UNITED NATIONS INDUSTRIAL DEVELOPMENT ORGANIZATION
Vienna International Centre, P.O. Box 300, 1400 Vienna, Austria
Tel: (+43-1) 26026-0 · www.unido.org · unido@unido.org

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Second Consultation Meeting on the
Fertilizer Industry

Innsbruck, Austria, 6 - 10 November 1978

Agenda item 3 (c) Background Paper

CONTINUOUS MONITORING OF THE GROWTH OF FERTILIZER CAPACITY AT THE NATIONAL, REGIONAL AND GLOBAL LEVELS IN ORDER TO FACILITATE A BALANCED GROWTH OF THE WORLD FERTILIZER INDUSTRY *

by the UNIDO secretariat

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Organisation des Nations Unies pour le développement industriel

Deuxième Réunion de consultation
sur l'industrie des engrais

Innsbruck (Autriche), 6-10 novembre 1978

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Document d'information

SURVEILLANCE CONTINUE DE LA CROISSANCE DES CAPACITES DE PRODUCTION D'ENGRAIS AUX NIVEAUX NATIONAL, REGIONAL ET MONDIAL POUR FACILITER LE DEVELOPPEMENT EQUILIBRE DE L'INDUSTRIE MONDIALE DES ENGRAIS*

RESUME

établi par le Secrétariat de l'ONUDI

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* Le présent document est la traduction d'un texte qui n'a pas fait l'objet d'une mise au point rédactionnelle. Il contient seulement quelques pages extraites du document intégral.

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IV. CONCLUSIONS ET RECOMMANDATIONS

A. Perspectives à court et à moyen terme en ce qui concerne les trois éléments fertilisants contenus dans les engrais

70. Les capacités de production d'engrais azotés, phosphatés et potassiques existant dans le monde suffiront presque certainement pour répondre à l'accroissement probable de la demande d'ici à 1982. La demande risque davantage de dépasser l'offre dans le cas des engrais potassiques et phosphatés que dans celui des engrais azotés.

71. Entre 1975 et 1982, les pays en développement considérés ensemble deviendront autosuffisants en ce qui concerne les engrais phosphatés (c'est-à-dire ils en exporteront autant qu'ils en importeront), cependant, ils resteront de gros importateurs (3 millions de tonnes par an) d'engrais azotés. La potasse nécessaire à leurs besoins continuera pour l'essentiel à être importée.

72. Entre 1982 et 1987, il faudra créer dans le monde des capacités nouvelles pour produire de l'ammoniac correspondant à 30 millions de tonnes d'azote, on a fait état de plans de caractère encore assez général concernant la création de nouvelles capacités de production qui fourniraient 14,5 millions de tonnes d'azote. Pour devenir autosuffisants d'ici à 1987, les pays en développement auront besoin de nouvelles usines d'ammoniac fournissant l'équivalent de 17 millions de tonnes d'azote; des plans de caractère encore peu précis concernant la construction de capacités nouvelles correspondant à 9 millions de tonnes d'azote ont été annoncés.

73. Entre 1982 et 1987, les capacités mondiales de production d'engrais phosphatés devront augmenter de 7,7 tonnes de P_2O_5 et celles des pays en développement de 4,2 millions de tonnes de P_2O_5. Les nouvelles capacités de production d'acide phosphorique dont il est question dans des plans d'un caractère encore vague permettront la fabrication d'engrais phosphatés renfermant 3,3 millions de tonnes de P_2O_5 dans le monde entier, dont 1,6 million de tonnes dans les pays en développement (à supposer que 75 % de l'acide phosphorique soient utilisés pour la production d'engrais).

74. Pour ce qui est de la potasse, il existe dès maintenant des plans pour l'accroissement substantiel de la capacité d'extraction qui sera nécessaire entre 1980 et 1987. Par ailleurs, la production de potasse peut, d'une manière générale, être accrue plus vite que celle d'azote ou de phosphates.

75. Les nouvelles capacités de production d'engrais azotés ou phosphatés qui seront créées dans le monde entre a) 1975 et 1985 et b) 1985 et l'an 2000 seront implantées pour 50 % environ dans les pays en développement; cette proportion est de 20 % pour la potasse. On compte qu'en 1982, la part des pays en développement dans la production mondiale sera de 28 % pour l'azote, de 26 % pour les phosphates et de 2 % pour la potasse.

B. Suggestions en vue d'une meilleure surveillance des perspectives à court terme et à moyen terme

76. Pour surveiller en permanence la croissance des capacités de production d'engrais aux niveaux national, régional et mondial, il faut recueillir des renseignements exacts et les diffuser régulièrement. Pour ce faire, il faudra, de l'avis du Secrétariat de l'ONUDI :

i) Que tous les pays en développement ou développés soient prêts à coopérer avec l'ONUDI en lui communiquant des renseignements sur :

   a) Les plans concernant l'expansion des capacités existantes;

   b) Les capacités nouvelles en construction;

   c) Les plans fermes pour la création de capacités nouvelles;

   d) La mise hors service définitive de capacités existantes;

ii) Que l'ONUDI distribue régulièrement, tous les six mois, aux gouvernements et aux producteurs d'engrais un rapport sur les incidences de ces faits nouveaux sur le potentiel d'approvisionnement de l'industrie;

iii) Que l'ONUDI établisse, comme la réunion d'experts sur la coopération régionale entre pays en développement dans le domaine de l'industrie des engrais l'a recommandé, un répertoire des producteurs d'engrais;

iv) Que l'on réunisse des informations sur l'utilisation (passée, actuelle et prévue) des capacités pour compléter les renseignements sur le potentiel d'approvisionnement. A cet effet, les renseignements sur les taux d'utilisation des capacités dans les usines d'engrais au cours des dernières années devraient être communiqués à l'ONUDI.

C. <u>Suggestions en vue d'une meilleure surveillance des perspectives à long terme, 1985-2000</u>

77. L'ONUDI pourrait s'enquérir auprès de 20 à 30 pays de leurs vues en ce qui concerne la contribution accrue que les sources non classiques d'engrais (fixation directe de l'azote, biogaz, déchets urbains, etc.) pourraient apporter à l'approvisionnement en engrais au cours de la période 1985-2000, en particulier dans l'hypothèse d'une hausse substantielle des cours de l'énergie par rapport à leur niveau actuel.

78. Il faudrait étudier de près les avantages mutuels pouvant découler, au cours des années 80 et 90, de l'achat par les pays développés d'engrais finis (phosphates monoammoniques et biammoniques, urée, etc.) fabriqués dans les pays en développement ainsi que les matières premières et l'énergie nécessaire pour la production de ces engrais. Lors de la prochaine Réunion de consultation, cette étude pourrait servir de base à l'examen de l'évolution des structures de l'industrie dans le monde.

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Segunda Reunión de Consulta sobre la Industria de los Fertilizantes
Innsbruck (Austria), 6 - 10 noviembre 1978
Tema 3 c) del programa Documento de antecedentes

CONTINUA VIGILANCIA DEL CRECIMIENTO DE LA CAPACIDAD DE PRODUCCION DE FERTILIZANTES A NIVELES NACIONAL, REGIONAL Y MUNDIAL, A FIN DE FACILITAR EL CRECIMIENTO EQUILIBRADO DE LA INDUSTRIA MUNDIAL DE FERTILIZANTES

RESUMEN

preparado por la Secretaría de la ONUDI

El presente documento es traducción de un texto que no ha pasado por los servicios de edición de la Secretaría de la ONUDI. Solamente contiene páginas seleccionadas del documento íntegro.

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IV. CONCLUSIONES Y RECOMENDACIONES

A. Perspectivas a plazos corto y medio de los tres nutrientes que integran los fertilizantes

70. Hasta 1982, es casi seguro que la capacidad mundial de abastecimiento de fertilizantes a base de nitrógeno, fósforo y potasio bastará para hacer frente al crecimiento que probablemente experimente la demanda. Es más probable que la demanda imponga presiones sobre las capacidades de abastecimiento de potasa y fosfatos que sobre las de fertilizantes nitrogenados.

71. En el período de 1975 a 1982, el grupo de los países en desarrollo llegará a ser autosuficiente en fertilizantes fosfatados (es decir, exportará tanto como importe); sin embargo, seguirá importando grandes cantidades (3 millones de toneladas anuales) de fertilizantes nitrogenados. La mayor parte de sus necesidades de potasa seguirán satisfaciéndose mediante importaciones.

72. En el período de 1982 a 1987, el mundo necesitará nueva capacidad de producción de amoniaco equivalente a 30 millones de toneladas de N; hasta la fecha se han anunciado planes indefinidos de crear nueva capacidad de producción de 14,5 millones de toneladas de N. Para que los países en desarrollo puedan alcanzar la autosuficiencia hacia 1987, necesitarán nueva capacidad de producción de amoniaco equivalente a 17 millones de toneladas de N; hasta la fecha se han anunciado planes indefinidos de construir nueva capacidad de producción de 9,0 millones de toneladas de N.

73. En el período de 1982 a 1987, el mundo entero y los países en desarrollo necesitarán aumentar la capacidad de producción de fertilizantes fosfatados en 7,7 y 4,2 millones de toneladas de P_2O_5, respectivamente. Conforme a los planes indefinidos de instalación de nueva capacidad de producción de ácido fosfórico, se producirá el equivalente de 3,3 y 1,6 millones de toneladas de P_2O_5 de fertilizantes fosfatados para todo el mundo y para los países en desarrollo, respectivamente (suponiendo que el 75% del ácido fosfórico se utilice para producir fertilizantes).

74. Respecto de la potasa, las perspectivas son que la mayor parte del considerable aumento de capacidad extractiva que se precisará en el período de 1982 a 1987 ya está planeada. Además, como regla general, la producción de potasa puede ampliarse con mayor rapidez que la de nitrógeno o fosfato.

75. Alrededor del 50% de la nueva capacidad que se establezca en el mundo en los períodos a) 1975 a 1985 y b) 1985 a 2000 para producir fertilizantes nitrogenados

y fosfatados estará ubicada en países en desarrollo; la cifra correspondiente a la potasa es del 20%. Se espera que, para 1982, la participación de los países en desarrollo en la producción mundial llegue al 2[illegible]% del nitrógeno, el 26% de los fosfatos y el 2% de la potasa.

B. Sugerencias para mejorar la vigilancia de las perspectivas a plazos corto y medio

76. Para vigilar de manera continua el crecimiento de la capacidad de producción de fertilizantes a los niveles nacional, regional y mundial es necesario obtener información precisa y difundirla regularmente. A juicio de la Secretaría de la ONUDI, esto exigirá:

i) La buena voluntad y cooperación de todos los países en desarrollo y desarrollados en cuanto a comunicar a la ONUDI

   a) planes de ampliación de las capacidades existentes,

   b) nueva capacidad en construcción,

   c) planes en firme de crear nueva capacidad, y

   d) cierre permanente de capacidades existentes;

ii) La distribución regular por la ONUDI, cada seis meses, a los gobiernos y empresas de fertilizantes de un informe sobre las repercusiones de estas novedades en la capacidad de abastecimiento de la industria;

iii) A este respecto, parece conveniente que la ONUDI prepare un repertorio de empresas de fertilizantes, según recomendó la Reunión de Expertos sobre Cooperación Regional en la Industria de los Fertilizantes;

iv) Debe ampliarse la información sobre la utilización de la capacidad (pasada, presente y futura) a fin de complementar la información disponible sobre capacidad de abastecimiento. Para ello será menester que se proporcione a la ONUDI información sobre los coeficientes de utilización de la capacidad logrados por plantas de fertilizantes en los últimos años.

C. Sugerencias para mejorar la vigilancia de las perspectivas a largo plazo, 1985-2000

77. La ONUDI podría ponerse en contacto con 20 a 30 países para recabar sus opiniones sobre la mayor contribución que probablemente aporten las fuentes no tradicionales de fertilizantes (fijación directa de nitrógeno, biogás, basuras municipales, etc.) al abastecimiento de los mismos en el período de 1985 a 2000 y, en particular, cuando los precios de la energía estén muy por encima de los niveles actuales.

78. Un estudio detallado de los beneficios mutuos que reportaría un aumento de las compras por países desarrollados, en los decenios de 1980 y 1990, de fertilizantes acabados (FMA, FDA, urea, etc.) fabricados en países en desarrollo con las materias primas y la energía necesarias para producirlos. Semejante estudio podría ser la base del examen de la cambiante estructura mundial de la industria en la siguiente reunión de consulta.

INTRODUCTION

1. The First Consultation Meeting recognized the urgent and imperative need for increasing fertilizer consumption in the world in order to augment agricultural output and food production. It recognized that the level of fertilizer consumption in the developed countries was already high and that the prospects for further substantial growth in consumption in those countries was relatively limited. The Meeting noted with regret, however, the very low levels of fertilizer consumption in the developing countries, and it urged that immediate steps be taken to stimulate consumption in those countries. (Paragraph 14 of The Report)

2. Consequently, the First Consultation Meeting 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.

The Consultation Meeting emphasized that the term "self-sufficiency" should be interpreted with reference not to the present low levels of fertilizer consumption but to a stimulated optimum level of consumption. (Paragraph 17 of the Report)

3. The First Consultation Meeting urged that during the period while the developing countries still needed to import progressively smaller amounts of fertilizers, steps should be taken to ensure the availability of adequate supplies at reasonable and stable prices. The Consultation Meeting took note of the estimate of global demand and supply of fertilizers made by a UNIDO/FAO/IBRD Working Group and the efforts being made by FAO and its Commission on Fertilizers to promote measures for price stabilization; it urged that those efforts should be intensified. (Paragraph 23 of the Report)

4. The First Consultation Meeting therefore proposed as one of the four subjects for more intense examination and investigation:

> "continuous monitoring of the growth of fertilizer production capacity at the national, regional and global level in order to facilitate a balanced growth of the world fertilizer industry."

