (organic) fertilizers for the city, Conakry in Guinea and Aden, People's Democratic Republic of Yemen. Currently a UNIDO expert is in Morocco to rehabilitate and improve the efficiency of existing compost plants in Rabat, Meknes, Tetuan and Marrakech, training personnel in operation and maintenance.

b) There was no additional information presented by members of the group on fertilizer plant investment costs.

c) UNIDO/FAO/IBRD/IFDC exchange of information on fertilizer activities

The exchange of information compiled by Mr. Couston (FAO) on the base information provided by members of the Working Group was well received. The Group has agreed that the exchange will continue and this publication will take place twice a year and preferably before each meeting of the Group. Information on publications of interest in the fertilizer field to members of the Group will be listed. It was also agreed that a brief note will give details of the Group's activities, forthcoming seminars, expert group meetings, etc.

d) Marketing plan for distribution of fertilizers and associated problems including IBRD study on models

IBRD's paper FPI/76/1-7 prepared for the Consultative Group on Food Production and Investment in Developing Countries was distributed for the Group. (Document F entitled "Model Systems for Marketing and Distributing Fertilizers in Developing Countries"). There was no discussion on this item.

e) Long term contract and commodity arrangements for fertilizers

Mr. Couston (FAO) presented two brief drafts on "International Commodity Arrangements for Fertilizer" and on "Long-term Contracts for Fertilizer in International Trade". These drafts are briefs on policy papers on the consultative working group of the Commission. They are intended for the scheduled June Meeting of FAO Commission on Fertilizers, and are not for publication outside of UNIDO/FAO/IBRD Working Group. While the paper on "International Commodity Agreements for Fertilizer" concludes that under the present conditions, commodity agreements are not feasible proposition for the fertilizer trade, in the paper on long-term contracts for fertilizer, international trade is recommended by the consultative working group for continued study by FAO's Secretariat.

f) Direct use of phosphate rock as fertilizer

Mr. P. Stangel (IFDC) briefed the Group on TVA/IFDC pilot project in this field. There are several countries where direct application of phosphate rock to soils is being adopted. Certain types of phosphate rock are very suitable sources of phosphate and need no processing to provide suitable fertilizer for tropical crops grown in tropical soils. When more data becomes available, this may apply to temperate zones as well. TVA's work is directed to determine the optimum granular size for the phosphate rock with due consideration given to the dustiness of the product. Some new technology is also under consideration using suspending agents. These will be published in the near future when patent applications are completed. Mr. Hauck (FAO) called the attention of meeting to some simple processing methods for processing rock phosphate which essentially help to concentrate P in the soil, such as treatment by heat and sulphuric acid as well as biological treatment such as "Bio Super". As this type of processing and the use of rock phosphate in various forms call for specific experience, he suggested to develop a joint assistance project which includes rock phosphate processing and use.

Mr. Keleti (UNIDO) advised that assistance was given to the Republic of Mali where a UNIDO expert has specified a grinding plant for indigenous phosphate rock which is to be directly applied to soils.

g) Terminology of plant nutrients

The subject has been discussed in the past. FAO is preparing a position paper for the Commission on Fertilizers and requested this item be put on the agenda for comments by the Group. Countries using P and K for plant nutrient elemental form include Botswana, Denmark, Finland, Ireland, South Africa, Swaziland and Sweden. FAO is also informed that the CMEA (ex-COMECON) countries are likely to change over in the near future. As far as UNIDO is concerned, it will consider the pros and cons if FAO decides to change over to the new terminology.

VII. Discussion on the programme for the 14th Meeting of the Working Group to be convened in Rome from 29 November to 1 December 1976

- a) It was decided that since the time consuming work on supply/demand for fertilizers will largely be in a form where only up-dating is required, the meetings now can be reduced to a three day session.
- b) An interim report will be issued on the meeting in Zurich scheduled 14/15 April 1976 and any outstanding items will be left for discussion for November meeting in Rome. The meeting will have a technical and supply/demand analysis section.
- c) Other items suggested for the agenda included
 - 1) FAO to report on the Bangkok Meeting and follow up on organic fertilizers;
 - ii) further discussion on plant nutrient terminology, FAO;
 - iii) standardization in fertilizer legislation and control analysis, FAO;
 - iv) further development on the direct application of phosphate to soils, IFDC;
 - v) report on the interregional consultations on fertilizers, scheduled by UNIDO in November 1976 in Vienna to be held a week before the UNIDO/FAO/IBRD Working Group meeting (report to be verbal one);
 - vi) West African regional study undertaken by IFDC;
 - vii) Continuation and up-dating data on fertilizer supply and demand;
 - viii) Definition used in fertilizer supply and demand;
 - ix) Study on world phosphate economics, IBRD;
 - x) FAO to prepare comments on reporting calendar year vs. split year for statistics of fertilizer supply;
 - xi) Report on the third session of the Commission on Fertilizers, FAO.

Mr. Hauck (FAO) requested that at the next meeting the technical matters should be scheduled for discussion before the work on supply and demand on fertilizers.

