

### **Tax on Profits**

Tax on profits, at the top marginal slab, reported to be as high as 63%, raises the acceptable threshold for post-tax return on equity rendering many activities financially infeasible. This high rate may also encourage evasion defeating the revenue objective.

### **Competition Law**

While it is necessary to encourage formation of industry associations to voice their collective views and suggestions, to counteract tendencies of associations to emerge as cartels, an effective anti-monopoly legislation is essential in a free market environment. The authority constituted under this law should be non-political and on par with the judiciary of the land and would be required to adjudicate on actions of business houses and discriminate between actions that promote social welfare and those hindering it.

## **18. IMPACT OF PROPOSALS IN TERMS OF BENEFITS, RISKS AND ADJUSTMENT COSTS**

### **Risks**

18.1. The sources of risks to the implementation of input reforms could arise from any of the following factors.

- (a) Stability of macroeconomic indicators such as inflation, interest rate and currency valuation
- (b) More development oriented banking norms and emergence of private banks may not take place in the short run and may affect extensive participation by the private sector. The proposals in this report support continuance and re-invigoration of the existing system to facilitate higher effectiveness and as such while there may be delays in private participation, basic services to farmers will not suffer.
- (c) The speed with which rural credit is reorganized would be an important factor influencing wide participation of private traders in retail distribution.
- (d) Undue fluctuations in international fertilizer prices, at the time of introduction of the new measures, could lead to a negative balance in the equalization fund (see Annex on Pricing Mechanism) in the short or medium term. However, this is not a serious impediment to reform except that initial liquidity for the equalization fund may have to be provided from the budget or the public debt fund.
- (e) Late and inadequate imports by distributors because of limited working capital availability could result in some part of the demand remaining unsatisfied. The incentives being built into the system would minimize possibilities of this happening and still, should this eventuality arise, the role of “buyer of last resort” conferred on GEZA would take care of such a contingency.
- (f) Insufficient response from private sector at various levels is a distinct risk considering that many have expressed uncertainty over policy changes; announcement of the reform package at the earliest possible date and wide publicity for it should go a long way in reassuring private sector that they have a role to play and that it would be facilitated and not hindered. The project design also includes institutionalized mechanisms to hold continuous dialogues with the stakeholders and consultations with them on major policy improvements and changes.

### **Social Adjustment Costs**

18.2. Parallel operation of the public system and phased introduction of the private sector inevitably would result in carrying additional expenditure till a cost-effective competitive system gets fully established. The cost of regulation and monitoring and that of additional facilities for enforcement of quality and legal compliance are necessary and would more than pay for themselves by the incremental social benefit flowing from a competitive efficient market. The cost of re-training AIMO staff on marketing techniques to gear them to responsibilities in a new environment has been built in to the project profile. Incentives for early imports and on carry-over stocks to ensure adequacy of supply and institution of an equalization fund to smoothen the adverse effects of world price fluctuations on indigenous production - but without insulating it from competition – are other social adjustment costs of the proposed reforms. The extra manpower in the Homs unit would either continue to be a burden or capitalized once for all through an attractive separation incentive payment. The manpower employed by GEZA on fertilizer import cannot be so large as to constitute a large social cost. And, in any case, for some years to come, this staffing may have to remain in position to perform the role of the “importer of last resort”

### **Benefits**

18.3. The following benefits are expected to flow from the proposals.

- (a) Smooth change over to a competitive system without abandoning the useful parts of the existing structure.
- (b) The public , cooperative and private sectors would have their respective roles to play
- (c) No retrenchment of personnel from public institutions nor any other form of hardship is envisaged
- (d) The competitive environment emerging from these reforms is likely to result in better service and at less cost.
- (e) implicit subsidies estimated to reduce by sp 1277 million selling at world prices (see annex 19 - 3), eventually, reducing the burden on the general budget, without unduly high price increases in farmer prices and releasing these resources for investment in infrastructure
- (f) Potential for increased private sector investment in the input production and distributive sectors increasing the scope for public resources to be invested in larger measure on critical infrastructure such as research and extension.
- (g) Shifting of public resources from a revenue item like implicit subsidy to investment secures benefit flows over the years having a more lasting effect on farmer welfare.
- (h) By offering inputs (fertilizer) at world prices, in due course, the proposals constitute an important step toward preparing the agro-food system for a competitive world market.

## Terms of Reference

### Implications for the Agricultural Sector of the Liberalization of Input Markets.

<b>Duration:</b>	1st Mission	3½ weeks
	2nd Mission	5½ weeks
<b>E.O.D.:</b>	1st Mission:	As soon as possible
	2nd Mission:	6 weeks after the conclusion of first mission
<b>Duty Station:</b>	Damascus, Syria	
<b>Language:</b>	English	

**Rationale:**

During the last 10 years, agricultural input markets have been gradual liberalize by (a) allowing the entrance of the private sector in input production, importation and marketing, and (b) progressively adjusting prices to domestic production and/or import costs, the main exception being kerosene and irrigation water.