(Paragraph 64 of the Report)

5. The First Consultation Meeting expressed its appreciation of the regional and global estimates of the supply and demand of fertilizers which were collected and published by a UNIDO/FAO/IBRD Working Group. It urged that group to continue its useful work and to improve further the information presented. (Paragraph 68 of the Report)

6. Bearing in mind this last recommendation, the UNIDO Secretariat recommended that instead of creating a new Working Group to examine this topic it should be covered by the existing UNIDO/FAO/World Bank Working Group on Fertilizers (henceforth called the Joint Working Group).

7. This report is therefore based on the forecasts of additions to capacity, capability to supply fertilizers and demand prepared by the Joint Working Group in June 1977 and June 1978. The statistical tables compiled by this group, with the help of representatives of the fertilizer industry and other bodies, are reproduced as Tables B1 to B5 of the Statistical Annex.

8. The policy of the Joint Working Group is to publish statistics at the world and regional levels and leave the reader to interpret them.

9. This report provides some comments on:

(a) the short-term outlook to 1978 - 82;

(b) the medium-term outlook to 1982 - 1987;

Since UNIDO was asked to undertake continuous monitoring of the growth of fertilizers and production capacity, it makes recommendation as to how the collection and dissemination of such information might be improved in the future.

I. THE OUTLOOK FOR NITROGEN FERTILIZERS

A. DEMAND FOR NITROGEN FERTILIZERS 1975 TO 2000

At the global level

10. World demand for nitrogen fertilizers is expected to increase from 43 million metric tons N in 1975 1/ to 57 million metric tons N in 1980, 78 million metric tons N in 1985, and 145 million metric tons N in 2000 as shown in the following table.

World Demand for Nitrogen Fertilizers 1975-2000 (million metric tons N)

	Actual 1965	Actual 1975	Forecast 1985	Forecast 2000	Increase 1965-75	1975-85	1985-2000
Developing Countries							
Market economies	2.4	7.7	19.0	45.5	5.3	11.3	26.5
C-P economies	1.6	4.8	10.0	18.0	3.2	5.2	8.0
	4.0	12.5	29.0	63.5	8.5	16.5	34.5
Developed Countries							
Market economies	10.9	19.2	27.6	40.6	9.3	8.4	13.0
C-P economies	3.9	11.5	21.5	41.5	7.6	10.0	20.0
	14.8	30.7	49.1	82.1	16.9	18.4	33.0
World Total	18.8	43.2	78.1	145.6	25.4	34.9	67.5
Developing Countries' share (per cent)	21.5	29	37	43.5	33.5	47.3	51.1

Source: Forecast 1985; Joint Working Group June 1977
Forecast 2000; Second UNIDO World Wide Study of the Fertilizer Industry 1975-2000

11. Thus for this type of fertilizer, the increase in developing countries' consumption is expected to account for about half of the increase in total world consumption in the period 1975-2000. By 2000, their share is forecast to exceed 40 per cent of world consumption.

1/ 1975 means the fertilizer year from 1 July 1975 to 30 June 1976.

At the regional level

12. Regional demand in developing countries for nitrogen fertilizers is expected to increase as shown in the following table. The African region excludes Egypt, Libya and Sudan which the FAO classifications include in the Near East region. 1/

Demand for Nitrogen Fertilizers in Developing Countries
(million metric tons N)

	Actual 1965	Actual 1975	Forecast 1985	Forecast 2000	Increase 1965-75	Increase 1975-85	Increase 1985-2000
Africa	0.15	0.44	1.40	2.31	0.29	0.96	0.91
Latin America	0.81	1.97	4.50	11.20	1.16	2.53	6.70
Near East	0.44	1.32	3.10	8.06	0.88	1.78	4.96
Far East	1.59	3.94	10.00	23.97	2.35	6.05	13.97
	3.01	7.67	19.00	45.54	4.66	11.33	26.54
Asia centrally-planned	2.14	4.82	10.00	17.91	2.68	5.18	7.91
Total	5.15	12.49	29.00	63.45	7.34	16.51	34.45

Source: Forecast 1985; Joint Working Group June 1977
Forecast 2000; Second UNIDO World Wide Study of the Fertilizer Industry 1975-2000

At the country level

13. Data on past consumption is available at the country level (Table A.5). The Joint Working Group did not agree to UNIDO's request to release its forecasts of demand at the country level.

14. In order to up-date country level data on forecast demand, countries are invited to inform UNIDO of their forecasts of fertilizer demand up to five years ahead and for ten years ahead when available.

1/ The FAO classification of countries into regions is given in Section D of the Statistical Annex. It is used here because the Joint Working Group Forecasts have been submitted in the past for the FAO Commission on Fertilizers in this format. UNIDO defines regions in a different way.

B. AVAILABLE SUPPLY OF NITROGEN FERTILIZER 1975 AND 1982

At the global level

15. The Joint Working Group forecasts supply capability for five years ahead. It uses estimates of existing and new production capacity to calculate what it terms "supply", the maximum supply capability of the industry in the year in question. The methodology used for this calculation is explained in the Notes attached as Part C of the Statistical Annex.

16. The forecast supply and demand of nitrogen fertilizers in 1982 is compared with the position in 1975 in the following table.

World Supply/Demand balance for Nitrogen Fertilizers 1975, 1982
(million metric tons N)

	1975				1982			
	Actual Capacity	Actual Production	Actual Demand	Production Surplus/ (Deficit)	Forecast Capacity	Forecast Supply	Forecast Demand	Forecast Surplus/ (Deficit)
Developing Countries								
Market economies	9.2	5.2	7.7	(2.5)	26.4	12.8	15.2	(2.4)
C-P economies	4.2	3.4	4.8	(1.4)	11.1	6.1	7.4	(1.3)
	13.4	8.6	12.5	(3.9)	37.5	18.9	22.6	(3.7)
Developed Countries								
Market economies	34.6	21.8	19.2	2.6	41.6	26.8	24.1	2.6
C-P economies	21.8	13.4	11.5	1.9	36.5	22.0	17.4	4.7
	56.4	35.2	30.7	4.5	78.1	48.8	41.5	7.3
WORLD TOTAL	69.8	43.8	43.2	0.6	115.6	67.7	64.1	3.6

Source: For 1982: UNIDO/FAO/World Bank Working Group on Fertilizers, June 1978
For 1975: FAO Monthly Bulletin of Statistics, April 1978

At the regional level

17. The capability to supply nitrogen fertilizers in developing countries is expected to increase as shown in the following table.

Developing Countries' supply/demand balance for Nitrogen Fertilizer (million MT N)

	1975				1982			
	Actual Capacity	Actual Production	Actual Demand	Estimated Deficit	Forecast Capacity	Forecast Supply	Forecast Demand	Forecast Deficit
Africa	0.39	0.14	0.44	0.30	1.10	0.37	0.82	0.45
Latin America	2.43	1.20	1.97	0.77	7.20	2.28	3.65	1.37
Near East	1.81	0.96	1.32	0.36	6.46	3.31	2.66	0.65
Far East	4.54	2.85	3.94	1.09	11.66	6.85	8.04	1.19
	9.17	5.15	7.67	2.52	26.42	12.81	15.17	2.36
Asia C-P	7.13	3.43	4.82	1.39	11.13	6.11	7.43	1.32
TOTAL	16.30	8.58	12.49	3.91	37.55	18.92	22.60	3.68

Source: For 1982 UNIDO/FAO/World Bank Working Group on Fertilizers, June 1978
For 1975 FAO Monthly Bulletin of Statistics, April 1978.

At the country level

18. The Joint Working Group has prepared a complete list of plants operating in 1973-4; additional capacity to produce ammonia added since June 1974 is tabulated according to the year it becomes available (Table B.5)

19. The Joint Working Group agreed that its information on additions to capacity in developing countries at the country level could be submitted to the Consultation Meeting; this is presented as Table B.5 in the Statistical Annex.

20. The Group regarded information on additions to capacity in developed countries as confidential and agreed to release only the regional totals for consideration at the Consultation Meeting.

C. MONITORING CAPACITY TO PRODUCE NITROGEN FERTILIZERS UP TO 1982

At the global level

21. At the global level, the Joint Working Group estimates suggest that world supply capability will exceed world demand as shown in the following table:

1977	0.66	million metric tons N
1978	1.56	million metric tons N
1979	2.28	million metric tons N
1980	3.36	million metric tons N
1981	4.35	million metric tons N
1982	3.59	million metric tons N

22. In 1982, the margin of safety is 5 per cent of world demand. If world demand grows 1 per cent faster each year than the Joint Working Group forecast (that is by 39 per cent instead of 34 per cent between 1977 and 1982), then this safety margin will disappear.1/

23. The supply/demand balance also depends on the accuracy of the supply forecasts. The forecast of world production capacity in 1977 that was made by the Joint Working Group in June 1975 has proved to be 4 million metric tons N too high. The change in forecast capacity (million metric tons N) are as follows:

	Forecast June 1975	Forecast June 1978	Change
Centrally Planned Economies	28.5	33.5	+5.0
Developed Market Economies	43.5	38.4	-5.1
Developing Market Economies	16.8	12.8	-4.0
	88.8	84.7	-4.1

The forecast in demand made in June 1975 has proved to be 2 million metric tons N (3 per cent) too high also.

1/ In practice, the margin would be much larger if supply capability can be improved by raising capacity utilisation to rates above the maximum assumed by the Joint Working Group.

24. Over the years, the Joint Working Group has become stricter and now includes in its estimates of additional capacity only plants under construction or firmly committed. The circumstances prior to 1975, when high prices stimulated a rush to build new capacity, have not been repeated in 1978; today prices are low. For all these reasons, an error in forecasting supply capability in 1982 as large as 4 million metric tons N seems unlikely.

25. Nevertheless the above discussion suggests some caution in interpreting the estimates of global supply/demand balance. There appears to be sufficient additional capacity planned to meet world demand up to 1982; but this assessment could perhaps change as time passes.

<u>At the regional level</u>

26. The estimates shown in paragraph 17 above suggest that developing countries will continue to need to import over 3 million metric tons N of fertilizers in 1982, the same level as in 1975. By 1982, developing countries will produce 84 per cent of their requirements compared to 69 per cent in 1975. This represents some progress towards the goal of self-sufficiency agreed at the First Consultation Meeting. It is for consideration whether it responds to the recommendation that developing countries achieve self-sufficiency "as soon as possible".

27. Of the four regions of developing countries, only those in the Near East will achieve a surplus by 1982. For Africa (excluding Egypt, Libya and Sudan), Asia and Latin America, the projected deficit (hence import requirements) are higher than they were in 1975.

28. However, in interpreting the balance estimated in paragraph 17 above, note must be taken that forecast supply in 1982 represents 34 per cent of all nameplate capacity in Africa, 32 per cent in Latin America, 51 per cent in the Near East and 59 per cent in the Far East compared to 64 per cent for the world as a whole. There should be considerable scope for achieving production levels above

those forecast by the Working Group.[1/]

At the country level

29. This is a task which Governments perform not UNIDO. However, UNIDO would appreciate receiving information on the results of such exercises.

MONITORING CAPACITY TO PRODUCE NITROGEN FERTILIZERS UP TO 1987

At the global level

30. Between 1982 and 1987, demand for nitrogenous fertilizers is expected to increase as shown in the following table. Additional capacity needed to meet this demand is calculated in the last column on the assumption that supply capability continues to be about 64 percent of capacity as estimated for 1982. This assumption should be discussed at Innsbruck.

Forecast Increase in Demand for Nitrogen Fertilizers 1982 - 1987 (million MT N)

	Forecast Demand 1982	Forecast Demand 1987	Increase 1982 to 1987	Increase needed in Supply Capability	
				Supply Capability	Ammonia Capacity
DEVELOPED COUNTRIES					
Market Economies	24.19	29.80	5.61	5.61	8.76
Centrally-Planned	17.47	22.30	4.83	4.83	7.55
	41.66	52.10	10.44	10.44	16.31
DEVELOPING COUNTRIES					
Africa	0.77	1.02	0.25	0.25	0.39
Latin America	4.09	5.73	1.64	1.64	2.56
Near East	2.72	4.01	1.29	1.29	2.02
Far East	7.80	11.17	3.37	3.37	5.27
	15.38	21.93	6.55	6.55	10.24
Asia C-P	7.42	10.00	2.58	2.58	4.03
Total	22.80	31.93	9.13	9.13	14.27
World Total	64.46	84.03	19.57	19.57	30.58

Source: UNIDO/FAO/World Bank Working Group, June 1978 (revised).

1/ The assumption that new plants will not perform better than the average rate of capacity utilization achieved by existing plants seems to account for the Working Group's pessimist forecast; most of the additions to capacity in developing countries are expected on stream by 1980 and should be operating well by 1982.

<u>At the regional level</u>

31. The following table compares indefinite plans to create additional capacity at a regional level 1/ with the increases in capacity made between 1974 and 1978 and planned for 1978 to 1983. The table shows that little is known of the indefinite plans of countries in several regions but even excluding the plans of these regions, indefinite plans will add about half the new capacity needed between 1982 and 1987.

32. To become self-sufficient by 1987, developing countries would need to increase capacity by 19 million metric tons N (including an additional 3.7 million metric tons N to replace the 1982 level of imports.) So far, plans announced are for 9 million metric tons.

<u>Forecast increase in capacity to produce nitrogen fertilizers up to 1982</u>
(million metric tons N)

	Capacity at June 1974	Additions July 1974 to June 1978	Additions July 1978 to June 1983	Capacity at June 1983	Indefinite additions at June 1978
DEVELOPED COUNTRIES					
Market Economies	32.77	5.63	3.15	41.55	4.31
USSR	10.17	4.94	11.23	26.34	--
Eastern Europe	6.81	1.59	1.72	10.12	0.90
Total developed	49.75	12.16	16.10	78.01	5.21
DEVELOPING COUNTRIES					
Africa	0.39	-	0.71	1.10	1.91
Latin America	2.11	1.76	3.33	7.20	2.62
Near East	1.64	0.92	3.89	6.45	2.31
Far East	3.54	2.44	5.68	11.66	2.18
	7.68	5.12	13.61	26.41	9.02
Asia C-P	7.13	2.91	1.29	11.33	0.27
Total Developing	14.81	8.03	14.90	37.74	9.29
Total World	64.56	20.19	31.00	115.76	14.50

Source: UNIDO/FAO/World Bank Working Group on Fertilizers

1/ The indefinite additions to ammonia capacity planned in developing countries are analysed by country in the Statistical Annex, Table B.5 in the last column marked "INDEF".