Appendix 1 Grouping of Countries

	<u>PAO classification</u>	<u>IBRD classification</u>	<u>TVA classification</u>	<u>Suggested UNIDO classification</u>
<u>Developed regions</u>	<p><u>North America</u> U.S.A. + Canada</p> <p><u>West Europe</u> Includes Yugoslavia</p> <p><u>Centrally Planned Europe + U.S.S.R.</u> 7 East European countries + U.S.S.R.</p> <p><u>Oceania</u> Australia + New Zealand</p> <p><u>Other developed economies</u> Japan, South Africa, Israel</p>	<p><u>North America</u> U.S.A. + Canada</p> <p><u>West Europe</u> Includes Yugoslavia</p> <p><u>East Europe</u> 7 East European countries + U.S.S.R.</p> <p><u>Pacific and other Developed</u> All Oceania, including all islands plus Japan, South Africa, Israel</p>	<p><u>North America</u> U.S.A. + Canada</p> <p><u>West Europe</u> Excludes Yugoslavia</p> <p><u>East Europe + U.S.S.R.</u> 8 East European countries including Yugoslavia</p> <p><u>U.S.S.R.</u></p> <p><u>Oceania</u> All Oceania, including all islands</p> <p><u>Japan</u></p>	<p><u>U.S.A.</u> Canada</p> <p><u>West Europe</u> Excludes Yugoslavia</p> <p><u>East Europe</u> 8 East European countries including Yugoslavia</p> <p><u>U.S.S.R.</u></p> <p><u>Oceania</u> All Oceania, including all islands</p> <p><u>Japan</u></p>
<u>Developing regions</u>	<p><u>North East</u> 3 countries in Africa (Egypt, Libya, Sudan) 15 countries in West Asia from Turkey to Iran, not including Israel</p> <p><u>Far East</u> All countries in Asia east of Iran except Japan and Socialist Asia</p> <p><u>Socialist Asia</u> China, Taiwan, Korea (DPR), Vietnam (DR), Mongolia</p> <p><u>Africa</u> All countries in Africa, except Egypt, Libya, Sudan</p> <p><u>Latin America</u></p> <p><u>Oceania</u> All small islands in south and west Pacific Ocean (i.e. all Oceania except Australia and New Zealand)</p>	<p><u>Developing Asia</u> All Asia, except Japan, Israel and "Other Asia"</p> <p><u>Other Asia (meaning Centrally Planned Asia)</u> China, Taiwan, Korea (DPR), Vietnam (DR), Mongolia</p> <p><u>Developing Africa</u> All countries in Africa, except South Africa</p> <p><u>Latin America</u></p>	<p><u>North Asia</u> 16 countries from Turkey to Iran, including Israel</p> <p><u>China (includes Taiwan)</u> India</p> <p><u>Rest of Asia</u> All countries in Asia east of Iran, except Japan, China, India</p> <p><u>Africa</u> All countries in Africa</p> <p><u>Latin America</u></p>	<p><u>West Asia</u> 16 countries from Turkey to Iran, including Israel</p> <p><u>China (includes Taiwan)</u> India</p> <p><u>Rest of Asia</u> All countries in Asia east of Iran, except Japan, China, India</p> <p><u>Africa</u> All countries in Africa</p> <p><u>Latin America</u></p>

Items underlined are items actually tabulated in PAO, IBRD and TVA reports.

Items underlined are items proposed to be actually tabulated in future UNIDO reports. In past UNIDO reports Asia has been considered as a single continent divided into China, India and Rest of Asia. Now a new category of West Asia is proposed.

Appendix 2

The 13th Meeting of UNIDO/FAO/IBRD Working Group on Fertilizers

Vienna, 15 - 19 March 1976

AGENDA

Monday, 15 March (9:30 a.m.) and Tuesday, 16 March 1976 (9:00 a.m.)

- I. Opening Session
 - a) Opening remarks

 - b) Adoption of the Minutes of the 12th Meeting
 - c) Adoption of the Agenda for the 13th Meeting

- II. Fertilizer Supply and Demand
 - a) Review of the up-dated data on fertilizer production facilities

 - b) Review of the fertilizer production facilities in the socialist countries

 - c) The demand projection for fertilizers

 - d) Discussion on grouping of countries and format of recording

 - e) Discussion on harmonization of methodology in determining supply/demand of fertilizers

Wednesday, 17 March 1976 (9:00 a.m.)

III. a) Review of on-going projects for de-bottlenecking production facilities in developing countries

b) Statement on UNIDO's activities in the catalyst field

IV. Summary of UNIDO's Meetings

a) Workshop on Fertilizer Technology
New Zealand

b) Interregional meeting on Safety in the Design and Operation of Ammonia Plants
New Delhi, India

Thursday, 18 March 1976 (9.00 a.m.)

V. The third Interregional Fertilizer Symposium

VI. Matters arising from Discussions and requiring Action from the 12th Meeting as per item 14, page 13 of the Minutes

a) Further activities in the use of organic materials in the field of fertilizers

b) Data on recent fertilizer investment costs for FAO Commission on Fertilizers

c) UNIDO/FAO/IBRD/IFDC exchange of information - co-ordinator: FAO Commission on Fertilizers

d) Marketing plan for distribution of fertilizers and associated problems including IBRD study on models

e) Long term contract and commodity arrangements for fertilizers

- f) Direct use of rock phosphate as fertilizer
- g) Terminology of plant nutrients
- h) Reporting statistics on calendar year basis discussion
- i) Model on marketing fertilizers
ASEAN group region

Friday, 19 March 1976 (9:00 a.m.)

VII. Background Data, Preparation of New Projects

- VIII. a) Comments on IFDC Report
"The Potential for Regional Co operation
in Fertilizers"
- b) Comments on data on socialist countries

Background Papers

UNIDO

- | | <u>Symbol No.</u> |
|--|-------------------|
| 1. Annual Report of the Executive Director 1975
(Industrial Development Board, Vienna, April 1976) | ID/B/160 |
| 2. Minutes of the Twelve Meetings of the UNIDO/FAO/IBRD
Working Group on Fertilizers, 18 February 1976 | UNIDO/IOD.7 |
| 3. Workshop in Fertilizer Technology
Final Report, 2 February 1976 | ID/WG.220/2 |
| 4. A Fertilizer Bulk Blending and Bagging Plant
Monograph No.8 | ID/SER.F/8 |
| 5. Report on Fertilizer Production Facilities in
Socialist Countries | |