The proposed study is expected to provide a systematic description of the present structure, conduct and performance of the agricultural input production and distribution system. The performance of the system will be assessed in terms of both economic efficiency and effectiveness in fulfilling agricultural production needs. Based on this assessment, the study will point out policy actions required for improving the input delivery system in terms of cost efficiency and ability to serve a more market oriented agriculture able to compete on international markets. The study will highlight the potential risks involved in the suggested policy actions, with special reference to the impacts on stability and levels of domestic production, prices and farmers' income. The study will also provide insights desirable timing and sequencing for the suggested policy actions, under the alternative assumptions of benefit maximization and risk minimization.

**Activities:**

Under the direct supervision of the FAO Operations Service in the Near East (RNER) and the Technical supervision of the Policy Assistance Branch (RNEP), and the CTA and in close collaboration with the Director of NAPC / National Project Director, Agricultural Economist and the National Task Force, the Consultant will prepare a detailed Policy study on the above subject (Implications for the agricultural sector of the liberalization of input market)

In particular the consultant will:

1. Review the present structure, conduct and performance of the agricultural input production and delivery system, pointing out roles played by main public and private agents.
2. Estimate current and projected demand, supply and balances for agricultural inputs, and assess the competitiveness and potential of the domestic agricultural requisites vis-à-vis international markets.
3. Review recent and relevant input policies with special reference to input production, price setting, international trade, delivery systems, information dissemination, and their linkages with other agricultural policies, such as credit, and technology policies.
4. Assess the impacts of the present input policies on structure and performance of the public system of enterprises for input production, international trade, and delivery.

5. Estimate implications for government budget of the present policy and institutional setting and, specifically, of the current implicit and explicit input subsidies/taxes.
6. Assess the impacts of present input policies on aggregate performance of the agricultural sector, particularly in terms of production growth and profitability, efficiency and sustainability of complementary primary resource use and farming practices.
7. Summarize the assessment of the impacts of the present input policies in terms of sustainability, effectiveness, and consistency with the present agricultural policy setting.
8. Identify and advance practical policy recommendations for improving the input production, trade and delivery system in terms of cost efficiency and effectiveness, within the presently prevailing institutional setting.
9. Identify broader policy and institutional measures to be introduced in the input production, trade and delivery system in order to allow the agro-food system to be competitive in a world market oriented scenario.
10. Provide an assessment of the expected impacts of the proposed policy actions, evaluating benefits, risks and adjustment costs, under alternative scenarios in terms of timing, sequencing and comprehensiveness of the policy reform process.
11. Prepare project profiles for provision of technical assistance in key areas of implications for the agricultural sector of the liberalization of input markets that can be submitted to funding sources.
12. Prepare a Technical report including the results of his/her study.

To accomplish the above tasks, the consultant shall undertake two missions to Syria.

In the first mission of three weeks duration in Syria, the consultant will:

- Undertake field visits and conduct interviews with concerned parties to have a preliminary understanding of the implications for the agricultural sector of the liberalization of input markets in Syria;
- Prepare a plan of work and develop a detailed scheme of analysis;
- Provide detailed account of the data and information required for the successful completion of the suggested study and appropriate methodologies for its collection and preliminary processing;
- Propose a time schedule for data collection and analysis;
- Train members of the task force on data collection and processing;
- Supervise initial stages of data collection and provide on-time guidance; and
- Prepare a report in English on his preliminary findings and indications on the main areas of concern he / she plans to address in the second mission and an annotated outline of the final study-report, and submit to the FAO Operation Service in Cairo.

In the second mission of five weeks duration in Syria, the consultant will:

- Review and validate the data collected by the task force, identify gaps and take necessary action for quickly filling these gaps;
- Organize and implement a short training session for the project trainees to illustrate the methodology employed in this study, and highlight its main findings;
- Give a seminar at the end of the assignment for senior Government officials of MAAR, other relevant institutions and parastatals, concerned political and professional organizations, concerned agents in the private sector and representatives of the donor community, to present and discuss the results of the study.
- Prepare while in Syria, a draft technical report in English (with an executive summary) including the main findings, conclusions and policy recommendations on the environmental impacts of agricultural production practices in Syria and submit it to FAO for clearance; and

- Provide a brief evaluation of the support provided by each member of the task force, excluding the trainees.

The Consultant will finalize the report, including FAO comments and submit it to FAO, both as hard copy and on diskette, within two weeks from receiving those comments.

**Qualifications:**

Advanced degree in agricultural economics with 10 years experience in economics of agricultural inputs sector and relevant policies.