II. THE OUTLOOK FOR PHOSPHATE FERTILIZERS

A. Demand for phosphate fertilizers 1975-2000

At the global level

33. World demand for phosphate fertilizers is expected to increase from about 25 million metric tons P_2O_5 in 1975 to 34 million metric tons N in 1980, 42 million metric tons P_2O_5 in 1985 and 48 million metric tons P_2O_5 in 2000 as shown in the following table.

World demand for phosphate fertilizers 1975-2000

(Million metric tons P_2O_5)

	Actual 1965	Actual 1975	Forecast 1985 1/	Forecast 2000	Increase 1965-75	Increase 1975-85	Increase 1985-2000
Developing Countries							
Market economies	0.62	2.41	9.05	21.05	1.79	6.64	12.0
Centrally-planned economies	0.56	1.46	3.30	6.88	0.90	1.84	3.58
	1.18	3.87	12.35	27.93	2.69	8.48	15.58
Developed Countries							
Market economies	11.74	14.17	16.45	21.03	2.43	2.28	4.58
Centrally-planned economies	2.76	6.73	12.80	27.26	3.97	6.07	14.46
	14.50	20.90	29.25	48.29	6.40	9.35	19.04
World total	15.68	24.77	41.60	76.22	9.09	16.83	34.62
Developing countries' share (per cent)	7.5	15.5	30	36.5	29.5	50	55

Source: Forecast 1985 Joint Working Group, June 1977
Forecast 2000 Second UNIDO World-Wide Study of the Fertilizer Industry

34. Thus for this type of fertilizer, the increase in developing countries' consumption is expected to account for over 50 per cent of the increase in total world consumption in the period 1975-2000. By 2000, the share is forecast to exceed 36 per cent of world consumption.

1/ The forecast for 1985 was made by the Joint Working Group in June 1977. This forecast for 1987 made by the Joint Working Group in June 1978 implies a lower demand in 1985.

At the regional level

35. Regional demand in developing countries for phosphate fertilizers is expected to increase as shown in the following Table. The African region excludes Egypt, Libya and Sudan, which the FAO classification includes in the Near East region as explained in Part D of the Statistical Annex.

Demand for phosphate fertilizers in developing countries

Million metric tons P_2O_5

	Actual 1965	Actual 1975	Forecast 1985	Forecast 2000	Increase 1965-75	1975-85	1985-2000
Africa	0.22	0.41	0.90	1.71	0.19	0.49	0.81
Latin America	0.19	0.82	3.40	8.82	0.63	2.58	5.42
Near East	0.19	0.57	1.70	4.05	0.48	1.13	2.35
Far East	0.12	0.61	3.05	6.47	0.49	2.44	3.42
	0.62	2.41	9.05	21.05	1.79	6.64	12.00
Asia Centrally Planned	0.56	1.46	3.30	6.88	0.90	1.84	3.58
Developing countries	1.18	3.87	12.35	27.93	2.69	9.48	15.58

Sources: Same as previous table

At the country level

36. Data on past consumption is available at the country level (Table A.5). The forecasts of demand at the country level that are made by ISMA are generally adopted by the Working Group; they are available to all members of ISMA and could perhaps be published by UNIDO in future reports. In order to up-date country level data on forecast demand, countries are invited to advise UNIDO of their forecasts of phosphate fertilizer demand for up to five and ten years ahead.

37. As regard types of phosphate fertilizer in use, ISMA estimates suggest the following increases (decreases) between 1973 and 1980:

	Thousand metric tons P_2O_5	Per cent
Basic slag	(430)	- 45
Single super-phosphates	(746)	- 13
Triple super-phosphates	2746	+ 105
Ammonium phosphates	4502	+ 118
NPK compounds	2905	+ 27

B. AVAILABLE SUPPLY OF PHOSPHATE FERTILIZER 1975 AND 1982

At the global level

38. The Joint Working Group forecasts supply capability for five years ahead. It uses estimates of existing and new production capacity to calculate what it terms "supply", the maximum supply capability of the industry in the year in question. The methodology used for this calculation is explained in the Notes attached as Part C of the Statistical Annex.

39. The forecast supply and demand for phosphate fertilizers in 1982 is compared with the position in 1975 in the following table.

World Supply/Demand Balance for Phosphate Fertilizers in 1975 and 1982

Million metric tons P_2O_5

	1975					1982				
	Supply Capability		Actual Production	Actual Demand	Surplus (deficit)	Supply Capability		Forecast Supply	Forecast Demand	Forecast Surplus (deficit)
	OP	PAP				OP	PAP			
Developing countries										
Market economies	0.78	1.65	2.40	3.74	(1.34)	1.81	5.96	7.77	7.58	0.19
Centrally Planned	1.45	0.01	1.46	1.48	(0.42)	2.33	0.11	2.44	2.67	(0.23)
	2.23	1.66	3.86	5.22	(1.36)	4.14	6.07	10.21	10.25	(0.04)
Developed countries										
Market economies	5.76	8.45	14.17	12.22	1.95	5.85	14.00	19.85	15.34	4.51
Centrally Planned	3.61	3.16	6.73	6.69	0.04	4.70	5.92	10.62	11.90	(1.28)
	9.37	11.61	20.90	18.91	1.99	10.55	19.92	30.47	27.24	3.23
Total World	11.60	13.27	24.76	24.13		14.69	25.98	40.68	37.49	
Available Supply			23.68		(0.45)			39.46		1.97

Source: For 1982; UNIDO/FAO/World Bank Working Group on Fertilizers, June 1978
For 1975; FAO Monthly Bulletin of Statistics, April 1978

PAP; Fertilizers based on Phosphoric Acid
OP; Other Phosphate Fertilizers

The table shows that by 1982 (a) developing countries become self-sufficient (b) developed market economies will have a larger surplus for export, and (c) developed centrally planned economies will move with a deficit position requiring over 1 million tons P_2O_5 imports in 1982.

At the regional level

40. The capability to supply phosphate fertilizers in developing countries is expected to increase as shown in the following table. By 1982, the developing countries as group will be self-sufficient.

Developing Countries supply/demand balance for phosphate fertilizers 1975-1982

Million metric tons P_2O_5

	1975					1982				
	Supply Capability		Actual Production	Actual Demand	Estimated Deficit	Supply Capability		Forecast Supply	Forecast Demand	Forecast Deficit
	OP	PAP				OP	PAP			
Africa	0.09	0.33	0.41	0.35	0.06	0.28	1.77	2.05	0.65	1.40
Latin America	0.38	0.48	0.82	1.56	(0.74)	0.67	1.36	2.03	3.13	(1.10)
Near East	0.14	0.41	0.57	0.69	(0.12)	0.39	1.66	2.05	1.38	0.67
Far East	0.17	0.43	0.60	1.13	(0.53)	0.47	1.17	1.64	2.42	(0.78)
	0.78	1.65	2.40	3.74	(1.34)	1.81	5.96	7.77	7.58	0.19
Asia C.P.	1.45	0.01	1.46	1.48	(0.02)	2.33	0.11	2.44	2.67	(0.23)
Total	2.23	1.66	3.86	5.22	(1.36)	4.14	6.07	10.21	10.25	(0.04)

Source: For 1982; UNIDO/FAO/World Bank Working Group on Fertilizers, June 1978
For 1975; FAO Monthly Bulletin of Statistics, April 1978

PAP; Fertilizers based on Phosphoric Acid
OP; Other Phosphate Fertilizers

At the country level

41. The Joint Working Group has prepared a complete list of phosphoric acid plants operating in 1973-4; additional capacity to produce phosphoric acid added since June 1974 is tabulated according to the years it becomes available (table B.6). A list of the capacity of other types of phosphate fertilizers plant is also compiled by the Group but is not published.

42. The Joint Working Group agreed that its information on additions to phosphoric acid capacity in developing countries at a country level could be submitted to the Consultation Meeting; this is presented as Table B.6 in the Statistical Annex.

43. For developed countries, the Group preferred to release only the regional totals. Information at the country level prepared by ISMA is made available to ISMA members.

C. MONITORING CAPACITY TO PRODUCE PHOSPHATE FERTILIZERS UP TO 1982

At the global level

44. At the global level, the Joint Working Group estimates suggest that world available supply will exceed world demand as shown in the following table:

1977	3.91	million metric tons P_2O_5
1978	3.58	million metrio tons P_2O_5
1979	2.77	million metric tons P_2O_5
1980	3.03	million metric tons P_2O_5
1981	2.64	million metric tons P_2O_5
1982	1.97	million metric tons P_2O_5

45. In 1982, the margin of safety is 5 per oent of world demand. If world demand grow by 1 per cent faster each year than the Joint Working Group forecast (that is by 41 per cent instead of 36 per cent between 1977 and 1982), then this safety margin will disappear.

46. The supply/demand balance also depends on the accuracy of the supply forecasts. The forecast of world production capacity in 1977 that was made by the Joint Working Group in June 1975 has proven very accurate. Demand in 1977 is 1.4 million metric tons P_2O_5 (or 5 per oent) less than was forecast in June 1975.

47. Over the years, the Joint Working Group has become strioter and now includes in its estimates of additional capacity only plants under construction or firmly oommitted. For these reasons, any error in forecasting supply capability in 1982 is unlikely to be a large one.

48. Nevertheless the above discussion suggests some caution in interpreting the estimates of global supply/demand balance. There appears to be sufficient additional capacity planned to meet world demand up to 1982; ISMA is prepared to confirm this as far as 1980/81.

At the regional level

49. The estimates required in paragraph above suggest that developing countries as a group will be self-suffioient in phosphate fertilizers in 1982.

50. Of the four regions of developing countries, only Africa and the Near East will achieve a surplus in 1982. For Asia and Latin America, the projected deficit (i.e. import requirements) is likely to be considerably larger than it was in 1975.

51. However, in interpreting the balance estimated in paragraph 40 above, note must be taken that forecast supply capability of developing countries in 1982 might in practice be higher than that forecast by the Working Group.

At the country level

52. This is a task which Governments perform not UNIDO. However, UNIDO would appreciate receiving information on the results of such exercises.

D. MONITORING THE MEDIUM-TERM OUTLOOK 1982 to 1987

At the global level

53. Between 1982 and 1987, demand for phosphate fertilizers is expected to increase as shown in the following table. Additional supply capability needed to meet this demand is calculated in the last column; the additional capacity required will be about one third higher (that is about 10 million metric tons P_2O_5) for the world since, based on past estimates, supply capability can be expected to be about 75 per cent of capacity (see paragraphs 11-15 of Part C of the Statistical Annex).

FORECAST INCREASE IN DEMAND FOR PHOSPHATE FERTILIZERS

(million metric tons P_2O_5)

	Forecast Demand 1982	Forecast Demand 1987	Demand Increase 1982-1987	Increase needed in supply 1982-1987
Developed countries				
Market Economies	15.34	16.96	1.35	1.35
Centrally-Planned	11.90	14.00	2.10	2.10
	27.24	30.69	3.45	3.45
Developing countries				
Africa	0.65	0.88	0.23	0.23
Latin America	3.13	4.42	1.33	1.33
Near East	1.38	1.94	0.56	0.56
Far East	2.42	3.45	1.03	1.03
	7.58	10.73	3.15	3.15
Asia C-P	2.67	3.75	1.08	1.08
Total	10.25	14.48	4.23	4.23
World Total	37.49	45.17	7.68	7.68

Source: UNIDO/FAO/IBRD Working Group on Fertilizers, June 1978 (revised)

54. The following table compares "indefinite" or tentative plans to create additional capacity to produce phosphoric acid with the increases in capacity made between 1974 and 1978 and planned for 1978 and 1983. The table shows that little is known of the plans for new capacity after 1982 in several regions; even excluding the plans of these regions, indefinite plans will add only 22-33 percent of the new capacity needed between 1982 and 1987. 1/

55. To remain self-sufficient by 1987 as they were in 1982, developing countries, as a group, would need to increase phosphoric acid capacity for fertilizers by 4.2 million metric tons P_2O_5. As the following table shows, plans announced so far are for 2.3 million metric tons P_2O_5, of new phosphoric acid capacity for all purposes; 50-75 per cent may be used for fertilizer production.

Forecast increase in capacity to produce phosphoric acid up to 1982

(Million metric tons P_2O_5)

	Capacity at June 1974	Additions July 1974 to June 1978	Additions July 1978 to June 1983	Capacity at June 1983	Indefinite additions at June 1978
DEVELOPED COUNTRIES					
Market Economies	12.49	4.64	0.51	17.64	1.34
Centrally Planned	3.17	1.95	2.46	7.58	0.80
Total Developed	15.66	6.59	2.97	25.22	2.14
DEVELOPING COUNTRIES					
Africa	0.73	0.72	0.96	2.51	1.49
Latin America	0.77	0.22	1.09	2.08	0.52
Near East	0.50	0.29	1.62	2.41	0.35
Far East	0.47	0.63	0.44	1.64	0.04
	2.47	1.06	4.11	8.64	2.30
Asia Centrally-Planned	0.03	0.04	0.11	0.18	-
Total Developing	2.50	1.10	4.22	8.82	2.30
Total World	18.16	7.69	7.19	34.04	4.44

Source: UNIDO/FAO/IBRD Working Group on Fertilizers, June 1978.

1/ This assumes that 50-75 per cent of the increase in phosphate fertilizer capacity is based on phosphoric acid.

III. THE OUTLOOK FOR POTASH AS A FERTILIZER

A. DEMAND FOR POTASH IN FERTILIZERS

Global level

56. World demand for potash is expected to increase from 22 million metric tons K_2O in 1975 [1/] to 28 million metric tons K_2O in 1980, 36 million metric tons K_2O in 1985, and 67 million metric tons K_2O in 2000, as shown in the following table.