IFDC

- | | |
|---|----------|
| 1. The Potential for Regional Co-operation in
Fertilizers, A Methodology Study
Technical Bulletin | IFDC-T-2 |
|---|----------|

Appendix 3

17 March 1976

UNIDO/FAO/IBRD WORKING GROUP ON FERTILIZERS

13TH MEETING

Vienna, Austria, 15 - 19 March 1976

LIST OF PARTICIPANTS

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Table I. WORLD NITROGEN FERTILIZER SUPPLY CAPABILITIES, DEMAND AND BALANCES 1/

(million metric tons N)

	1978/79		1979/80		1980/81		Supply	Demand	Balance	Supply	Demand	Balance	Supply	Demand	Balance
	Supply	Demand	Supply	Demand	Supply	Demand									
<u>Developing Market Economies</u>	21.80	17.77	25.27	22.26	25.13	23.20	20.00	18.00	2.00	25.00	23.00	2.00	20.00	18.00	2.00
North America	5.00	4.00	11.29	11.24	11.00	11.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Western Europe	9.01	7.52	9.17	7.03	9.00	8.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Oceania	0.10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Other Dev. Market Econ.	6.69	6.25	6.81	6.49	6.60	6.60	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<u>Developing Market Economies</u>	4.00	7.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Africa	0.10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Latin America	1.04	1.98	1.45	2.10	1.56	2.20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Near East	0.82	1.15	0.91	1.30	1.11	1.71	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Far East	2.33	3.67	3.40	5.17	3.50	4.68	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<u>Centrally Planned Economies</u>	14.33	14.00	10.09	11.11	15.60	17.88	15.00	15.00	0.00	15.00	15.00	0.00	15.00	15.00	0.00
Asia	3.34	4.20	3.50	4.03	3.80	4.30	3.50	4.00	-0.50	3.50	4.00	-0.50	3.50	4.00	-0.50
Europe & U.S.S.R.	10.99	10.40	12.57	11.91	11.80	13.58	11.50	11.00	0.50	11.50	11.00	0.50	11.50	11.00	0.50
<u>World Total</u>	40.52	38.67	44.11	40.18	44.23	45.38	44.23	44.23	0.00	44.23	44.23	0.00	44.23	44.23	0.00
				1979/80		1980/81									
<u>Developed Market Economies</u>	24.19	21.15	25.27	22.26	25.13	23.20	25.13	23.20	1.93	25.13	23.20	1.93	25.13	23.20	1.93
North America	10.72	10.61	11.29	11.24	11.00	11.00	11.00	11.00	0.00	11.00	11.00	0.00	11.00	11.00	0.00
Western Europe	10.71	9.07	11.12	9.57	11.07	9.00	11.07	9.00	2.07	11.07	9.00	2.07	11.07	9.00	2.07
Oceania	0.22	0.20	0.22	0.20	0.20	0.20	0.20	0.20	0.00	0.20	0.20	0.00	0.20	0.20	0.00
Other Dev. Market Econ.	2.54	1.21	2.68	1.57	2.69	1.53	2.69	1.53	1.16	2.69	1.53	1.16	2.69	1.53	1.16
<u>Developing Market Economies</u>	3.95	11.06	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Africa	0.44	0.69	0.53	0.77	0.60	0.63	0.60	0.63	0.03	0.60	0.63	0.03	0.60	0.63	0.03
Latin America	2.04	2.70	2.21	2.94	2.33	3.21	2.33	3.21	0.88	2.33	3.21	0.88	2.33	3.21	0.88
Near East	1.82	1.65	2.50	1.98	2.59	2.24	2.59	2.24	0.35	2.59	2.24	0.35	2.59	2.24	0.35
Far East	3.65	5.82	5.81	6.49	6.60	7.27	6.60	7.27	0.67	6.60	7.27	0.67	6.60	7.27	0.67
<u>Centrally Planned Economies</u>	21.00	19.71	22.53	21.05	23.73	22.44	23.73	22.44	1.29	23.73	22.44	1.29	23.73	22.44	1.29
Asia	5.53	5.69	5.87	5.96	5.95	6.24	5.95	6.24	0.29	5.95	6.24	0.29	5.95	6.24	0.29
Europe & U.S.S.R.	15.47	14.02	16.82	15.10	17.78	16.20	17.78	16.20	1.58	17.78	16.20	1.58	17.78	16.20	1.58
<u>World Total</u>	54.11	51.92	58.85	55.00	62.10	59.38	62.10	59.38	2.72	62.10	59.38	2.72	62.10	59.38	2.72

1/ See notes to the tables.

Table II. WORLD PHOSPHATE FERTILIZER SUPPLY CAPABILITIES, DEMAND AND BALANCES
(million metric tons P₂O₅)