**List of Meetings  
(Chronological order)**

1. Directorate of Statistics and Planning, MAAR, Damascus  
Dr. Nahi Al Shibani, Director  
Dr. Shabab Nasier
2. Directorate of Extension, MAAR, Damascus  
Mr. M. Adnan Sharaf, Deputy Director
3. Directorate of Agricultural Affairs, Damascus  
Mr. Nabil Khouri
4. Citrus Bureau, Tartus  
Dr. Waljieh Al Mouic, Director
5. Sub-Directorate of Agricultural Affairs, Tartus  
Mr. Mustafa Mohammed, Director
6. Agricultural Cooperative Bank, Tartus Branch  
Mr. Taher Tarsesa, Head of the Branch
7. Port Authority, Tartus  
General Director  
Mr. Nihad Karazi, Finance Director
8. Agricultural Directorate, Homs  
Mr. Ali Al Akari, Director  
Mr. Hasan Al Wayah, Sub-Directorate, Statistics and Planning
9. Nakira Village, Homs  
Farmer Group  
Ghado Al Melhem, Agricultural Engineer Extension
10. Retailer in Agricultural Chemicals and Seeds, Homs  
Samer Khourdi
11. General Organization for Seed Multiplication, Head office, Aleppo  
Dr. Ali Nasr Dibeh, General Director  
Mr. Abdul Wahab Madarati, Deputy General Director  
Mr. Kazem Al Dendal, Marketing Director  
Mr. Mohi Al Den Abou Dan, Statistics and Planning Director
12. General Farmers' Union, Aleppo Governorate  
Mr. Gasem Al Said Mohamed, Director
13. Agricultural Cooperative Bank, Aleppo Branch  
Mr. Mohamed Mosbah Sakal
14. General Establishment for Ginning and Marketing Cotton, Aleppo  
Mr. Asim Mansour, Director, Statistics and Planning

15. Attanmiah Agricultural Company and Khoury & Compnay  
Dr. Elias Terzikhan, Branch Manager
16. Agricultural Trading & Olive manufacturing Co.  
Mr. Fadel S. Kenno, Agricultural Engineer
17. Agriculture Sub-Directorate, Al Zorba Nahia, Aleppo  
Mr. Ahmed Mansour, Director-in-charge
18. Ghamaini Village, Al Zarba Nahia  
Farmer Group
19. Aleppo Chamber of Commerce  
Mr. M. Saleh Al Mallah, President , Aleppo Chamber and Vice-President, Federation of Syrian Chambers of Commerce
20. Debbane & Co., Homs  
Mr. Omar Farouk Merheb, Administration & Commercial Affairs Manager  
Mr. Rafie Tomani, Agronomist, Technical Department
21. General Fertilizers Company  
Ahmad Al Ama, Production Director
22. Agriculture Engineers' Syndicate, Homs Branch  
Mr. Mohamed Faez Kojok, Director
23. Directorate of Veterinary Medicines  
Dr. Fedaa Al Akhras, Director
24. Adamco Life Sciences (Manufacturer of Livestock Medicines)  
Mr. Naji S. Ali-Adeeb, President  
Dr. Khaled Khoder, Marketing & Technical Manger
25. Directorate of Soil (Land), MAAR  
Dr. Joumah Abdul-Karim, Director
26. Plant Nutrition & Fertility Sub-Directorate, Lands Directorate, MAAR  
Ms Budoor Al Bunni , Head of Section
27. Fertilizer Sub-Directorate, Land Directorate, MAAR  
Mr. Talal Al Khadra
28. General Establishment for Chemical Industry  
Mr. Kamal Tumek, Director of Planning and Statistics
29. Foreign Trade Organization for Chemicals and Foodstuffs (known as GEZA and TAFCO being the old name)  
Mr. Yousef Jeha, Director, Chemicals Division  
Ms Mari Aboudeh, Cost Section, Accounting Division
30. Central Bank of Syria  
Dr. Goerge Al Ozon, Director of Foreign Relations
31. Directorate of Plant Protection, MAAR  
Dr. Khalil Abdul Haleem, Director