World Demand for Potash 1975-2000 (Million Metric Tons K_2O)

	Actual 1965	Actual 1975	Forecast 1985	Forecast 2000	Increase 1965-75	Increase 1975-85	Increase 1985-2000
Developed Countries							
Market economies	8.00	10.52	15.87	25.28	2.5	5.3	9.4
Centrally-planned	3.45	8.72	14.53	29.28	5.3	5.8	14.7
	11.45	19.24	30.40	54.56	7.8	11.1	24.1
Developing Countries							
Market economies	0.62	1.81	4.95	10.63	1.2	3.1	5.7
Centrally-planned	0.20	0.49	0.92	1.72	0.3	0.4	0.8
	0.82	2.30	5.87	12.35	1.5	3.5	6.5
World Total	12.27	21.54	36.27	66.91	9.3	14.6	30.6
Developing Countries' Share (per cent)	6.7	10.7	16.2	18.5	16	23	21

Source: Forecast 1985: Joint Working Group, June 1977
Forecast 2000: Second UNIDO World-Wide Study of the Fertilizer Industry

57. Thus for this type of fertilizer the increase in developing countries' consumption accounts for less than 25 per cent of the increase in world consumption in the period 1975-2000 compared to over 50 per cent for theother two nutrients.

1/ 1975 means the fertilizer year from 1 July 1975 to 30 June 1976.

Regional level

58. Regional demand in developing countries for potash as a fertilizer is expected to increase as shown in the following table. The "African" region excludes Egypt, Libya and Sudan which the Joint Working Group include in the "Near East" region (see Part D of Statistical Annex).

Demand for Potash as a Fertilizer in Developing Countries

Million Metric Tons K_2O

	Actual 1965	Actual 1975	Forecast 1985	Forecast 2000
Developing market economies				
Africa	0.08	0.19	0.39	1.01
Latin America	0.29	0.87	1.48	5.47
Near East	0.02	0.04	0.74	0.23
Far East	0.23	0.71	1.33	3.92
	0.62	1.81	3.94	10.63
Asia Centrally-planned	0.20	0.49	1.44	1.72
Developing Countries	0.82	2.30	6.38	12.35

Source: Forecast 1985: Joint Working Group, June 1977
Forecast 2000: Second UNIDO World-Wide Study of the Fertilizer Industry

Country level

59. Data on past consumption is available at the country level (Table A.5). The Joint Working Group preferred not to release its forecasts of demand at the country level.

60. In order to develop information at the country level on forecast levels of demand, countries are invited to advise UNIDO of their forecasts of demand for potash up to 5 and 10 years ahead.

B. SUPPLY OF POTASH AS A FERTILIZER

Short-term outlook to 1982 at the global level

61. The Joint Working Group forecasts supply capability for five years ahead. It uses estimates of the capacity of existing and new potash mines to calculate what it terms "supply", the maximum quantity of potash the industry could supply in the year in question. The methodology used for this calculation is explained in the Notes that form Part C of the Statistical Annex.

62. The forecast supply and demand of potash in 1982 is compared with the position in 1975 in the following table.

World Demand/Supply Balance for Potash in 1975 and 1982

Million Metric Tons K_2O

	1975				1982			
	Actual Capacity	Actual Production	Actual Demand	Production Surplus (Deficit)	Forecast Capacity	Forecast Supply	Forecast Demand	Forecast Surplus (Deficit)
Developing Countries								
Market economies	0.33	0.29	1.81	(1.52)	0.75	0.16	3.79	(3.63)
Centrally-planned	0.30	0.30	0.49	(0.19)	0.50	0.45	0.80	(0.35)
	0.63	0.59	2.30	(1.71)	1.25	0.61	4.59	(3.98)
Developed Countries								
Market economies	17.55	11.92	10.51	1.41	19.41	17.57	14.11	3.46
Centrally-planned	11.95	10.96	8.72	2.24	17.15	15.80	12.85	3.75
	29.50	22.88	19.23	3.65	36.56	33.37	26.96	7.21
World total	30.13	23.47	21.53	—	37.81	33.98	30.75	—
Available world supply 1/		21.47	21.53	(0.06)		31.15	30.75	0.40

Source: 1975 FAO Monthly Bulletin of Statistics, April 1978
1982 Joint Working Group, June 1978

1/ Available supply excludes 3.5 per cent of world production which it is estimated is used as technical potash (see Statistical Annex, Part C).

Short-term outlook to 1982 at the regional level

63. The only new capacity to mine potash in developing countries is expected to be that of Jordan amounting to 0.72 million tons starting in 1982.

Short-term outlook to 1982 at the country level

64. The Joint Working Group examined the capacity of existing mines and additional mining capacity to be added up to 1982 in considerable detail at its June 1978 meeting.

65. The Group preferred its information on supply capability in individual countries to remain confidential; hence only the regional totals are published by the Joint Working Group.

C. MONITORING CAPACITY TO PRODUCE POTASH

Monitoring the short-term outlook at the global level

66. At the global level, the Joint Working Group estimates suggest that world supply capability will exceed world demand as shown in the following table.

1977	2.02	million metric tons K_2O
1978	1.76	million metric tons K_2O
1979	1.60	million metric tons K_2O
1980	1.30	million metric tons K_2O
1981	0.91	million metric tons K_2O
1982	0.40	million metric tons K_2O

67. In 1980, the margin of safety falls to 5 per cent of world demand and by 1982 to 1.3 per cent. This can only be considered a satisfactory situation if new mining capacity can be developed at short notice (that is in less than two years as compared to four years for the other nutrients).

Monitoring short-term outlook at the regional level

68. The estimates shown in paragraph 62 suggest that developing countries will oontinue to need to import about 4 million metric tons K_2O of potash in 1982, double the level imported in 1975. The goal of self-sufficiency agreed at the First Consultation Meeting will be difficult to achieve unless large potash deposits are found in developing countries.

D. MONITORING THE MEDIUM-TERM OUTLOOK TO 1987

69. Between 1982 and 1987, demand for potash fertilisers is expected to increase as shown in the following table. Sufficient additional capacity needed to meet this demand is already being considered as shown in the last column of the table. Only one new source of supply in developing countries (Brazil) is foreseen; developing countries dependence on imports therefore seems likely to increase further up to 1987.

Growth of World Demand of Potash 1982-87 (Million Metric Tons K_2O)

	Forecast Demand 1982	Forecast Demand 1987	Demand Increase 1982 - 1987	Indefinite Plans to Increase Mine Capacity
DEVELOPED COUNTRIES				
Market Economies	14.11	16.79	2.68	5.85
Centrally-planned	12.05	16.40	4.35	3.65
	26.16	33.19	7.03	9.50
DEVELOPING COUNTRIES				
Africa	0.39	0.54	0.15	-
Latin America	1.89	2.90	1.01	0.60
Near East	0.08	0.11	0.03	-
Far East	1.43	1.98	0.55	-
	3.79	5.53	1.74	0.60
Asia Centrally-planned	0.80	1.01	0.21	0.65
	4.59	6.54	1.95	1.25
World Total	30.75	39.73	8.98	10.75

IV. CONCLUSIONS AND RECOMMENDATIONS

A. Short and medium-term outlook for the three fertilizer nutrients

70. In the period up to 1982 the world's capability to supply nitrogen, phosphate and potash fertilizers will almost certainly be sufficient to meet the growth in demand that is likely to be experienced. Demand is more likely to strain supply capabilities in potash and phosphate than in nitrogen fertilizers.

71. In the period 1975 to 1982, the developing countries as a group will become self-sufficient in phosphate fertilizers (that is export as much as they import); however, they will remain large importers (3 million tons a year) of nitrogen fertilizers. Most of their potash requirements will continue to be imported.

72. In the period 1982 to 1987, the world will need 30 million metric tons N of new ammonia capacity; so far indefinite plans have been announced to create 14.5 million metric tons N of new capacity. Developing countries, if they are to achieve self-sufficiency by 1987, will need 17 million metric tons N of new ammonia capacity; so far indefinite plans to build 9.0 million metric tons N of new capacity have been announced.

73. In the period 1982 to 1987, the world and developing countries will need to increase capacity to produce phosphate fertilizers by 7.7 and 4.2 million metric tons P_2O_5, respectively. Indefinite plans for new phosphoric acid capacity will produce 3.3 and 1.6 million metric tons P_2O_5 of phosphate fertilizers for the world and developing countries, respectively (assuming 75 per cent of the phosphoric acid is used for fertilizer production).

74. The outlook of potash is that most of the substantial increase in mining capacity that will be required in the 1982 to 1987 period is already planned. Also, as a general rule, potash production can be expanded more quickly than nitrogen or phosphate production.

75. About 50 per cent of the new capacity established in the world in the periods of (a) 1975 to 1985 and (b) 1985 to 2000 for the production of nitrogen and phosphate fertilizers will be located in developing countries; for potash the proportion is 20 per cent. By 1982 developing countries share of world production is expected to be 28 per cent for nitrogen, 26 per cent for phosphate and 2 per cent for potash.

B. Suggestions for improving monitoring of the short-term and medium-term outlook

76. Continuous monitoring of the growth of fertilizer production capacity at the national, regional and global levels requires the collection of accurate information and its regular dissemination. In the view of the UNIDO Secretariat, it will require:

(i) the willingness and cooperation of all developing and developed countries in reporting to UNIDO

(a) plans to expand existing capacities,
(b) new capacity under construction,
(c) firms plans to create new capacity, and
(d) permanent closure of existing capacities;

(ii) the regular dissemination by UNIDO, every six months, to Governments and fertilizer enterprises of a report of the impact of such developments on the supply capability of the industry;

(iii) in this connexion, the preparation by UNIDO of a Directory of Fertilizer Enterprises, as recommended by the Expert Group Meeting on Regional Cooperation in the Fertilizer Industry, appears desirable;

(iv) information on capaoity utilization (past, present and future) should be developed to supplement information on supply capability. This would require information on the rates of capacity utilization achieved by fertilizer plants in recent years to be supplied to UNIDO.

C. Suggestions for improving monitoring of the long-term outlook, 1985-2000

77. UNIDO might approach 20-30 countries to ascertain their views on the increased contribution which non-conventional sources of fertilizer (direct fixation of nitrogen, biogas, municipal garbage, etc.) are likely to make to fertilizer supplies in the period 1985 to 2000 and in particular, when energy prices increase substantially above their present levels.

78. A detailed study of the mutual benefits to be realised by increased purchases by developed countries in the 1980s and 1990s of finished fertilizers (MAR, DAP, Urea, etc.) manufactured in developing countries with the raw materials and energy required to produce them. Such a study could form a basis for discussing the changing world structure of the industry at the next consultation meeting.

V. STATISTICAL ANNEX

STATISTICAL ANNEX - CONTENTS

TABLE A1. WORLD CONSUMPTION OF NITROGENOUS FERTILIZER BY REGION, 1950 - 1976
(millions of MT)

Year	DEVELOPED COUNTRIES			DEVELOPING COUNTRIES							WORLD TOTAL
				Market economies							
	Market economies	Centrally planned economies	Total	Africa	L.America	Near East	Far East	Total	Asian centrally planned economies	Total	
1950/1951	3.26	0.67	3.93	0.02	0.13	0.05	0.11	0.31	0.09	0.40	4.33
1955/1956	4.71	1.01	5.72	0.05	0.27	0.16	0.37	0.85	0.32	1.17	6.89
1960/1961	6.95	1.63	8.58	0.08	0.44	0.26	0.72	1.50	0.88	2.38	10.96
1965/1966	10.85	3.92	14.77	0.15	0.73	0.44	1.13	2.45	1.60	4.05	18.82
1966/1967	12.06	4.56	16.62	0.17	0.81	0.44	1.59	3.01	2.14	5.15	21.77
1967/1968	13.40	5.23	18.63	0.18	0.95	0.53	1.71	3.37	1.94	5.31	23.94
1968/1969	13.85	6.06	19.91	0.20	1.12	0.64	2.19	4.15	2.56	6.71	26.62
1969/1970	14.58	6.57	21.15	0.23	1.18	0.71	2.56	4.68	2.85	7.53	28.68
1970/1971	15.63	7.52	23.15	0.27	1.36	0.77	2.70	5.10	3.50	8.60	31.75
1971/1972	15.83	8.28	24.11	0.37	1.45	0.87	3.16	5.85	3.39	9.24	33.35
1972/1973	16.48	8.96	25.44	0.39	1.63	1.03	3.52	6.57	3.70	10.27	35.71
1973/1974	17.85	9.68	27.53	0.42	1.68	1.18	3.49	6.77	4.39	11.16	38.69
1974/1975	17.08	10.34	27.42	0.41	1.88	1.03	3.46	6.78	4.38	11.16	38.58
1975/1976	19.22	11.52	30.74	0.44	1.97	1.32	3.94	7.67	4.82	12.49	43.23
1976/1977	19.99	11.28	31.27	0.52	2.27	1.64	4.35	8.78	5.01	13.79	45.06

Sources: FAO monthly Bulletin of Statistics, January and March 1978.
Annual Fertilizer Revue 1975, 1976.