	1976/77										1977/78									
	FAP	UI	PI	S	D	I.R.	CF	B	E		FAP	UI	PI	S	D	I.R.	CF	B	E	
<u>Developed Market Economies</u>	10.06	5.54	1.40	11.03	+0.27	13.73	1.0	17.2	41.42											
North America	7.93	0.80	0.75	4.29	+1.29	7.07	0.7	7.07	+1.17											
Western Europe	3.22	3.31	1.53	5.05	+1.25	3.01	3.01	3.01	+1.56											
Oceania	0.11	1.04	1.13	0.87	+0.16	0.11	1.04	0.11	+0.17											
Other Dev. Market Econ.	0.75	0.41	1.15	1.05	+0.11	0.78	0.41	1.19	+0.11											
<u>Developing Market Economies</u>	1.42	0.70	3.30	3.58	-1.26	1.13	3.21	3.12	-1.02											
Africa	0.37	0.16	0.53	0.31	+0.22	0.73	0.16	0.53	+0.10											
Latin America	0.56	0.39	0.73	1.02	-0.37	0.29	0.39	1.02	-0.17											
Near East	0.27	0.20	0.67	0.52	-0.25	0.29	0.20	0.67	-0.10											
Far East	0.42	0.10	0.97	1.12	-0.54	0.45	0.17	0.97	-0.35											
<u>Centrally Planned Economies</u>	2.16	5.65	7.81	7.47	+0.34	2.50	5.76	7.81	+0.27											
Asia	0.01	1.70	1.51	1.55	-0.01	0.02	1.01	1.55	+0.07											
Europe & U.S.S.R.	2.15	4.15	6.30	5.92	+0.38	2.48	4.25	6.41	+0.22											
<u>World Total</u>	13.64	12.03	25.72	26.02	+0.29	15.80	10.01	23.62	+0.21											
<u>Available World Supply</u>	-	-	23.60	22.69	+1.71	-	-	27.21	+3.39											
1977/78																				
<u>Developed Market Economies</u>	12.37	5.74	18.11	12.84	+5.27	12.90	5.66	19.51	41.60											
North America	7.40	0.75	5.15	5.30	+0.85	7.52	0.72	5.90	+0.72											
Western Europe	3.78	3.10	3.63	5.30	+1.58	3.50	3.01	5.00	+1.35											
Oceania	0.11	1.46	1.53	1.12	+0.47	0.11	1.46	1.22	+0.20											
Other Dev. Market Econ.	1.03	0.41	1.43	1.12	+0.37	1.17	0.41	1.17	+0.01											
<u>Developing Market Economies</u>	2.44	1.53	2.17	2.0	-0.22	3.01	1.70	2.62	-0.50											
Africa	0.97	0.20	1.17	0.37	+0.70	1.15	0.30	0.51	+0.37											
Latin America	0.48	0.42	0.70	1.74	-0.34	0.59	0.42	1.09	-0.60											
Near East	0.33	0.22	0.53	0.37	-0.22	0.27	0.22	0.37	-0.17											
Far East	0.66	0.19	0.85	1.30	-0.52	0.87	0.19	1.30	-0.42											
<u>Centrally Planned Economies</u>	2.82	5.94	8.27	8.41	+0.28	3.01	6.72	8.02	+0.28											
Asia	0.05	1.03	1.02	1.71	+0.01	0.02	1.77	1.02	-0.01											
Europe & U.S.S.R.	2.79	4.25	7.64	6.76	+0.28	2.96	4.36	7.11	+0.28											
<u>World Total</u>	7.63	12.71	30.34	25.50	+4.72	15.92	12.80	27.20	+1.61											
<u>Available World Supply</u>	-	-	20.93	25.50	+3.57	-	-	30.25	+0.03											

See notes to the tables. NOTE: IAP = Fertilizer Supply; CF = Other Fertilizer Supply; I.R. = Fertilizer Supply; B = Demand; E = Excess.

Table II. (cont'd)

	1980/81					1981/82				
	IAE	CP	IF	D	B	IAE	CP	IF	D	B
<u>Developed Market Economies</u>	19.88	5.58	10.80	15.78	44.88	19.88	5.58	10.80	15.78	44.88
North America	7.74	0.90	6.87	10.70	42.71	7.74	0.90	6.87	10.70	42.71
Western Europe	6.03	0.00	7.00	5.80	+1.40	6.03	0.00	7.00	5.80	+1.40
Oceania	0.11	1.40	1.29	1.40	+0.11	0.11	1.40	1.29	1.40	+0.11
Other Dev. Market Econ.	1.44	0.41	1.67	1.68	+0.66	1.44	0.41	1.67	1.68	+0.66
<u>Developing Market Economies</u>	3.08	1.18	4.56	3.18	-0.82	3.08	1.18	4.56	3.18	-0.82
Africa	1.30	0.21	1.51	0.95	+0.94	1.30	0.21	1.51	0.95	+0.94
Latin America	0.71	0.42	1.13	2.09	-0.96	0.71	0.42	1.13	2.09	-0.96
Near East	0.42	0.22	0.64	0.82	-0.18	0.42	0.22	0.64	0.82	-0.18
Far East	0.95	0.33	1.28	1.72	-0.44	0.95	0.33	1.28	1.72	-0.44
<u>Centrally Planned Economies</u>	5.15	0.22	0.40	0.00	-0.64	5.15	0.22	0.40	0.00	-0.64
Asia	0.03	1.95	1.93	1.00	-0.10	0.03	1.95	1.93	1.00	-0.10
Europe & U.S.S.R.	3.15	4.37	7.32	7.46	+0.64	3.15	4.37	7.32	7.46	+0.64
<u>World Total</u>	19.88	12.98	30.82	28.92	43.97	19.88	12.98	30.82	28.92	43.97
<u>Available World Supply</u>	-	-	31.25	28.89	+2.36	-	-	32.37	30.55	+2.02
1980/81										
<u>Developed Market Economies</u>	13.95	1.30	19.81	15.50	43.74	13.95	1.30	19.81	15.50	43.74
North America	7.98	0.53	8.81	6.10	+2.51	7.98	0.53	8.81	6.10	+2.51
Western Europe	4.18	2.87	7.05	6.30	+0.75	4.18	2.87	7.05	6.30	+0.75
Oceania	0.11	1.48	1.59	1.70	-0.11	0.11	1.48	1.59	1.70	-0.11
Other Dev. Market Econ.	1.58	0.41	1.99	1.40	+0.59	1.58	0.41	1.99	1.40	+0.59
<u>Developing Market Economies</u>	4.67	1.25	5.92	5.83	+0.09	4.67	1.25	5.92	5.83	+0.09
Africa	1.65	0.22	1.87	0.82	-1.25	1.65	0.22	1.87	0.82	-1.25
Latin America	1.12	0.42	1.54	2.40	-0.66	1.12	0.42	1.54	2.40	-0.66
Near East	0.86	0.22	1.08	0.86	+0.12	0.86	0.22	1.08	0.86	+0.12
Far East	1.04	0.30	1.43	1.81	-0.42	1.04	0.30	1.43	1.81	-0.42
<u>Centrally Planned Economies</u>	3.37	6.40	9.77	10.42	-0.65	3.37	6.40	9.77	10.42	-0.65
Asia	0.10	2.00	2.10	2.25	-0.15	0.10	2.00	2.10	2.25	-0.15
Europe & U.S.S.R.	3.27	4.40	7.67	8.17	-0.50	3.27	4.40	7.67	8.17	-0.50
<u>World Total</u>	21.89	13.04	34.93	31.75	43.18	21.89	13.04	34.93	31.75	43.18
<u>Available World Supply</u>	-	-	33.18	31.75	+1.43	-	-	33.18	31.75	+1.43