32. National Center for Agricultural Information and Documentation  
Mr. Madmoon Ruhhal
33. Ministry of Supply and Internal Trade  
Dr M Jamal Alsatel, Price Affairs Director
34. Irrigation & Water Use Directorate  
Dr Gorge Soumi
35. Dept. of Agricultural Scientific Research  
Mr Ali Shehadahi, Wheat Researcher
36. Agricultural Directorate, Daraa  
Mr Fares Al Faleh, Director  
Mr Isam Aba Zaid, Statistics & Planning
37. Agricultural Bank, Daraa – Warehouse  
Mr Khalel Gebara, Warehouse-in-charge
38. Extension Unit (Sub-Section), Tafas Town, Daraa
39. Farmer Group, Tafas, Daara
40. Grain Wholesaler, Tafas, Daara  
Mr Ahmed Abu Jaish
41. Agricultural Cooperative Bank, Damascus  
Mr Mustaf Al Dawwa, Director, credit  
Mr Ahmed Zahri, Director, Accounts  
Ms Sahar Hag Saleh, Finance section
42. General Establishment for Geology and Mineral Resources  
Dr Mohd. Talal Ballani, Director General  
Dr Rabah Hussein, Director, Planning
43. Directorate of Agricultural Affairs  
Mr Abdul Moen Kadamani, Director
44. Debbane & Co.  
Mr Mounir Haddad, General Manager  
Mr Elias Salhani, Marketing Manager
45. Directorate of Forestry  
Mr Hassan Ibrahim, Director
46. Directorate of Agriculture, Al Hassake  
Mr Husein Bakkour, Deputy Director
47. Joint Venture Retail Outlet  
Mr Sameer Fahed, Agricultural Engineer
48. Seed Processing Unit, Ministry of Supply  
Mr Antar Fakman, Soils Branch Director, Eastern Silos  
Mr Faheem Jarjour, Manager Seed Processing Unit

49. Private farmer, Sfayya Town, Hassake  
Mr Rushdi Zouba
50. Directorate of Agriculture, Deir Ezzor  
Mr Maan Al Akka, Deputy Director
51. Agricultural Section, Mouhasan Town, Deir Ezzor  
Mr Hagen Al Sameer, Chief of Agricultural section
52. Group of Farmers, Boulail village, Deir Ezzor
53. State Farm, Boulail
54. Seventh of April Research Station, Iselo, Deir Ezzor  
Mr Saleh Al Khlaif, Director
55. Directorate of Finance & Budget, MAAR, Damascus  
Mr Fuad Roumich, Director

**REFERENCES**

1. Annual Agricultural Statistical Abstract 1999
2. Agricultural marketing – Liberalization and Privatization, Implementation Issues -  
FAO Occasional Paper No 4
3. Demand Forecasting for Fertilizer Marketing – FAO
4. Developing a Fertilizer Strategy for Sub-Saharan Africa, John Sanders, Mohamed  
Ahmed
5. Economics of Agricultural Policy, Graham Hallett
6. Fertilizer Industry’s Manufacturing Process and Environmental Issues – Technical  
Report No 26, International Fertilizer Industry Association
7. Fertilizer Marketing FAO Marketing Guide No 7
8. Fertilizer Strategies – FAO Land and Water Development Series No 10
9. Global Gas Scene, Policy Issues Related to Supply and Utilization, International  
Fertilizer Industry Association
10. Handbook on Environmental aspects of Fertilizer Use, International Fertilizer  
Industry Association
11. International Soil fertility Manual, Potash and Phosphate Institute
12. Promoting Private Sector Participation in Agricultural Marketing in Africa, FAO  
AGSM Occasional Paper No 6
13. Reform of Agricultural and Food marketing Policies in Sub-Saharan Africa, FAO-  
AGSM Occasional Paper No 3
14. Role of Fertilizer Pricing Policies and Subsidies in Agricultural Development,  
FAO
15. Seed Marketing, FAO Agricultural Services Bulletin 114

**Farmer Survey – Questionnaire**  
(based on last crop year experience)

**Zone No.:**-----

**Date:**-----

**Time:**-----

**A- Name of Farmer:**-----

Cultivated area (Dunnam):-----

Address: Village:----- Nahia:----- Mantika:----- Muhafaza:-----

Member of Farmer Cooperative :Yes-----No-----

**B- Crops raised last crop year: (in sequence)**

(Tick column applicable)

Name of crop	Rainfed	Irrigated/river	Irrigated pump	On remainder moisture after 1 <sup>st</sup> crop	Planting month
1-					
2-					
3-					
4-					
5-					

**C- General Information**

1- did you follow the crop plan? Yes----- No-----

2a- did you apply fertilizer? Yes----- No----- (if no go to 3a)

2b- what fertilizer did you buy? Amomium Nitrate:----- Urea:----- Sulfate Potash:-----

2c- what price did you pay? SP----- SP----- SP-----

2d- source of supply? ACB:----- Private dealer:----- Other (specify):-----

2e- how did you take delivery? - delivery at the farm by: - cooperative:-----  
- dealer:-----  
- friend:-----

- I took delivery my self - distance:-----

2f- did you get the fertilizer in time? in time:----- late:-----

3a- did you use agricultural chemicals? Yes:----- No:----- (if no go to 4)

3b- source of supply? ACB:----- Private dealer:----- Other (specify):-----

3c- how did you take delivery? - delivery at the farm by: - cooperative:-----  
- dealer:-----  
- friend:-----

- I took delivery my self - distance:-----

4- where did you get the seed? - saved myself from last crop:-----  
- from a neighbor farmer:-----