TABLE A2. WORLD CONSUMPTION OF PHOSPHOROUS FERTILIZER, BY REGION, 1950-1976

(millions of MT)

Year	DEVELOPED COUNTRIES			DEVELOPING COUNTRIES							WORLD TOTAL
	Market economies	Centrally planned economies	Total	Market economies: Africa	L.America	Near East	Far East	Total	Asian centrally planned economies	Total	
1950/1951	5.32	0.73	6.05	0.05	0.10	0.03	0.02	0.20	0.02	0.22	6.27
1955/1956	6.34	1.10	7.44	0.07	0.17	0.04	0.06	0.34	0.05	0.39	7.83
1960/1961	7.71	1.57	9.28	0.10	0.28	0.08	0.18	0.64	0.13	0.77	10.05
1965/1966	10.43	2.79	13.22	0.11	0.46	0.16	0.35	1.08	0.64	1.72	14.94
1966/1967	11.06	3.06	14.12	0.13	0.53	0.18	0.52	1.36	0.63	1.99	16.11
1967/1968	11.49	3.30	14.79	0.16	0.63	0.23	0.52	1.54	0.63	2.17	16.96
1968/1969	11.82	3.69	15.51	0.17	0.74	0.29	0.77	1.97	0.70	2.67	18.18
1969/1970	11.97	3.86	15.83	0.20	0.77	0.31	0.86	2.14	0.83	2.97	18.80
1970/1971	12.34	4.19	16.53	0.23	0.92	0.31	0.78	2.24	0.97	3.21	19.74
1971/1972	12.75	4.63	17.38	0.26	0.99	0.37	0.98	2.60	1.11	3.71	21.09
1972/1973	13.36	4.86	18.22	0.28	1.24	0.44	1.11	3.07	1.19	4.36	22.48
1973/1974	14.05	5.31	19.36	0.32	1.34	0.53	1.19	3.38	1.42	4.80	24.16
1974/1975	11.78	5.93	17.71	0.32	1.48	0.49	1.10	3.39	1.58	4.97	22.68
1975/1976	12.21	6.69	18.90	0.35	1.56	0.69	1.13	3.73	1.48	5.21	24.11
1976/1977	13.36	7.00	20.36	0.42	1.89	0.93	1.24	4.48	1.65	6.13	26.49

Sources: FAO monthly Bulletin of Statistics, January and March 1978.
Annual Fertilizer Review 1975, 1976.

TABLE A3. WORLD CONSUMPTION OF POTASH FERTILIZER, BY REGION, 1950 - 1976
(millions of MT)

Year	DEVELOPED COUNTRIES			DEVELOPING COUNTRIES							WORLD TOTAL
				Market economies							
	Market economies	Centrally planned economies	Total	Africa	L.America	Near East	Far East	Total	Asian centrally planned economies	Total	
1950/1951	3.44	1.08	4.52	0.02	0.05	-	0.02	0.09	0.01	0.10	4.62
1955/1956	4.95	1.59	6.54	0.04	0.12	0.01	0.05	0.22	0.02	0.24	6.78
1960/1961	6.21	1.80	8.01	0.06	0.23	0.01	0.12	0.42	0.05	0.47	8.48
1965/1966	7.99	3.46	11.45	0.08	0.29	0.02	0.23	0.62	0.20	0.82	12.27
1966/1967	8.45	3.67	12.12	0.10	0.33	0.01	0.30	0.74	0.22	0.96	13.08
1967/1968	8.88	4.10	12.98	0.10	0.37	0.02	0.35	0.84	0.26	1.10	14.08
1968/1969	8.96	4.36	13.32	0.10	0.54	0.02	0.38	1.04	0.33	1.37	14.69
1969/1970	9.29	4.67	13.96	0.12	0.56	0.02	0.46	1.16	0.35	1.51	15.47
1970/1971	9.88	5.09	14.97	0.14	0.65	0.03	0.49	1.31	0.36	1.67	16.64
1971/1972	10.16	5.64	15.80	0.16	0.66	0.03	0.59	1.44	0.38	1.82	17.62
1972/1973	10.62	6.08	16.70	0.18	0.77	0.04	0.70	1.69	0.42	2.11	13.81
1973/1974	11.48	6.75	18.23	0.18	0.89	0.04	0.78	1.89	0.61	2.50	20.73
1974/1975	10.11	7.12	17.23	0.21	0.93	0.04	0.79	1.97	0.62	2.59	19.82
1975/1976	10.52	8.72	19.24	0.19	0.87	0.04	0.71	1.81	0.49	2.30	21.54
1976/1977	11.54	8.91	20.45	0.21	1.10	0.05	0.76	2.12	0.50	2.62	23.07

Source: FAO monthly Bulletin of Statistics, January and March 1978
Annual Fertilizer Review 1975, 1976.

TABLE A4. FERTILIZER CONSUMPTION, BY COUNTRY, 1973-1976

	NITROGENOUS FERTILIZERS / ENGRAIS AZOTES / ABONOS NITROGENADOS — CONSUMPTION NT N				PHOSPHATE FERTILIZERS / ENGRAIS PHOSPHATES / ABONOS FOSFATADOS — CONSUMPTION NT P_2O_5				POTASH FERTILIZERS / ENGRAIS POTASSIQUES / ABONOS POTASICOS — CONSUMPTION NT K_2O			
	73/74	74/75	75/76	76/77	73/74	74/75	75/76	76/77	73/74	74/75	75/76	76/77
WORLD	38696869	38574569	43237983	45087934	24165191	22690297	24120950	24492867	20733222	15023547	21939027	23064175
AFRICA	1074914	1071196	1750506	1420190	693688	747130	799920	509784	308420	343703	324257	350132
ALGERIA	53900	45100	42000	30000	84100	67000	74400	92100	24848	27800	23000	29900
ANGOLA	9100	6500	2100	1000	9400	3500	1300	800	4500	5100	780	500
BENIN	1300	1341	751	1000	1500	1900	800	400	1576	1660	823	1800
BOTSWANA	1200	1141	1500	1000	700	800	900	1000				
BURUNDI	220	481	325	300	170	235	243	100	103	114	175	100
CAMEROON	9326	9743	6100	8400	2304	2120	3000	3400	4550	4763	3100	9400
CAPE VERDE	20	23	50	100	17	20	20	36	29	21	30	30
CENT AFR EMP	937	1800	800	500	400	450	400	200	320	680	500	200
CHAD	2212	4500	2800	3100	1440	3200	1000	1900	1120	1200	1300	800
CONGO	1200	200	200	300	506	100	100	300	4000	4000	2000	2500
EGYPT	350161	360000	415000	405000	44397	85000	83000	105000	1923	3400	3192	3000
EQ GUINEA	100	100	100	100								
ETHIOPIA	4074	7987	11000	31000	10845	11197	20000	10000			200	100
GABON	21	30	300	300			100	200				
GAMBIA	302	400	165	200	819	886	990	1400				900
GHANA	2944	3782	11000	12000	2057	3217	8900	5200	1995	2730	4400	3300
GUINEA	888	450	600	600	100	450	400	300	100	320	560	400
GUIN BISSAU	100	317	100	100		74	300			82	100	100
IVORY COAST	7942	7799	10900	12080	4179	4471	5600	5000	17714	10602	21200	20400
KENYA	20378	19400	21882	22417	27900	29300	20227	27262	2592	4000	2385	4217
LESOTHO	135	136	300	300	743	686	1200	1000				
LIBERIA	2109	1200	3056	4287	750	800	900	1200	353	13000	1300	400
LIBYA	7000	10100	15000	13100	8000	10200	19400	16000	1200	1800	1500	3700
MADAGASCAR	4107	4988	3514	6000	1556	820	1501	100	2757	3858	912	2500
MALAWI	12442	7493	12888	10887	2585	1242	633	1244	1365	1935	1500	3000
MALI	5043	2947	1600	4500	3834	4891	400	4200	40	404	200	3100
MAURITANIA	174	350	1100	500	33	88	50		14	55		
MAURITIUS	11178	8874	10000	11500	3319	3509	921	1000	11447	14735	13221	14300
MOROCCO	62900	42000	63700	82200	49900	97400	6450	49700	24200	20900	39300	32200
MOZAMBIQUE	9000	3700	3700	6700	1500	1100	1400	2900	1800	2143	400	1400
NIGER	220	81	777	540	100	63	200	505	50	13	44	85
NIGERIA	4700	13200	30200	49300	5900	10700	16100	45500	5000	9000	8000	17500
REUNION	6100	3300	3700	4100	3900	4800	2900	1700	4500	46000	2800	3500
RHODESIA	70000	75000	75000	80000	51300	44500	4500	43000	32000	39000	32000	33000
RWANDA	83	147	140	156	50	90	70	70	200	228	70	70
SENEGAL	7360	9000	10000	10800	7820	13400	15600	13700	7500	13700	19100	12700
SIERRA LEONE	1135	1044	2700	700	1121	1004	2000	400	534	1300	900	300
SOMALIA	2100	1500	1840		500		500		200	900	1300	
SOUTH AFRICA	231100	230153	285316	304688	327100	344200	342532	342781	127300	120855	127464	130890
SUDAN	54453	80316	55000	105000	145		100					
SWAZILAND	9320	5300	5500	6000	3587	1100	1506	1500	3857	2000	2400	2400
TANZANIA	11133	13944	14891	14500	5800	11695	11300	10900	3004	5943	3475	4300
TOGO	260	809	847	540	203	1183	1155	1100	179	170	285	701
TUNISIA	19059	22700	23380	24900	10020	22703	29697	25140	2400	4000	3300	2500
UGANDA	4000	1400	872	943	2400	1300	600	430	707	700	157	243
UPPER VOLTA	356	700	400	2200	50	400	400	2200	145	100	400	400
ZAIRE	3200	3100	4548	8164	1600	1000	4949	5210	1100	1000	1200	1300
ZAMBIA	24000	35900	11700	39880	11551	14700	14800	11900	7500	11400	5200	6100
N C AMERICA	9732914	9380901	11211324	11595279	5432416	4953344	5401993	4035931	5044032	4920715	3221943	5010003
BAHAMAS	786	524	463	525	948	452	370	125	188	309	388	900
BARBADOS	2190	1500	1700	700	200	300	400	400	2040	4700	2600	1500
BELIZE	847	800	800	300	1500	1000	1300	400	382	900		
CANADA	512441	931200	936200	609600	494200	501800	502700	520000	202030	264000	242000	254000
COSTA RICA	34000	33900	31100	20484	10000	12000	15000	10384	20000	24600	20000	14020
CUBA	130400	139000	156300	107000	90300	60900	59400	57500	96600	101700	115400	118000
DOMINICAN RP	40425	46700	30000	39000	13079	25179	22400	21400	21333	26157	20400	19400
EL SALVADOR	68000	42500	45000	77106	31800	20100	20200	16400	10000	8000	8700	8690
GUADELOUPE	4000	2500	3313	3353	3880	3800	3259	2985	3888	3500	3263	3179
GUATEMALA	32000	36900	39100	41000	7345	13049	15300	28300	11077	13030	4400	19000
HAITI	700	903	1200	100	200	279	600	100	560	434	300	100
HONDURAS	14000	5500	11400	11000	2000	2200	3700	9000	8000	7000	4900	9400
JAMAICA	8000	5300	6000	7300	3400	4900	4900	1300	7000	9400	7800	9700
MARTINIQUE	4900	4800	2992	3949	3900	4000	3507	4390	4400	4200	2720	4085
MEXICO	523892	454399	833000	891000	172872	222742	274900	223800	32927	45071	40000	50000
NICARAGUA	35000	22000	16500	22000	12000	10000	2400	14000	7900	3400	400	8000
PANAMA	11805	13443	13414	31000	4718	9760	5055	4200	5783	8516	3888	7500
ST KITTS ETC	200	200	300	300	200	300	400	500	3200	3200	2000	1200
ST LUCIA	1500	1500	1400	1600	1300	1300	1300	1100	3080	3000	1900	1200
ST VINCENT	1700	1000	2100	2100	300	400	400	400	2000	2000	1500	1000
TRINIDAD ETC	7000	3466	4342	6000	295	393	290	243	2521	2935	2372	2413
USA	8296920	7860770	9445300	9694300	4617103	4052270	4742400	5118000	4601135	4039335	4724200	5251600
VIRGIN IS US	400	500	700	380	200	200	200	200	30			
SOUTH AMERIC	797190	828710	750705	943381	1019673	1003213	1123960	1468520	691802	854975	610210	824579
ARGENTINA	43843	42000	20000	39000	20000	23600	22000	20400	7000	9000	4400	4200
BOLIVIA	2769	3000	1600	1300	2030	2000	1500	1500	900	200	100	100
BRAZIL	347991	380705	387539	403026	723980	805722	892495	1205700	920532	920302	910724	457900
CHILE	99324	52079	30600	47544	115466	98000	47000	55289	13093	15091	8400	13199
COLOMBIA	125700	122700	111309	142748	34900	73200	44262	65411	54000	52780	30700	34535
ECUADOR	28700	22130	13549	39444	15000	10400	12609	24780	8710	8129	4484	17063
GUYANA	9260	11200	7703	8100	2600	2900	3144	1300	2300	2300	1400	1200
PARAGUAY	1000	887	300	900	270	791	936	100	1800	300	300	200
PERU	88492	113030	83549	100285	9208	19800	11397	17047	7871	12420	5448	11502
SURINAM	2300	3700	2500	5600	100	900	100	100	400	800	2004	100
URUGUAY	15400	5900	11238	21300	24574	18600	20000	368000	5800	7100	4012	4600
VENEZUELA	40811	37907	64827	74300	23543	39704	40877	468000	20996	29625	33040	35900
ASIA	9484369	9146884	10248564	11160774	3095921	3808209	3838034	4449414	2118752	2102821	1814554	2001977

Source: FAO Monthly Bulletin of Statistics, April 1978.