NOTE: FAP = Phos Acid Supply
 CP = Other Phosphate
 IF = Total Phosphate Supply
 D = Demand
 B = Balance

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Table III. WORLD POTASH FERTILIZER SUPPLY, CAPABILITIES, DEMAND AND BALANCE^{1/}(million metric tons K₂O)

	1974/75			1975/76			1976/77			1977/78		
	Supply	Demand	Balance	Supply	Demand	Balance	Supply	Demand	Balance	Supply	Demand	Balance
<u>Developed Market Economies</u>	13.70	10.18	+3.52	16.64	10.53	+6.11	17.05	11.15	+5.90	17.52	11.26	+6.16
North America	7.75	4.23	+3.52	10.17	4.36	+5.79	10.18	4.58	+5.60	10.24	4.72	+5.46
Western Europe	5.30	4.86	+0.44	5.80	5.03	+0.77	6.20	5.40	+0.80	6.54	5.36	+1.18
Oceania	-	0.22	-0.22	0.03	0.28	-0.25	0.03	0.31	-0.28	0.03	0.34	-0.31
Other Dev. Market Econ.	0.65	0.87	-0.22	0.64	0.84	-0.20	0.64	0.86	-0.22	0.71	0.82	-0.17
<u>Developing Market Economies</u>	0.30	2.07	-1.77	0.32	2.25	-1.93	0.32	2.54	-2.16	0.42	2.23	-2.41
Africa	0.29	0.21	+0.08	0.30	0.21	+0.09	0.35	0.22	+0.13	0.39	0.24	+0.15
Latin America	0.01	0.96	-0.95	0.02	1.05	-1.03	0.03	1.16	-1.13	0.03	1.28	-1.25
Near East	-	0.05	-0.05	-	0.03	-0.03	-	0.03	-0.03	-	0.04	-0.04
Far East	-	0.85	-0.85	-	0.96	-0.96	-	1.13	-1.13	-	1.27	-1.27
<u>Centrally Planned Economies</u>	2.75	7.68	+2.07	12.27	8.21	+4.06	12.50	9.03	+3.47	12.55	9.80	+2.75
Asia	0.30	0.63	-0.33	0.30	0.71	-0.41	0.30	0.74	-0.44	0.30	0.78	-0.48
Europe & U.S.S.R.	9.45	7.05	+2.40	11.97	7.50	+4.47	12.20	8.29	+3.91	12.25	9.02	+3.23
<u>World Total</u>	23.75	19.93	+3.82	29.23	20.93	+8.24	29.93	22.72	+7.21	30.42	23.93	+6.50
<u>Available World Supply</u>	21.71	19.93	+1.78	28.06	20.99	+7.07	28.74	22.72	+6.02	29.27	23.99	+5.28
	1979/80											
<u>Developed Market Economies</u>	17.72	11.77	+5.95	17.95	12.23	+5.72	18.41	12.68	+5.73	18.41	12.68	+5.73
North America	10.19	4.93	+5.20	10.18	5.21	+4.97	10.43	5.44	+4.99	10.43	5.44	+4.99
Western Europe	6.78	5.51	+1.27	6.93	5.70	+1.23	7.03	5.88	+1.15	7.03	5.88	+1.15
Oceania	0.04	0.36	-0.32	0.05	0.38	-0.33	0.06	0.40	-0.34	0.06	0.40	-0.34
Other Dev. Market Econ.	0.71	0.91	-0.20	0.79	0.94	-0.15	0.89	0.96	-0.07	0.89	0.96	-0.07
<u>Developing Market Economies</u>	0.47	3.11	-2.64	0.47	3.41	-2.94	0.57	3.58	-3.01	0.57	3.58	-3.01
Africa	0.39	0.25	+0.14	0.39	0.26	+0.13	0.44	0.27	+0.17	0.44	0.27	+0.17
Latin America	0.08	1.42	-1.34	0.08	1.61	-1.53	0.08	1.67	-1.59	0.08	1.67	-1.59
Near East	-	0.04	-0.04	-	0.04	-0.04	0.05	0.04	+0.01	0.05	0.04	+0.01
Far East	-	1.40	-1.40	-	1.50	-1.50	-	1.60	-1.60	-	1.60	-1.60
<u>Centrally Planned Economies</u>	12.65	10.67	+1.98	13.60	11.43	+2.17	13.70	12.30	+1.40	13.70	12.30	+1.40
Asia	0.30	0.81	-0.51	0.30	0.86	-0.56	0.30	0.94	-0.64	0.30	0.94	-0.64
Europe & U.S.S.R.	12.35	9.86	+2.49	13.30	10.57	+2.73	13.40	11.36	+2.04	13.40	11.36	+2.04
<u>World Total</u>	30.64	25.55	+5.09	32.02	27.07	+4.95	32.65	23.56	+9.09	32.65	23.56	+9.09
<u>Available World Supply</u>	29.61	25.55	+4.06	30.74	27.07	+3.67	31.37	23.56	+7.81	31.37	23.56	+7.81
	1980/81											
<u>Developed Market Economies</u>	17.72	11.77	+5.95	17.95	12.23	+5.72	18.41	12.68	+5.73	18.41	12.68	+5.73
North America	10.19	4.93	+5.20	10.18	5.21	+4.97	10.43	5.44	+4.99	10.43	5.44	+4.99
Western Europe	6.78	5.51	+1.27	6.93	5.70	+1.23	7.03	5.88	+1.15	7.03	5.88	+1.15
Oceania	0.04	0.36	-0.32	0.05	0.38	-0.33	0.06	0.40	-0.34	0.06	0.40	-0.34
Other Dev. Market Econ.	0.71	0.91	-0.20	0.79	0.94	-0.15	0.89	0.96	-0.07	0.89	0.96	-0.07
<u>Developing Market Economies</u>	0.47	3.11	-2.64	0.47	3.41	-2.94	0.57	3.58	-3.01	0.57	3.58	-3.01
Africa	0.39	0.25	+0.14	0.39	0.26	+0.13	0.44	0.27	+0.17	0.44	0.27	+0.17
Latin America	0.08	1.42	-1.34	0.08	1.61	-1.53	0.08	1.67	-1.59	0.08	1.67	-1.59
Near East	-	0.04	-0.04	-	0.04	-0.04	0.05	0.04	+0.01	0.05	0.04	+0.01
Far East	-	1.40	-1.40	-	1.50	-1.50	-	1.60	-1.60	-	1.60	-1.60
<u>Centrally Planned Economies</u>	12.65	10.67	+1.98	13.60	11.43	+2.17	13.70	12.30	+1.40	13.70	12.30	+1.40
Asia	0.30	0.81	-0.51	0.30	0.86	-0.56	0.30	0.94	-0.64	0.30	0.94	-0.64
Europe & U.S.S.R.	12.35	9.86	+2.49	13.30	10.57	+2.73	13.40	11.36	+2.04	13.40	11.36	+2.04
<u>World Total</u>	30.64	25.55	+5.09	32.02	27.07	+4.95	32.65	23.56	+9.09	32.65	23.56	+9.09
<u>Available World Supply</u>	29.61	25.55	+4.06	30.74	27.07	+3.67	31.37	23.56	+7.81	31.37	23.56	+7.81