- from Ag. Coop. Bank: -----
- from dealer: -----
- any other source (specify) -----

5a- did you apply organics? Yes:----- No:----- (if no proceed to 6)

5b- source of organics? from own farm:----- bought:-----

6a- was your soil analyzed? Yes:----- No:----- (if no proceed to 7)

6b- did you receive results? Yes:----- No:-----

7a- did you receive a loan? Yes:----- No:----- (if no proceed to 8)

7b- where did you get loan from?  
 - ACB (direct) : -----  
 - ACB (coop.) : -----  
 - from friend :-----  
 - other (specify):-----

8- approximately, how much family labor did you use? - family labor: -----%  
 - outside labor: -----%  
 - total: 100%

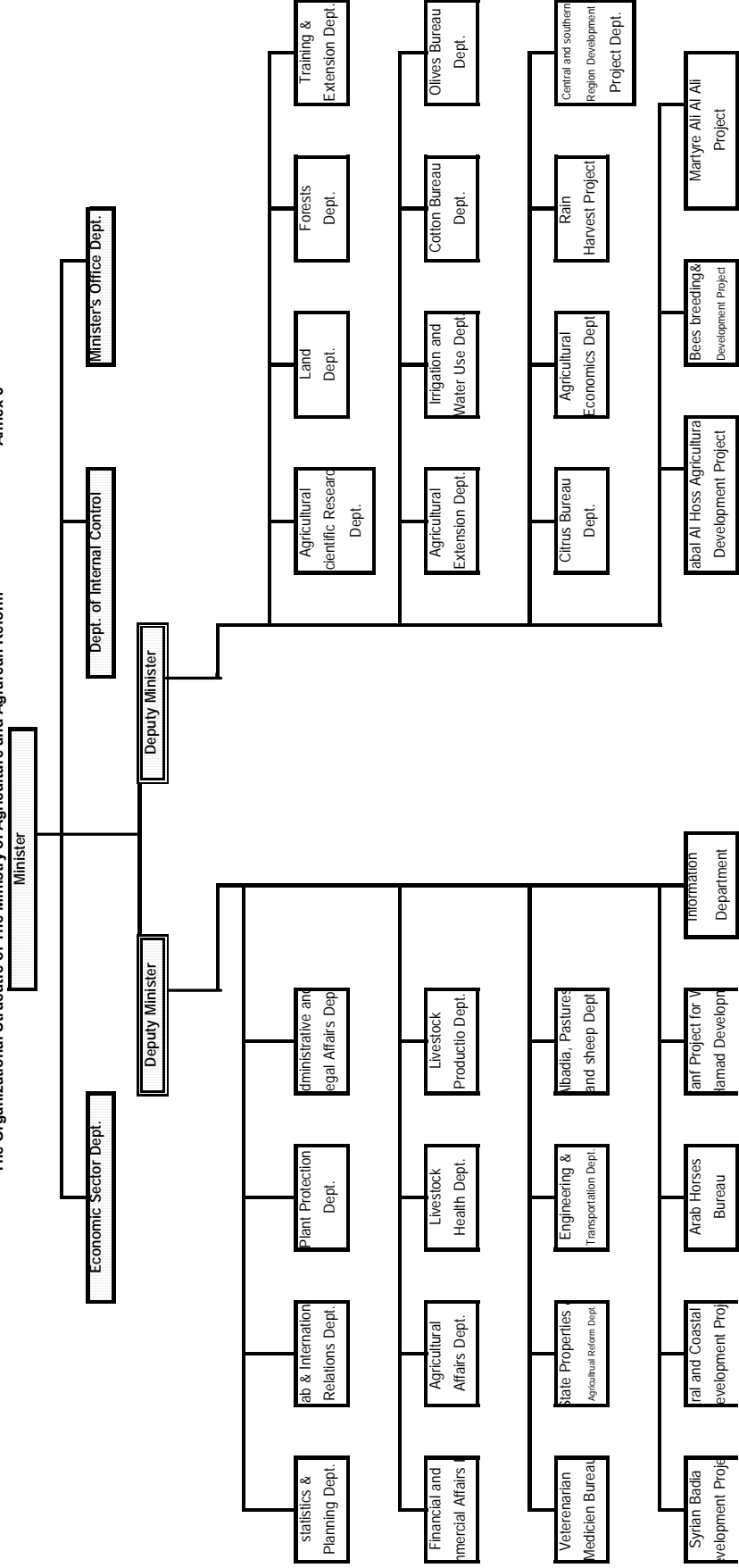
**D- Information on Crop**

9a- how much fertilizer did you apply (kg/d)?	Name of crop					
	Am. Ni.					
	Urea					
	TSP					
	Other (specify)					
9b- what was approximate yield?	KG/D					
9c- what price did you get for the crop	SP/KG					
9d- to whom did you sell your crop	- ACB					
	- Dealer					
	- Factory					
	- Other (specify)					