TABLE A4. (continued)

	NITROGENOUS FERTILIZERS / ENGRAIS AZOTES / ABONOS NITROGENADOS — CONSUMPTION MT N				PHOSPHATE FERTILIZERS / ENGRAIS PHOSPHATES / ABONOS FOSFATADOS — CONSUMPTION MT P_2O_5				POTASH FERTILIZERS / ENGRAIS POTASSIQUES / ABONOS POTASICOS — CONSUMO MT K_2O			
	73/74	74/75	75/76	76/77	73/74	74/75	75/76	76/77	73/74	74/75	75/76	76/77
AFGHANISTAN	17300	24200	27468	30846	4900	5600	8316	13550		100*		
BAHRAIN	16	20F	23		6	10F			6	10F		
BANGLADESH	126953	82811	144723	165856	43040	35555	54268	61123	11212	10745	14523	14479
BHUTAN		74	100*	100*		4						
BURMA	36431	38142	47470	42931	4283	4195	10379	6744	304	2345	1435	1490
CHINA	4015000F	4000000F	4340600F	4500300F	1240100F	1324200F	6253400F	1411000F	522700F	547200F	410100F	423700F
CYPRUS	19645	7441	15000*	15000*	13433	3547	6600*	10000*	2187	2600*	2400*	3100*
INDIA	1829100	1766000	2144000	2457000	649900	471000	447000	635000	359900	336000	278000	319000
INDONESIA	350000	345000*	341900*	351200*	85000	114100*	116500*	106700*	40300	33000	250000*	30000*
IRAN	194080	188525	165580	203270	133341	141405	147500	152440	1086	2564	3500	2670
IRAQ	20139	27317	25000*	35000*	7269	6052	7000*	8000*	1261	1033	700*	
ISRAEL	30340	32404	37375	37450	15035	16855	19240	14565	11410	15080	17775	18405
JAPAN	821200	690600	653000	334000	793000	892400	623300	738300	684900	721800	571000	691800
JORDAN	1830	1950	15006	3947	1250	7200*	3100*	5158	920	430	800	812
KAMPUCHEA DM	1000	900*	100*	100*	1000	500*						
KOREA DPR	244000	251900*	264000*	270000*	83000	124000*	174000*	127000*	44400	40500*	45000*	57700*
KOREA REP	411236	447377	467678	361300	194062	245554	236422	142000	149796	155442	161590	139800
LAO	100	100*	100*	100*	100	100*						
LEBANON	58600	19120	7000*	17300*	23305	12400*	5000*	10000*	10430	10400*	1000*	2400*
MAL PENINSUL	104800	60200*	72100*	83500*	32000	25300*	22000*	28200*	82148	92152	105800	129800
MAL SABAH	2081	3178	1830	5340	1361	1761	1435	2135	3457	5345	5137	5597
MAL SARAWAK	5300	5500*	3845	5622	1800	2000*	2820	4107	3700	5000*	3515	5307
MONGOLIA	1500	1600	1500	1300	3900	1700*	700*	1400*	100	200	500	
NEPAL	9002	8961	8421	10687	2453	7849	2489	2788	418	886	1350	1410
OMAN	131	177	254	1300*			86	500*			86	700*
PAKISTAN	341944	362900	443451	500442	58064	60500	108999	123265	2670	1810	1824	3209
PHILIPPINES	151902	177381	144100	177200	51010	47774	34000	40000	55621	60054	48000	51500
QATAR			200*	300*								
SAUDI ARABIA	4000	5000*	5700	6415	6242	2700*	2300*	3000*	3200	1200*	1300*	2500*
SINGAPORE	1000	1000*	1000*	1000*	1000	1000*	1000*	1000*	1000	1000*	1000*	1000*
SRI LANKA	51202	14400*	37800	43000*	12043	15400	10400*	7500*	31643	35800*	15900*	31500*
SYRIA	53255	36624	39200	42500	7510	13436	15320	22060	1797	1533	1600	1350
THAILAND	60212	35645	78852	135700*	51381	70407	62223	80300*	30378	50929	39074	20500*
TURKEY	429900	282859	482204	676527	280000	227003	380577	538006	12700	17851	70389	28903
U A EMIRATES	495	638	800*	1000*	23	43	100*	100*	8	18		
VIET NAM	155300	171200*	154000*	241500*	74700	126500*	100200*	110000*	40400	34100*	35800*	34200*
YEMEN AR	735	600	3377	2700*	140	190	1300	1000*	140	190	400*	
YEMEN DEM	200	460	520	811			40	73			10	45
EUROPE	11202033	11237136	12242083	12455465	8374013	7858909	7975555	8415044	8715159	7999332	8186304	8240952
ALBANIA	38100	56300*	36000*	45300*	20900	24000*	24500*	22400*	1100	3400*	1600*	4300*
AUSTRIA	132103	125553	121444	143269	115609	81700*	73600	85400*	159031	125331	115115	130719
BELGIUM-LUX	179225	165100	162000	190000*	172880	157192	120000*	121000*	201122	179300	148500	155000*
BULGARIA	328053	324536	374977	348400	758719	715675	244566	253300	46135	71952	49532	56154
CZECHOSLOVAK	413000	428000	532000*	534204	393000	374000	476006	510466	572000	585000	667000	654000
DENMARK	365140	300445	339088	349457	155343	114056	126684	134487	215664	155890	171875	147565
FINLAND	206660	226442	154315	161377	197350	195151	170945	135171	159185	164803	145976	121072
FRANCE	1833085	1554600	1307800	1815000*	2168000	1710600	1664300	1800000*	1825900	1390300	1314200	1425300*
GERMAN DR	866100	671300	676000	754900	392500	413100	400000	385000	658300	715900	706500	623500
GERMANY FED	1100841	1200539	1228142	1323051	916740	876941	779684	887427	1163345	1170459	1099003	1195126
GREECE	244293	251500	275080	291310	147294	150200	160133	175463	23768	24590	27536	37700
HUNGARY	492735	551290	535838	522414	322174	361721	429340	370061	387284	423219	553094	494673
ICELAND	14145	13589	14761	14813	3563	7761	7774	7974	6438	5807	5603	5854
IRELAND	130200	133000	152739	168155	189300	114300	131700	147650	681250	111100	144250	169960
ITALY	632130	672195	324337	671240	472221	368469	465647	431460	267432	251405	275743	699150
MALTA	270	235	232	245			18	18	100	100*	32	32
NETHERLANDS	411934	434952	451175	430000*	106950	90399	79139	53700*	114065	112355	101069	515300*
NORWAY	85500	94700	97800	95000	51900	58700	57200	54700	70300	77500	74600	33100
POLAND	1073652	1147564	1227910	1213050	650206	866688	947191	941040	1415117	1430577	1456250	1435472
PORTUGAL	127722	170834	141000*	138100*	38901	51900	73700*	34200*	30204	27668	30000*	33500*
ROMANIA	442000	450000	788000	612000	350000	375000	338000	454000	62000	58100	70600	38400
SPAIN	728457	313755	322154	830384	518560	512764*	422215	556302	274266	266440	257470	308330
SWEDEN	243486	235336	258000	259100	160831	137270	141000	644003	143648	116696	125948	128935
SWITZERLAND	41560	37900	44300	50600	55000	41100	41200	45500	42200	66200	57800	55000
UK	874400	927000	1045000	1110000	478200	368000	573000	384000	497800	373000	384000	411000
YUGOSLAVIA	339400	352000	560000	382000	193460	167000	197000	166000	173490	161600	163000	168000
OCEANIA	217045	208094	687995	244905	1618480	923320	879300	1131100	287877	257937	155853	251452
AUSTRALIA	178000	177600*	167000*	213300*	1170400	619700*	490200*	339000*	104300	92400*	72900*	111800*
FIJI	6790	9152	7700*	9000*	980	7220	2500*	1400*	420	930	2000*	2200*
NEW ZEALAND	32447	17842	10295	20103	446200	306000*	385500*	390000*	180257	141399	119793	136452
PAPUA N GUIN	2000	3500*	3400*	4400*	700	600*	1100*	700*	2900	3000*	1000*	1800*
SAMOA			100*	100*								
USSR	8224000	6698000	7339000	7252000	2731000	5274000	3829000	4663000	3405000	3884000	5176000	5577000
DEVELOPED	17851049	17836742	19218853	19990456	14049832	11376430	12216810	13364081	11480548	10103221	10518864	15542780
N AMERICA	8009569	8334970	10001500	10263900	5111383	4594070	5245100	5438000	4803173	4240139	4960200	5945600
W EUROPE	7350393	3507773	8064367	8423195	6186514	5208605	5110938	5477455	5569208	4763344	4641720	4909553
OCEANIA	208447	155442	177295	233403	1618400	520300	675700	1629060	264557	733595	157497	247452
OTH DEV.PED	1082440	953557	915691	6076138	1135139	1053455	985072	6115626	623610	863739	716239	840103
DEVELOPING	6775376	6778624	7682210	8791830	3374160	3408583	3735043	4436797	1894143	1974390	1808183	2613480
AFRICA	423560	410673	440590	520370	316040	327730	354696	415425	130191	211724	154101	211934
LAT AMERICA	1600535	1877249	1967531	2274736	1340704	1482491	1560453	1486454	894661	925555	871973	1097042
NEAR EAST	1180580	1025427	1324221	1640266	525413	493626	664159	933563	36818	38213	37073	49464
FAR EAST	3481303	3452869	3935160	4342956	1190315	1101508	1130535	6241246	781147	790920	302836	354980
OTH DV.PING	9390	12652	10700	13500	1600	3070	3600	2100	3320	3930	3000	4000
CENTR PLANND	14070444	14321003	16334920	16297460	8346155	7505284	8133093	8649969	3550531	7742300	9211976	9403999
ASIAN CPE	4394000	4335600	4620200	5013200	1422786	1578500	1479100	1649400	607400	822600	491400	499600
EUROPE USSR	9679644	10345403	11516720	11284268	5318499	5926384	8653993	7000505	6358931	7126300	8720576	8908359

TABLE A5. FORECASTS OF FERTILIZER DEMAND, BY REGION, 1978, 1982, 1987 AND 2000

(millions of MT)

Region	1978/79			1982/83			1987/88			2000/01		
	N	P_2O_5	K_2O	N	P_2O_5	K_2O	N	P_2O_5	K_2O	N	P_2O_5	K_2O
Developed countries												
Market economies	21.05	13.82	12.24	24.19	15.34	14.22	28.28	16.69	16.85	40.60	21.03	25.28
Centrally planned economies	13.32	8.30	9.70	17.47	11.90	12.05	23.00	14.00	16.40	41.41	27.26	29.28
Total developed countries	34.37	22.12	21.94	41.66	27.24	26.27	51.28	30.69	33.25	82.01	48.29	54.56
Developing countries												
Africa	0.61	0.48	0.27	0.77	0.65	0.38	1.20	0.88	0.54	2.31	1.71	1.01
Latin America	2.98	2.21	1.37	4.09	3.13	1.89	5.80	4.46	2.90	11.20	8.82	5.47
Near East	1.93	1.01	0.06	2.72	1.38	0.08	4.17	1.94	0.11	8.06	4.05	0.23
Far East	5.57	1.73	1.10	7.80	2.42	1.47	11.53	3.45	2.08	23.97	6.47	3.92
Total market ec.	11.09	5.43	2.80	15.38	7.58	3.82	22.70	10.73	5.63	45.54	21.05	10.63
Asian centrally planned economies	5.88	1.94	0.60	7.42	2.67	0.80	10.00	3.75	1.01	17.91	6.88	1.72
Total developing countries	16.97	7.37	3.40	22.80	10.25	4.62	32.70	14.48	6.64	63.45	27.93	12.35
Total world	51.34	29.49	25.34	64.46	37.49	30.89	83.98	45.17	39.89	145.46	76.22	66.91

Source: For the period up to 1987/88, FAO/UNIDO/World Bank Working Group on Fertilizers, Paris meeting of June 19-23, 1978.
For the period 1987/88 to 2000/2001, calculated as discussed in section 4.2.1 and 4.2.2 of this study.

TABLE B1. NITROGEN, PHOSPHATE AND POTASH CAPACITY, BY REGION, 1976 - 1982 1/

(million metric tons N, P_2O_5, K_2O)

	1977/78			1978/79			1979/80		
	N	P_2O_5	K_2O	N	P_2O_5	K_2O	N	P_2O_5	K_2O
Developed Market Economies	38.41	17.14	17.81	40.37	17.19	18.05	40.84	17.48	18.34
North America	18.84	9.69	10.29	19.47	9.69	10.48	19.85	9.69	10.59
Western Europe	14.78	5.22	6.77	16.11	5.27	6.82	16.20	5.44	7.00
Oceania	0.44	0.20	-	0.44	0.20	-	0.44	0.20	-
Other Dev. Market Econ.	4.35	2.03	0.75	4.35	2.03	0.75	4.35	2.15	0.75
Developing Market Economies	12.81	4.53	0.03	15.39	4.98	0.03	18.79	5.36	0.03
Africa	0.39	1.55	-	0.55	1.55	-	1.10	1.88	-
Latin America	3.87	0.99	0.03	3.89	0.99	0.03	4.22	0.99	0.03
Near East	2.57	0.78	-	3.41	1.18	-	5.10	1.23	-
Far East	5.98	1.21	-	7.54	1.26	-	8.37	1.26	-
Centrally Planned Economies	33.55	5.10	13.34	38.71	5.81	14.46	41.30	6.19	15.38
Asia	10.04	0.07	0.34	11.13	0.07	0.36	11.13	0.18	0.38
Europe and USSR	23.51	5.03	13.00	27.58	5.74	14.10	30.17	6.01	15.00
World Total	84.77	26.77	31.18	94.47	27.98	32.54	100.93	29.03	33.75

	1980/81			1981/82			1982/83		
	N	P_2O_5	K_2O	N	P_2O_5	K_2O	N	P_2O_5	K_2O
Developed Market Economies	40.92	17.65	18.63	41.29	17.65	19.40	41.56	17.65	19.41
North America	19.85	9.69	10.86	19.85	9.69	11.58	19.85	9.69	11.58
Western Europe	16.20	5.61	7.02	16.57	5.61	6.97	16.84	5.61	6.93
Oceania	0.44	0.20	-	0.44	0.20	-	0.44	0.20	-
Other Dev. Market Econ.	4.43	2.15	0.75	4.43	2.15	0.85	4.43	2.15	0.90
Developing Market Economies	19.89	8.02	0.03	23.43	8.54	0.03	26.42	8.64	0.75
Africa	1.10	2.51	-	1.10	2.51	-	1.10	2.51	-
Latin America	4.71	1.56	0.03	5.77	2.08	0.03	7.20	2.08	0.03
Near East	5.10	2.41	-	5.91	2.41	-	6.46	2.41	0.72
Far East	8.98	1.54	-	10.65	1.54	-	11.66	1.64	-
Centrally Planned Economies	42.82	7.34	16.40	46.65	7.67	17.05	47.60	7.67	17.65
Asia	11.13	0.18	0.40	11.13	0.18	0.45	11.13	0.18	0.50
Europe and USSR	31.69	7.16	16.00	35.52	7.49	16.60	36.47	7.49	17.15
World Total	103.63	33.01	35.06	111.37	33.86	36.48	115.58	33.96	37.81

1/ See notes to the tables FAO August 1978.