^{1/} See notes to the tables

Table IV. NITROGEN, PHOSPHATE AND POTASH CAPACITY, 1974/75 - 1980/81, BY REGIONS^{1/}
(million metric tons nutrients)

	1974/75			1975/76			1976/77			1977/78		
	N	P ₂ O ₅	K ₂ O	N	P ₂ O ₅	K ₂ O	N	P ₂ O ₅	K ₂ O	N	P ₂ O ₅	K ₂ O
<u>Developed Market Economies</u>	34.22	14.98	17.17	35.27	15.57	17.19	36.79	16.77	17.81	39.12	17.00	16.09
North America	14.71	6.53	10.18	15.23	8.85	10.32	16.38	9.13	10.34	16.57	7.13	10.40
Western Europe	14.62	4.89	6.34	14.35	5.10	6.19	15.25	5.21	6.19	15.38	5.44	6.94
Oceania	0.42	0.12	-	0.26	0.19	0.03	0.46	0.19	0.03	0.46	0.19	0.03
Other Dev. Market Econ.	4.47	1.37	0.65	4.62	1.37	0.65	4.69	2.24	0.65	4.71	2.24	0.72
<u>Developing Market Economies</u>	8.61	3.79	0.32	9.58	3.44	0.32	10.88	4.53	0.38	14.00	5.28	0.43
Africa	0.41	0.86	0.30	0.41	1.36	0.30	0.41	1.52	0.35	0.41	1.85	0.40
Latin America	2.50	0.80	0.02	2.76	0.80	0.02	3.22	1.13	0.03	3.96	1.14	0.03
Near East	1.71	0.58	-	1.83	0.58	-	2.20	0.70	-	3.02	0.70	-
Far East	4.02	0.55	-	4.58	0.70	-	5.05	1.18	-	6.58	1.29	-
<u>Centrally Planned Economies</u>	27.34	3.97	11.10	30.24	4.64	13.30	32.97	4.86	13.55	34.86	5.06	13.50
Asia	8.67	0.05	0.30	9.16	0.10	0.30	10.85	0.10	0.30	12.63	0.10	0.30
Europe & U.S.S.R.	18.67	3.91	10.80	21.08	4.54	13.00	22.02	4.76	13.25	22.23	4.96	13.30
<u>World Total</u>	<u>70.15</u>	<u>24.74</u>	<u>28.59</u>	<u>75.09</u>	<u>23.65</u>	<u>30.91</u>	<u>80.54</u>	<u>26.16</u>	<u>31.54</u>	<u>87.98</u>	<u>27.01</u>	<u>32.12</u>
	1978/79			1979/80			1980/81					
<u>Developed Market Economies</u>	40.53	17.72	18.30	41.30	18.02	18.53	41.63	18.02	18.99	41.63	18.02	18.99
North America	16.87	9.70	10.35	19.24	9.70	10.34	19.24	9.70	10.59	19.24	9.70	10.59
Western Europe	16.29	5.59	7.19	16.57	5.69	7.34	17.00	5.69	7.44	17.00	5.69	7.44
Oceania	0.45	0.19	0.04	0.26	0.19	0.05	0.46	0.19	0.06	0.46	0.19	0.06
Other Dev. Market Econ.	4.71	2.24	0.72	4.93	2.44	0.80	4.93	2.44	0.90	4.93	2.44	0.90
<u>Developing Market Economies</u>	18.69	5.32	0.48	20.41	6.83	0.48	21.75	7.22	0.58	21.75	7.22	0.58
Africa	0.20	1.85	0.40	1.07	2.37	0.40	1.07	2.37	0.45	1.07	2.37	0.45
Latin America	4.64	1.39	0.08	4.64	1.80	0.06	4.97	1.80	0.08	4.97	1.80	0.08
Near East	4.02	0.50	-	4.57	1.21	-	4.64	1.60	0.05	4.64	1.60	0.05
Far East	9.22	1.29	-	10.33	1.41	-	11.07	1.41	-	11.07	1.41	-
<u>Centrally Planned Economies</u>	37.13	5.17	12.70	40.22	5.41	14.75	40.77	5.41	14.85	40.77	5.41	14.85
Asia	13.01	0.10	0.30	13.01	0.20	0.30	13.01	0.20	0.30	13.01	0.20	0.30
Europe & U.S.S.R.	24.12	5.07	13.40	27.21	5.21	14.45	27.76	5.21	14.55	27.76	5.21	14.55
<u>World Total</u>	<u>90.15</u>	<u>28.22</u>	<u>32.48</u>	<u>101.93</u>	<u>30.26</u>	<u>33.76</u>	<u>104.15</u>	<u>30.65</u>	<u>34.42</u>	<u>104.15</u>	<u>30.65</u>	<u>34.42</u>