**Any other information not mentioned in the questionnaire may be mentioned here:**

The Organizational Structure of The Ministry of Agriculture and Agrarean Reform

Annex 5



**Department of Agricultural Affairs**

Sub – Administrative Consists of <u>Sections:</u> Divan and Correspondence Personnel	Sub – seedlings Production Consists of <u>Sections:</u> Seedlings Production Mother orchards Newly entered plants Banana Palm Monitoring and Evaluation	Sub – Fruit Trees Consists of <u>Sections:</u> Fruit trees project Green belt project Food Aid Project Monitoring and Evaluation of fruit Trees Technical studies	Sub – Vegetables Consists of <u>Sections:</u> Green – House Planting Field Vegetables Import and Export Floriculture	Sub – Sugar Beet Consists of <u>Sections:</u> Planning and Continuation Agricultural Services Monitoring and Evaluation	Sub-crops Consists of <u>Sections:</u> Cereals Pulses Maize Potato Cotton Fodder Tobacco and Medical Plant
--	--	---	---	--	--

## FERTILIZER USAGE VERSUS POTENTIAL

	Area ha	N - kg/ha	P - kg/ha	K - kg/ha	N tons	P tons	K tons	NPK Total	Share
Wheat	1721412	50	50	20	86071	86071	34428	206569	0.11
Barley	1542619	67.5	65	0	104127	100270	0	204397	0.11
Lentils	142649	30	60	0	4279	8559	0	12838	0.01
Chickpea	108012	30	60	0	3240	6481	0	9721	0.01
Cotton	274585	225	72	0	61782	19770	0	81552	0.04
Sugar beet	28663	220	130	80	6306	3726	2293	12325	0.01
Fruit trees Irrigated	1363532	400	70	200	545413	95447	272706	913566	0.49
Tobacco	15022	250	200	150	3756	3004	2253	9013	0.00
Vegetables	2300628	87	82	17	200155	188651	39111	427917	0.23
Theoretical Potential					1015128	511980	350792	1877899	1.00
Actual Usage 1998					236815	117597	6951	361363	
Actual Usage/Potential Ratio					0.23	0.23	0.02	0.19	
At 66% of farmers adopting 66% of recommended usage					442190	223018	152805	818013	
Actual usage / 66% adoption ratio					0.54	0.53	0.05	0.44	
		NPK ratio	Theoretical		1	0.50	0.35		
		NPK ratio	Actual		1	0.50	0.03		

**Assumptions**

1. Areas from Statistical Abstract 1999
2. 1998 adopted for comparison as 1999 was an acutely bad year for seasonal conditions
3. Nutrient recommendations as per schedule provided by lands Directorate
4. Wheat - the average of local wheat for zones 1 and 2 taken
5. Cotton - as provided by the Extension Directorate based on 4-ton yield and low N and P status
6. Fruits - only irrigated area reckoned and at medium NPK status
7. Vegetables - weighted average as per working below

Vegetables	Area ha	N - kg/ha	P - kg/ha	K - kg/ha	Total N tons	Total P tons	Total K tons
Winter Irrigated	574346	140	120	20	80408440	68921520	11486920
Summer Irrigated	1398632	70	70	20	97904240	97904240	27972640
Summer Non-irrigated	327650	70	70	0	22935500	22935500	0
Total	2300628				201248180	189761260	39459560
Weighted Average kg/ha					87	82	17

## ANNEX 8 (PARA 7.9)

## TRANSPORTATION COST FROM SUPPLY SOURCES TO GOVERNORATES

distances in kilometers

Destination	From Homs	From Tartous	From Lattakia	Proximate Source and km difference		Consumption pa tons*	Consumption % to total
Sweida	268	364	454	Homs	96	1204	0.2
Dara	263	359	449	Homs	96	22470	3.1
Quneitra	229	325	415	Homs	96	1204	0.2
Damascus	162	258	348	Homs	96	17289	2.4
Homs	0	96	186	Homs	96	24589	3.4
Hama	47	143	233	Homs	96	85283	11.9
Idleb	168	230	132	Lattakia	36	59530	8.3
Tartous	96	0	90	Tartous	90	19798	2.8
Lattakia	186	90	0	Lattakia	90	19407	2.7
Aleppo	193	289	186	Latt/Homs	96	172702	24.0
Al-Raqqa	388	484	381	Latt/Homs	96	61398	8.5
Dair-Ezzor	378	474	506	Homs	96	55752	7.8
Al-Hassake	545	641	538	Latt/Homs	96	178643	24.8
						719270	100.0

Note: \*N, P and K consumption for 1999 as base, from Annual Agricultural Statistics Abstract 1999, converted to material at average of 46% nutrient