Source: UNIDO/FAO/World Bank Working Group on Fertilizers, June 1978

TABLE . B2. WORLD NITROGEN FERTILIZER SUPPLY CAPABILITY, DEMAND AND BALANCE, BY REGION, 1976 – 1982 1/

(million metric tons N)

	1977/78			1978/79			1979/80			1980/81		
	Supply	Demand	Balance	Supply	Demand	Balance	Supply	Demand	Balance	Supply	Demand	Balance
Developed Market Economies	23.50	20.16	+3.34	24.58	21.05	+3.53	25.54	21.78	+3.76	26.12	22.52	+3.60
North America	11.32	10.12	+1.20	11.95	10.77	+1.18	12.57	11.17	+1.40	12.82	11.56	+1.26
Western Europe	10.11	8.66	+1.45	10.50	8.86	+1.64	10.81	9.14	+1.67	11.08	9.44	+1.64
Oceania	0.20	0.24	-0.04	0.21	0.24	-0.03	0.21	0.26	-0.05	0.23	0.27	-0.04
Other Dev. Market Econ.	1.87	1.14	+0.73	1.92	1.18	+0.74	1.95	1.21	+0.74	1.99	1.25	+0.74
Developing Market Economies	6.41	9.77	-3.36	7.86	10.94	-3.08	9.18	11.94	-2.76	10.64	12.94	-2.30
Africa	0.21	0.55	-0.34	0.23	0.62	-0.39	0.26	0.67	-0.41	0.31	0.72	-0.41
Latin America	1.38	2.48	-1.10	1.49	2.69	-1.20	1.67	2.92	-1.25	1.87	3.15	-1.28
Near East	1.24	1.73	-0.49	1.61	1.86	-0.25	1.89	2.04	-0.15	2.35	2.23	+0.12
Far East	3.58	5.01	-1.43	4.53	5.77	-1.24	5.36	6.31	-0.95	6.11	6.84	-0.73
Centrally Planned Economies	18.68	18.00	+0.68	20.25	19.14	+1.11	21.75	20.47	+1.28	23.98	21.92	+2.06
Asia	4.21	5.73	-1.52	4.49	5.90	-1.41	4.87	6.26	-1.39	5.34	6.68	-1.34
Europe and USSR	14.47	12.27	+2.20	15.76	13.24	+2.52	16.88	14.21	+2.67	18.64	15.24	+3.40
World Total	48.59	47.93	+0.66	52.69	51.13	+1.56	56.47	54.19	+2.28	60.74	57.38	+3.36

	1981/82			1982/83			1987/88		
	Supply	Demand	Balance	Supply	Demand	Balance	Supply	Demand	Balance
Developed Market Economies	26.55	23.22	+3.33	26.76	24.14	+2.62		29.80	
North America	12.92	11.94	+0.98	12.96	12.40	+0.56		15.00	
Western Europe	11.36	9.71	+1.65	11.51	10.12	+1.39		12.72	
Oceania	0.25	0.29	-0.04	0.26	0.30	-0.04		0.47	
Other Dev. Market Econ.	2.02	1.28	+0.74	2.03	1.32	+0.71		1.61	
Developing Market Economies	11.75	14.03	-2.28	12.81	15.17	-2.36		21.93	
Africa	0.34	0.77	-0.43	0.37	0.82	-0.45		1.02	
Latin America	2.05	3.39	-1.34	2.28	3.65	-1.37		5.73	
Near East	2.97	2.44	+0.53	3.31	2.66	+0.65		4.01	
Far East	6.39	7.43	-1.04	6.85	8.04	-1.19		11.17	
Centrally Planned Economies	26.71	23.41	+3.30	28.13	24.80	+3.33		32.30	
Asia	5.85	7.13	-1.28	6.11	7.43	-1.32		10.00	
Europe and USSR	20.86	16.28	+4.58	22.02	17.37	+4.65		22.30	
World Total	65.01	60.66	+4.35	67.70	64.11	+3.59		84.03	

1/ See notes to the tables FAO August 1978.

Source: UNIDO/FAO/World Bank Working Group on Fertilizers, June 1978

TABLE B3. WORLD PHOSPATE FERTILIZER SUPPLY CAPABILITY, DEMAND AND BALANCE, BY REGION, 1976–1982 1/

(million metric tons P_2O_5)

	1977/78					1978/79				
	PAP	OP	TP	D	B	PAP	OP	TP	D	B
Developed Market Economies	13.29	5.83	19.12	13.39	+5.73	13.55	5.81	19.36	13.82	+5.54
North America	8.04	0.89	8.93	5.49	+3.44	8.14	0.89	9.03	5.69	+3.34
Western Europe	3.83	3.36	7.19	5.51	+1.68	3.92	3.34	7.26	5.71	+1.55
Oceania	0.13	1.12	1.25	1.26	-0.01	0.13	1.13	1.26	1.27	-0.01
Other Dev. Market Econ.	1.29	0.46	1.75	1.13	+0.62	1.36	0.45	1.81	1.15	+0.66
Developing Market Economies	2.93	1.26	4.19	5.18	-0.99	3.19	1.34	4.53	5.43	-0.90
Africa	1.10	0.23	1.33	0.45	+0.88	1.13	0.24	1.37	0.48	+0.89
Latin America	0.59	0.58	1.17	2.14	-0.97	0.60	0.58	1.18	2.21	-1.03
Near East	0.43	0.22	0.65	0.94	-0.29	0.57	0.22	0.79	1.01	-0.22
Far East	0.81	0.23	1.04	1.65	-0.61	0.89	0.30	1.19	1.73	-0.54
Centrally Planned Economies	3.37	5.81	9.18	9.04	+0.14	4.16	6.04	10.20	10.24	-0.04
Asia	0.03	1.66	1.69	1.79	-0.10	0.03	1.78	1.81	1.94	-0.13
Europe and USSR	3.34	4.15	7.49	7.25	+0.24	4.13	4.26	8.39	8.30	+0.09
World Total	19.59	12.90	32.49	27.61		20.90	13.19	34.09	29.49	
Available World Supply	-	-	31.52	27.61	+3.91	-	-	33.07	29.49	+3.58

	1979/80					1980/81				
	PAP	OP	TP	D	B	PAP	OP	TP	D	B
Developed Market Economies	13.66	5.82	19.48	14.27	+5.21	13.85	5.84	19.69	14.63	+5.06
North America	8.15	0.88	9.03	5.89	+3.14	8.15	0.83	9.03	6.03	+3.00
Western Europe	4.03	3.32	7.35	5.88	+1.47	4.16	3.30	7.46	6.03	+1.43
Oceania	0.13	1.18	1.31	1.32	-0.01	0.13	1.23	1.36	1.37	-0.01
Other Dev. Market Econ.	1.35	0.44	1.79	1.18	+0.61	1.41	0.43	1.84	1.20	+0.64
Developing Market Economies	3.55	1.50	5.05	6.01	-0.96	4.47	1.71	6.18	6.48	-0.30
Africa	1.22	0.25	1.47	0.52	+0.95	1.51	0.26	1.77	0.56	+1.21
Latin America	0.60	0.61	1.21	2.43	-1.22	0.78	0.67	1.45	2.66	-1.21
Near East	0.72	0.27	0.99	1.09	-0.10	1.16	0.39	1.55	1.18	+0.37
Far East	1.01	0.37	1.38	1.97	-0.59	1.02	0.39	1.41	2.08	-0.67
Centrally Planned Economies	4.57	6.21	10.78	11.20	-0.42	5.19	6.38	11.57	12.18	-0.61
Asia	0.06	1.89	1.95	2.10	-0.15	0.10	2.00	2.10	2.28	-0.18
Europe and USSR	4.51	4.32	8.83	9.10	-0.27	5.09	4.38	9.47	9.90	-0.43
World Total	21.78	13.53	35.31	31.48		23.51	13.93	37.44	33.29	
Available World Supply	-	-	34.25	31.48	+2.77	-	-	36.32	33.29	+3.03

1/ See noted to the tables

NOTE: PAP = Phosphoric Acid Supply; OP = Other Phosphate; TP = Total Phosphate Supply
D = Demand; B = Balance

Source: UNIDO/FAO/World Bank Working Group on Fertilizers, June 1978

TABLE B3. (continued)

	1981/82					1982/83				
	PAP	OP	TP	D	B	PAP	OP	TP	D	B
Developed Market Economies	13.97	5.84	19.81	15.00	+4.81	14.00	5.85	19.85	15.34	+4.51
North America	8.15	0.89	9.04	6.18	+2.86	8.15	0.90	9.05	6.30	+2.75
Western Europe	4.24	3.28	7.52	6.19	+1.33	4.26	3.26	7.52	6.35	+1.17
Oceania	0.13	1.25	1.38	1.40	−0.02	0.13	1.28	1.41	1.43	−0.02
Other Dev. Market Econ.	1.45	0.42	1.87	1.23	+0.64	1.46	0.41	1.87	1.26	+0.61
Developing Market Economies	5.16	1.75	6.91	7.03	−0.12	5.96	1.81	7.77	7.58	+0.19
Africa	1.72	0.27	1.99	0.60	+1.39	1.77	0.28	2.05	0.65	+1.40
Latin America	0.76	0.67	1.43	2.90	−1.47	1.36	0.67	2.03	3.13	−1.10
Near East	1.55	0.39	1.94	1.28	+0.66	1.66	0.39	2.05	1.38	+0.67
Far East	1.13	0.42	1.55	2.25	−0.70	1.17	0.47	1.64	2.42	−0.78
Centrally Planned Economies	5.80	6.70	12.50	13.37	−0.87	6.03	7.03	13.06	14.57	−1.51
Asia	0.11	2.16	2.27	2.47	−0.20	0.11	2.33	2.44	2.67	−0.23
Europe and USSR	5.69	4.54	10.23	10.90	−0.67	5.92	4.70	10.62	11.90	−1.28
World Total	24.93	14.29	39.22	35.40		25.99	14.69	40.68	37.49	
Available World Supply	–	–	38.04	35.40	+2.64	–	–	39.46	37.49	+1.97

	1987/88				
	PAP	OP	TP	D	B
Developed Market Economies				16.69	
North America				6.86	
Western Europe				6.85	
Oceania				1.60	
Other Dev. Market Econ.				1.38	
Developing Market Economies				10.73	
Africa				0.88	
Latin America				4.46	
Near East				1.94	
Far East				3.45	
Centrally Planned Economies				17.75	
Asia				3.75	
Europe and USSR				14.00	
World Total				45.17	
Available World Supply				–	

NOTE: PAP = Phosphoric Acid Supply;
OP = Other Phosphate;
TP = Total Phosphate Supply;
D = Demand;
B = Balance

TABLE B4. WORLD POTASH SUPPLY CAPABILITY, DEMAND AND BALANCE, BY REGION, 1976-1982 1/

(million metric tons K_2O)

	1977/78			1978/79			1979/80			1980/81		
	Supply	Demand	Balance	Supply	Demand	Balance	Supply	Demand	Balance	Supply	Demand	Balance
Developed Market Economies	15.99	11.67	+4.32	16.28	12.38	+3.90	16.60	12.76	+3.84	16.81	13.28	+3.53
North America	9.14	5.37	+3.77	9.23	5.79	+3.44	9.35	5.81	+3.54	9.48	6.10	+3.38
Western Europe	6.14	5.22	+0.92	6.34	5.48	+0.86	6.54	5.78	+0.76	6.62	5.97	+0.65
Oceania	-	0.24	-0.24	-	0.25	-0.25	-	0.30	-0.30	-	0.32	-0.32
Other Dev. Market Econ.	0.71	0.84	-0.13	0.71	0.86	-0.15	0.71	0.87	-0.16	0.71	0.89	-0.18
Developing Market Economies	0.02	2.50	-2.48	0.02	2.75	-2.73	0.02	3.00	-2.98	0.02	3.26	-3.24
Africa	-	0.24	-0.24	-	0.27	-0.27	-	0.30	-0.30	-	0.33	-0.33
Latin America	0.02	1.24	-1.22	0.02	1.37	-1.35	0.02	1.50	-1.48	0.02	1.63	-1.61
Near East	-	0.05	-0.05	-	0.06	-0.06	-	0.06	-0.06	-	0.07	-0.07
Far East	-	0.97	-0.97	-	1.05	-1.05	-	1.14	-1.14	-	1.23	-1.23
Centrally Planned Economies	12.34	9.80	+2.54	13.35	10.30	+3.05	14.19	10.89	+3.30	15.12	11.45	+3.67
Asia	0.31	0.55	-0.24	0.32	0.60	-0.28	0.34	0.65	-0.31	0.36	0.73	-0.37
Europe and USSR	12.03	9.25	+2.78	13.03	9.70	+3.33	13.85	10.24	+3.61	14.76	10.72	+4.04
World Total	28.35	23.97		29.65	25.43		30.81	26.65		31.95	27.99	
Available World Supply	25.99	23.97	+2.02	27.19	25.43	+1.76	28.25	26.65	+1.60	29.29	27.99	+1.30

	1981/82			1982/83			1987/88		
	Supply	Demand	Balance	Supply	Demand	Balance	Supply	Demand	Balance
Developed Market Economies	17.21	13.70	+3.51	17.57	14.11	+3.46		16.79	
North America	9.83	6.28	+3.55	10.17	6.50	+3.67		8.20	
Western Europe	6.57	6.17	+0.40	6.54	6.32	+0.22		7.10	
Oceania	-	0.35	-0.35	-	0.38	-0.38		0.50	
Other Dev. Market Econ.	0.81	0.90	-0.09	0.86	0.91	-0.05		0.99	
Developing Market Economies	0.02	3.53	-3.51	0.16	3.79	-3.63		5.53	
Africa	-	0.36	-0.36	-	0.39	-0.39		0.54	
Latin America	0.02	1.76	-1.74	0.02	1.89	-1.87		2.90	
Near East	-	0.07	-0.07	0.14	0.08	+0.06		0.11	
Far East	-	1.34	-1.34	-	1.43	-1.43		1.98	
Centrally Planned Economies	15.71	12.06	+3.65	16.25	12.85	+3.40		17.41	
Asia	0.41	0.77	-0.36	0.45	0.80	-0.35		1.01	
Europe and USSR	15.30	11.29	+4.01	15.80	12.05	+3.75		16.40	
World Total	32.94	29.29		33.98	30.75			39.73	
Available World Supply	30.20	29.29	+0.91	31.15	30.75	+0.40		-	

1/ See notes to the tables.