^{1/} See notes to the tables

Notes for Tables I. through IV.

The forecasts of supply and demand were prepared by the FAO/UNIDO/IBRD Working Group on Fertilizers in co-operation with representatives of USDA, TVA and fertilizer industry organizations in April 1976.

a. Capacity

Estimates of capacity are based on existing capacities plus information on new projects under construction or firmly committed through the end of March 1976 (Table IV.) Nitrogen (N) capacity is for anhydrous ammonia only, which, however, is the basis for some 91 per cent of nitrogenous fertilizers. P_2O_5 capacity is for wet-process phosphoric acid only, which was the basis for about 53 per cent of phosphatic fertilizers in 1974/75. Capacities of new ammonia and phosphoric acid plants were taken at their nameplate rated daily capacities multiplied by 330 days of yearly operation except for India where yearly operations rates of phosphoric acid plants were for 310 days. Potash capacity is based on marketable production of potash minerals assuming 330 days of yearly operation.

b. Production and Available Supply

In order to arrive at estimates of fertilizer nitrogen supply, estimates were first made of total production for all purposes. A sliding scale adjustment was applied to the capacity figures for new plants and to expansions to compensate for capacity utilization which usually is low initially, gradually improving over the phasing-in period of three years. Average capacity utilization of new nitrogen plants after this period was taken as 70 per cent. In the case of phosphoric acid plants, 90 per cent capacity utilization was assumed for the developed countries and centrally planned economies of Eastern Europe and 80 per cent for developing countries and centrally planned economies of Asia after three years.

To arrive at the available supply of fertilizer nitrogen, deductions were made from production to account for nitrogen used for non-fertilizer purposes, for process losses and for losses in transportation, storage and handling (Table I).

Essentially the same procedure was adopted for phosphoric acid, except that regionally, no deduction was made for non-fertilizer uses in the developing countries and the centrally planned economies of Asia. Also, to arrive at total P_2O_5 available for fertilizer purposes, the P_2O_5 content of phosphatic fertilizers other than those based on wet-process phosphoric acid was added (Table II).

In the case of potash the regional figures in Table 9 are for potash supply capabilities after deducting processing, transportation, handling and storage losses from production. To arrive at total available world supply of potash for fertilizers, the world totals of supply capabilities were adjusted to account for non-fertilizer uses.

c. Demand

The demand forecasts in Tables I, II and III are based on what is expected to be the demand which takes into consideration the absorptive capacity of both farmers and countries. The absorptive capacity of farmers may be constrained by either or both their awareness of the benefits of using fertilizers or their ability to buy (involving both availability and price). Assuming adequate

world supplies, the absorptive capacity of a country may be constrained by availability of foreign exchange and/or its ability to pursue a domestic agricultural policy which creates a favourable economic climate for fertilizer use. Although these considerations cannot be quantified, they are implicit in the demand forecasts. Also implicit in the forecasts is an assumption on prices which are assumed to be below the peaks of 1973 and 1974, but not approaching the very low levels of 1971/72. Furthermore, the set-back in consumption experienced in 1974/75 was also taken into account in forecasting demand.

d. Regional Groupings

The grouping of countries used in the tables is on the basis of the United Nations economic and regional classification.

Addendum

to the Minutes of the 13th Meeting of the UNIDO/FAO/IBRD Working
Group on Fertilizers

Vienna, Austria, 15 - 18 March 1976

UNIDO Headquarters

Subject: Minutes of the Supplementary Meeting on Supply/Demand
Projections held at the Centre d'Etude de l'Azote (CEA)
Zurich, Switzerland, 14 - 15 April 1976

INTRODUCTION

As agreed upon at the 13th Meeting of the Working Group at UNIDO Headquarters in Vienna, the supplementary meeting was attended by representatives of UNIDO, FAO, IBRD and the Centre d'Etude de l'Azote. The following topics were discussed:

- (i) Nitrogen fertilizer supply/demand and balances 1974/75 - 1980/81, by countries, regions and world total;
- (ii) Phosphate fertilizer supply capabilities, demand and balances, by regions and world total;
- (iii) Potash supply capabilities, demand and balance, by regions and world total;
- (iv) Revision of additions to wet process phosphoric acid plants.

A consensus was reached on the final supply/demand balances and forecasts.