**GEZA****General Establishment for Foreign Trade for Chemicals and food stuff****Accounting division**

**Import license no.**  
**LC no.**  
**Goods**  
**Net weight**  
**Gross weight**  
**Value in foreign currency**  
**Origin**  
**Shipment condition**

**Estimated cost statement for consignment no. \_\_\_\_\***

Description	SP
Stamp, documents fees	250
License extension, renewal and correction costs	124
Insurance (2% of the value) C&F free out	
Banks' commissions (2% of the value) to the correspondent bank	
Value (\$) free exchange rate 46.5 SP	
Interests and other bank costs 14% of the value in the past for three months, now 7% for one month	
Juridical fees 1500 SP, radiation check up 1000 SP (for the labs) for each consignment	
Handling costs	54.68 SP/ton (gross weight)
Customs fees	Exempted
Clearance costs	12 SP/ton (gross weight)
Demurrage	No demurrage
Chemical and germs analysis	1000 SP (for labs) for each consignment
Other costs	30 SP
Supervision	23 SP
Storage	no costs
Shipping agent	14.85SP/ton (gross weight)
Defects	0.5% of the total cost
Total cost	
Capital interest	7.5% for one month
Profit	1% of the total cost

Note: credit is given to ACB without interest

---

\* Source: GEZA, accounting division (collected by consultant), 18/9/2000

## SEED DISTRIBUTION AND COVERAGE

## ANNEX 10 (PARA 7.25)

## Sources:

1. Ag. St. Abstract 1999 for areas under crops
2. Country profile page 47-48 for 1997 seed usage
3. Planning & Statistics Directorate for 2000-2001 Plan

S No	Unit	1997 Actual					2000 Plan				
		Wheat	Barley	Lentil	Chickpea	Cotton	Wheat	Barley	Lentil	Chickpea	Cotton
1	Irrigated Area	684802	3741	1	212	250600	669937	5266	214	218	243835
2	Rainfed Area	1075997	1568452	120299	94251	0	933083	1408961	147427	50426	0
3	Total Area	1760799	1572193	120300	94463	250600	1603020	1414227	147641	50644	243835
4	Seed Rate - Irrigated Area	251	100	90	60	100	251	100	90	60	100
5	Seed Rate - Rainfed Area	180	100	90	40	0	180	100	90	40	0
6	Weighted Seed Rate	208	100	90	40	100	210	100	90	40	100
7	Actual Usage/Plan	175000	5100	1400	600	34600	200000	10000	2000	700	30000
8	Area Covered by Improved Seeds	842914	51000	15556	14983	346000	953869	100000	22222	17462	300000
9	Coverage	%	48	3	13	138	60	7	15	34	123

Note: it is possible that on cotton more than the recommended seed rate is used showing a value of more than 100%

**Plant Protection Products Distribution - Government Sector**

Value - '000 \$ except last col in SP mill

Year	Procured	Opening Stock	Closing Stock	Consumed	Stock as % of Consumption	Consumption in SP mill
1988-89	18667	8657	17819	9505	187	442
1989-90	9916	17819	14243	13492	106	627
1990-91	7882	14243	14511	7614	191	354
1991-92	9719	14511	14614	9616	152	447
1992-93	13672	14614	15104	13182	115	613
1993-94	10740	15104	15861	9983	159	464
1994-95	17133	15861	15434	17560	88	817
1995-96	13569	15434	5070	23933	21	1113
1996-97	10748	5070	2457	13361	18	621
1997-98	14102	2457	1846	14713	13	684
1998-99	10779	1846	2926	9699	30	451

Note: Conversion from \$ to SP at uniform rate of 46.5 for all the years to make figures comparable

**Plant Protection Products Distribution by Private Sector**

Year	Imported '000 \$	Imported in SP mill	Consumed SP mill
1990	1748	81	274
1991	na	na	310
1992	6886	320	407
1993	5447	253	400
1994	6555	305	426
1995	12999	604	856
1996	15258	709	856
1997	15881	738	1124
1998	25637	1192	na

Note: Conversion from \$ to SP at uniform rate of 46.5 for all the years  
to  
make figures comparable

**Value of imported chemicals\***

Value of Planned imports	150 898 75 \$ out of which 2 353 220 \$ for seed sterilizers
Stock value	4 772 312 \$ out of which 2 926 108 \$ for seed sterilizers
Actually received imports value	10 778 618 \$
Received/required	98.97% due to the cancellation of one of the wheat herbicides contract
Secured quantities value (stock + received)	15 550 930 \$ out of which 2 926 108 \$ for seed sterilizers
Secured/planned	99% for chemicals 124% for sterilizers