FAO August 1978.

Source: UNIDO/FAO/World Bank Working Group on Fertilizers, June 1978

TABLE B.5 ADDITIONS TO AMMONIA CAPACITY IN DEVELOPING COUNTRIES, BY COUNTRY, 1974-198[illegible]

('000 Metric Tons per Year)

	1974/75	1975/76	1976/77	1977/78	1978/79	1979/80	1980/81	1981/82	1982/83	IDF
Africa	-	-	-	-	165	544	-	-	-	1,909
Algeria	-	-	-	-	-	544	-	-	-	272
Morocco	-	-	-	-	-	-	-	-	-	592
Tunisia	-	-	-	-	-	-	-	-	-	544
Gabon	-	-	-	-	54	-	-	-	-	-
Madagascar	-	-	-	-	-	-	-	-	-	44
Kenya	-	-	-	-	54	-	-	-	-	-
Nigeria	-	-	-	-	-	-	-	-	-	408
Zambia	-	-	-	-	57	-	-	-	-	49
Latin America	327	-	533	900	27	326	492	1,061	1,428	2,622
Cuba	-	-	-	-	-	-	-	-	-	272
Mexico	246	-	615	354	-	-	-	738	738	-
Netherlands Antilles	-	-	-82	-	-	-	-	-	-	-
Trinidad	-	-	-	296	-	-	-	323	323	-
Venezuela	-	-	-	-	-	-	-	-	-	369
Argentina	-	-	-	-	-	-	-	-	-	358
Bolivia	-	-	-	-	-	-	-	-	-	348
Brazil	-	-	-	250	-	326	492	-	-	326
Chile	-	-	-	-	-	-	-	-	367	-
Colombia	-	-	-	-	27	-	-	-	-	406
Ecuador	-	-	-	-	-	-	-	-	-	271
Peru	81	-	-	-	-	-	-	-	-	272
Near East	-	104	-	272	325	272	-	-	-	705
Africa:										
Egypt	-	104	-	-	325	272	-	-	-	325
Libya	-	-	-	272	-	-	-	-	-	272
Sudan	-	-	-	-	-	-	-	-	-	108
Asia:	58	-	489	-	516	1,414	-	816	545	1,606
Afghanistan	58	-	-	-	-	-	-	-	-	-
Abu Dhabi	-	-	-	-	-	-	-	544	-	-
Bahrain	-	-	-	-	-	-	-	-	-	271
Iran	-	-	-	-	272	326	-	-	-	-
Iraq	-	-	217	-	-	544	-	-	-	544
Qatar	-	-	-	-	244	-	-	-	-	-
Saudi Arabia	-	-	-	-	-	-	-	-	-	519
Syria	-	-	-	-	-	272	-	-	-	-
Turkey	-	-	272	-	-	272	-	272	545	272
Far East	466	532	1,007	433	1,561	826	613	1,663	1,013	2,183
Bangladesh	-	179	-	-	-	-	-	251	-	-
Burma	-	-	-	-	-	-	-	-	130	-
India	287	353	326	161	1,096	407	613	734	611	1,047
Indonesia	179	-	272	272	272	-	-	406	272	-
Korea, South	-	-	409	-	-	-	-	-	-	-
Pakistan	-	-	-	-	193	272	-	272	-	215
Philippines	-	-	-	-	-	147	-	-	-	489
Sri Lanka	-	-	-	-	-	-	-	-	-	-
Thailand	-	-	-	-	-	-	-	-	-	432
DEVELOPING MARKET ECONOMIES	851	636	2,029	1,605	2,594	3,382	1,105	3,540	2,986	9,025

TABLE B.6 ADDITIONS TO PHOSPHORIC ACID CAPACITY IN DEVELOPING COUNTRIES, BY COUNTRY, 1974-1982
('000 Tons P_2O_5)

	1974/75	1975/76	1976/77	1977/78	1978/79	1979/80	1980/81	1981/82	1982/83	IDF
Africa	132	330	362	-	-	313	643	-	-	1,487
Algeria	-	-	-	-	-	-	-	-	-	330
Morocco	-	330	330	-	-	165	495	-	-	695
Tunisia	132	-	32	-	-	148	148	-	-	-
Senegal	-	-	-	-	-	-	-	-	-	132
Togo	-	-	-	-	-	-	-	-	-	330
Latin America	99	83	38	-	-	-	563	523	-	516
Cuba	-	-	-	-	-	-	-	-	-	-
Mexico	-	-	15	-	-	-	63	198	-	-
Brazil	99	-	-	-	-	-	500	325	-	-
Chile	-	-	-	-	-	-	-	-	-	-
Colombia	-	-	-	-	-	-	-	-	-	146
Peru	-	-	-	-	-	-	-	-	-	370
Venezuela	-	83	23	-	-	-	-	-	-	-
Near East	206	-	74	-	405	40	1,182	-	-	348
Cyprus	-	-	-	-	-	40	-	-	-	-
Egypt	-	-	-	-	-	-	56	-	-	152
Iran	-	-	-	-	100	-	-	-	-	-
Iraq	-	-	-	-	-	-	416	-	-	-
Jordan	-	-	-	-	-	-	410	-	-	-
Lebanon	99	-	-	-	-	-	-	-	-	-
Syria	-	-	-	-	160	-	-	-	-	96
Turkey	107	-	74	-	145	-	300	-	-	100
Far East	45	91	486	119	59	-	277	-	82	40
Bangladesh	45	-	-	-	-	-	-	-	-	40
India	-	33	268	119	59	-	277	-	82	-
Indonesia	-	-	-	-	-	-	-	-	-	-
Korea	-	58	218	-	-	-	-	-	-	-
Pakistan	-	-	-	-	-	-	-	-	-	80
Philippines	-	-	-	-	-	-	-	-	-	120
Developing Market Economies	482	504	960	119	464	353	2,665	523	82	2.301

C. Notes to Tables produced by UNIDO/FAO/IBRD Working Group on Fertilizers

1. The forecasts of world fertilizer production capacity, supply capability and demand at the global and regional level were prepared by the FAO/UNIDO/ World Bank Working Group on Fertilizers in cooperation with representatives of fertilizer industry and other organizations in June 1978.

Capacity

2. The estimates of production capacity contained in Table B1. are based on existing capacities plus information on new capacities to be completed by 1982/83 that are either under construction or known to be firmly committed as at 31 May 1978. Capacity is measured in million of metric tons of N, P_2O_5 and K_2O. The countries included in each region are listed in Part D of the Statistical Annex.

3. Capacities of ammonia and phosphoric acid plants were taken at their nameplate rated daily capacities multiplied by 340 days of yearly operation for North America and 330 days for other countries/regions.

4. Potash capacity is based on marketable production of potash minerals with days of yearly operations based on past experience for each mine/deposit.

5. Capacity to produce nitrogen fertilizers is for anhydrous ammonia only; however such capacity is the basis for some 97 per cent of world nitrogen fertilizer capacity.

6. Capacity to produce phosphate fertilizers is for wet-process phosphoric acid only; such capacity is the basis for over 50 per cent of phosphatic fertilizers; however, in the tables estimating supply capability production of phosphatic fertilizers not based on wet-process phosphoric acid ("other phosphate") is included.

Supply Capability

7. The forecasts of nitrogen fertilizer supply capability at the global and regional levels are based on the estimates of capacity. They forecast maximum supply capability, of existing and new capacities in each region, except that cuts in capacity announced by some producers have been taken into account in some regional totals, e.g. in North America and Japan (Other Developed Countries).

8. Estimates of the maximum supply capability of existing ammonia production units is based on the maximum rate of capacity utilization achieved by such plants in each country in the past. This is called the "average past capacity utilization" for the country.

9. For new ammonia capacities coming on stream in a country, the progress of maximum supply capability is assumed to be from 20 per cent of "average capacity utilization" during the first six months to 70 per cent during the following 18 months; in the next 2 years and thereafter, maximum supply capability is assumed to reach 100 per cent of the average capacity utilization of the country.

10. Ammonia applied to non-fertilizer uses (amounting to about 15 per cent of capacity on the average) have been deducted to arrive at nitrogen fertilizer capacity. To calculate supply capability losses of 5 per cent in primary production and 5 per cent in secondary down-stream production and distribution have also been taken into account.

11. The forecast phosphate fertilizer supply capability includes wet process phosphoric acid (100%), other P_2O_5 production consisting of single superphosphate (100%), basic slag (100%), the phosphate rock contribution in the manufacture of concentrated superphosphate (30%) and, nitrophosphates (60 to 100% depending on region).

12. Estimates of the maximum supply capability of existing plants in a country are based the maximum "average past capacity utilization" achieved in the past.

13. For new capacities coming on stream, the progress of capacity utilization is in the first year, second year, third year and thereafter assumed to be 40,80 and 90 per cent of "average past capacity utilization" in Developed Countries and to be 35,70 and 80 per cent of average past capacity utilization in Developing Countries and Centrally Planned Asia, respectively.

14. Wet-process phosphoric acid applied to non-fertilizer uses (estimated on a country-by-country basis) have been deducted to give the acid available for fertilizer production. Losses in the production process, which are estimated at 6 per cent for all regions, have also been deducted.

15. Past experience suggests that due to transportation and distribution losses available world supply (shown in the last line of Table B?.) can be estimated to be 97 per cent of the total world maximum supply capability. Over the past nine years, this percentage has varied between 94 and 98 per cent due to lags between production and consumption and changes in inventory levels.

16. The Potash supply capability forecasts are net of losses and based on past operating experience of each mine/deposit and other information supplied to the Working Group.

17. In calculating the total world postash supply capability for fertilizer use, it is assumed that 3.5 per cent of the potash available will be used for non-fertilizer uses (technical potash).

Demand

18. The forecasts of demand at the regional level are based on what is expected to be the demand in countries of the region. The possibility that the use of fertilizers by farmers may be constrained by their insufficient awareness of the benefits of applying fertilizers and/or their ability to buy fertilizers (because of inadequate availability or price) is taken into account. Thus the level of fertilizer use in a country may be constrained by limited availability of foreign exchange, its ability to create a favourable economic climate for fertilizer use and other factors. Although these considerations cannot be quantified, they are implicit in the forecasts of demand for some countries.

19. Also implicit in the forecasts of demand is an assumption on fertilizer prices in future years. Price levels are assumed to reflect increasing costs of production and investment1/; prices are quoted to be above the low levels of 1971/72 but below the high levels of 1974/75.

1/ The costs of production and investment in new fertilizer plants are considered in document ID/WG.281/.

D. FAO CLASIFICATION OF COUNTRIES INTO REGIONS

The Economic Classes and Regions into which the world is divided for the purposes of FAO's analytical studies are given below: (countries listed in this classification are only those for which figures are shown in the Appendix Tables).

Class I : Developed Market Economies

Region (a) - Northern America: Canada, U.S.A.

Region (b) - Western Europe: Austria, Belgium-Luxembourg, Denmark, Finland, France, Germany Federal Republic, Greece, Iceland, Ireland, Italy, Malta, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland, United Kingdom, Yugoslavia.

Region (c) - Oceania: Australia, New Zealand.

Region (d) - Other Developed Market Economics: Israel, Japan, South Africa.

Class II : Developing Market Economies

Region (a) - Africa: Algeria, Angola, Benin, Botswana, Burundi, Cameroon, Cape Verde, Central African Empire, Chad, Congo, Equatorial Guinea, Ethiopia, Gabon, Gambia, Ghana, Guinea, Guinea-Bissau, Ivory Coast, Kenya, Lesotho, Liberia, Madagascar, Malawi, Mali, Mauritania, Mauritius, Morocco, Mozambique, Niger, Nigeria, Réunion, Rhodesia, Rwanda, Senegal, Seychelles, Sierra Leone, Somalia, Swaziland, Tanzania, Togo, Tunisia, Uganda, Upper Volta, Western Sahara, Zaire, Zambia.

Region (b) - Latin America: Argentina, Barbados, Bolivia, Brazil, Belize, Chile, Colombia, Costa Rica, Cuba, Dominican Republic, Ecuador, El Salvador, Grenada, Guadeloupe, Guatemala, Guyana, Haiti, Honduras, Jamaica, Martinique, Mexico, Netherlands Antilles, Nicaragua, Panama, Paraguay, Peru, St. Kitts-Nevis-Anguilla, St. Lucia, St. Vincent, Surinam, Trinidad and Tobago, Uruguay, Venezuela, Virgin Islands (U.S.).

Region (c) - Near East: Afghanistan, Bahrain, Cyprus, Egypt, Iran, Iraq, Jordan, Kuwait, Lebanon, Libya, Oman, Qatar, Saudi Arabia, Sudan, Syria, Turkey, United Arab Emirates, Yemen Arab Republic, Yemen Democratic Republic.

Region (d) - Far East: Bangladesh, Bhutan, Burma, Hong Kong, India, Indonesia, Korea Republic of, Lao, Malaysia (Peninsular Malaysia, Sabah, Sarawak), Nepal, Pakistan, Philippines, Singapore, Sri Lanka, Thailand.

Region (e) - Other Developing Market Economies: Christmas Islands (Aust.), Fiji, French Polynesia, Gilbert Islands, Nauru, Papua New Guinea, Samoa.

Class III : Centrally Planned Economies

Region (a) - Asia: China, Democratic Kampuchea, Democratic People's Republic of Korea, Mongolia, Viet Nam.

Region (b) - Europe and USSR: Albania, Bulgaria, Czechoslovakia, German Democratic Republic, Hungary, Poland, Romania, USSR.

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