Nitrogen

Tabulations prepared by CEA were reviewed country by country. While taking seriously into account demand projections and comparisons of the expected consumption levels for 1979/80 based on the least square root method developed by Prof. R. Ewell, several amendments and changes to supply and demand figures were made for a number of major consuming and producing countries on the basis of UNIDO, FAO and Bank estimates. In some countries existing large stocks were taken into consideration. It was assumed, however, that those will gradually be levelled off through 1977/78 - 1980/81 and hence no longer affect the supply/demand balances by end of the decade.

The final summary of the agreed figures is annexed as Table I.

Phosphate

Some further corrections to the list of anticipated additions to wet process phosphoric acid capacities which were discussed at the Vienna meeting have been found necessary. Finally agreed figures are now included in the summary table of world phosphate fertilizer supply capabilities, demand and balances, by regions and world total (Table II). Corrections were made for USA, Belgium, Brazil, Iran, Jordan, India and the USSR, as compared with the list presented by UNIDO after the Vienna meeting and for Poland and the USSR with respect to IBRD's summary table.

Potash

The summary of capacities and the supply/demand balances as prepared by IBRD were reviewed and adopted for distribution along with the minutes of the meeting (Table III).

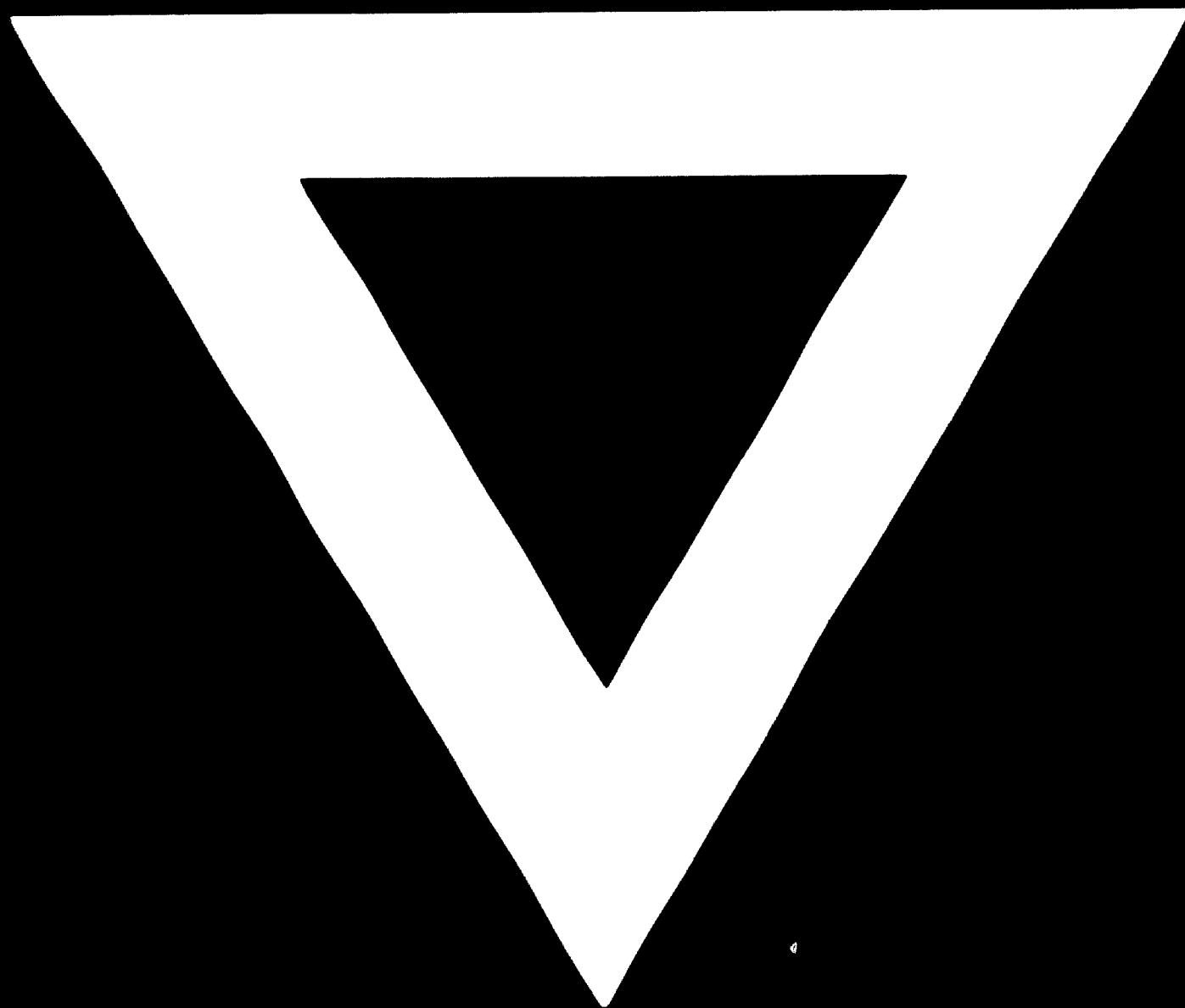
General Agreements

It was agreed that any tables showing country or company data on capacities, production, available supplies, past consumption and projected demand compiled by the Working Group should be kept within the Group as working papers. These papers should not be released to invited participants and attendants from the various organizations taking part as observers in the Working Group meetings.

Regional and global summaries on N, P_2O_5 and K_2O shall be annexed to the minutes of the meeting. Figures presented therein are regarded as the official view of the Working Group as of 15 April 1976. Therefore, Table I, II and III may be disseminated and quoted wherever and whenever necessary.

Supply as denominated in the summary of the nitrogen fertilizer balances has to be understood as available supply to agriculture. Figures shown as "supply" up to 1976/77 are nearer to the definition "supply expectations" whereas those up to 1980/81 are nearer to "supply capabilities" of the respective countries.

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