**Quantity of public imports of chemicals**

Decis pp 0.1%	61 120 kg
Decis 50 EC	220 liters
Dimilin 12.5 WP	525 kg
Dimilin 45 ODC	333 5 liter
Karate 2 ULV	16 200 liter
Sumithion 95 ULV	41 360 liter
Zinc phosphide	20 000 kg
K-othrin flow 25	2 000 liter
Sobrom 98 methyle promide	3 500 kg
Phostozin round tablets	39 075 kg
Dettia gas EX-B680g	4 500 kg
Puma super 75 EW	50 640 liter
Illoxan 36 EC	10 720 liter
Assert 250 EC	53 400 liter
Topik 240 EC	33 040 liter
Granstar DF	17 540 liter
Combi-dicopur	650 liter
Treflan EC	67 160 liter
Triflur 480 EC	135 000 liter
Velpar 90	2 825 liter
Hyvarx	1 925 kg
Karmex	6 525 kg

---

\*MAAR, Planning and Statistics Dept. (collected by the consultant), 19/9/2000

**Summary of Prices and Costs Reduced to Comparable Equivalents**

**ANNEX 13 (PARA 8.2)**

		Amm Nitrate	Urea	TSP
1	World Prices - Average CIF prices last 3 years	4075	6062	8351
2	World Prices - Landed Cost	4492	6549	8918
3	Current Ex-warehouse Prices	5400	7700	8200
4	Current Ex-warehouse Prices reduced to equivalent of Landed cost	4587	6657	7107
5	Homs Unit's Current Realization	5165	6365	7425
6	Homs Unit's Current Cost of Production	6463	8351	9606
7	Homs Unit's Cost of Production at 90% capacity utilization	5054	5483	8057

Note: 2,4,5,6 and 7 are on comparable basis at port landed/factory

"Costs" include profit margin and raw materials costed at export price

Above figures drawn from Annex titled "Analysis of fertilizer Production Costs"

ANNEX 14-1 (PARA 8.3)

**FERTILIZER - CROP PRICE TRADE-OFF - official prices**  
 expressed as ratio and as index with  
 1990 as 100

		1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
<b>Wheat Soft</b>	urea	0.58	0.64	0.81	0.81	0.75	0.74	0.73	0.75	0.71	0.71
Ratio	TSP	0.61	0.69	0.87	0.87	0.81	0.80	0.79	0.81	0.77	0.77
Index	urea	100	112	141	141	130	129	127	130	124	124
	TSP	100	113	143	143	132	131	129	132	126	126
<b>Wheat Durum</b>	urea	0.52	0.58	0.73	0.73	0.68	0.68	0.68	0.68	0.65	0.65
Ratio	TSP	0.55	0.62	0.79	0.79	0.74	0.73	0.73	0.73	0.70	0.70
Index	urea	100	112	142	142	133	132	132	132	127	127
	TSP	100	113	144	144	135	134	134	134	129	129
<b>Barley</b>	urea	0.89	0.93	1.18	1.18	1.18	1.18	1.10	1.10	1.03	1.03
Ratio	TSP	0.95	0.99	1.28	1.28	1.28	1.28	1.19	1.19	1.11	1.11
Index	urea	100	104	133	133	133	133	123	123	115	115
	TSP	100	105	135	135	135	135	125	125	117	117
<b>Lentil</b>	urea	0.41	0.47	0.55	0.55	0.55	0.43	0.48	0.48	0.48	0.48
Ratio	TSP	0.43	0.51	0.59	0.59	0.59	0.47	0.52	0.52	0.52	0.52
Index	urea	100	116	135	135	135	106	118	118	118	118
	TSP	100	117	137	137	137	108	120	120	120	120
<b>Chickpea</b>	urea	0.37	0.39	0.48	0.48	0.48	0.46	0.43	0.43	0.43	0.43
Ratio	TSP	0.40	0.41	0.52	0.52	0.52	0.49	0.47	0.47	0.47	0.47
Index	urea	100	104	129	129	129	123	116	116	116	116
	TSP	100	105	131	131	131	125	118	118	118	118
<b>Cotton</b>	urea	0.29	0.32	0.42	0.39	0.31	0.28	0.25	0.25	0.25	0.25
Ratio	TSP	0.31	0.34	0.45	0.43	0.34	0.30	0.27	0.27	0.27	0.27
Index	urea	100	112	144	137	109	95	87	87	87	87
	TSP	100	113	147	139	111	97	88	88	88	88
<b>Sugar beet</b>	urea	3.92	3.05	4.05	3.95	3.67	3.42	3.42	3.42	3.42	3.42
Ratio	TSP	4.16	3.26	4.37	4.26	3.95	3.69	3.69	3.69	3.69	3.69
Index	urea	100	78	103	101	94	87	87	87	87	87
	TSP	100	78	105	102	95	89	89	89	89	89

**FERTILIZER - CROP PRICE TRADE-OFF - open market prices**

expressed as ratio and as index with 1990  
as 100

		1990	1991	1992	1993	1994	1995	1996	1997	1998
<b>Wheat Soft</b>	urea	0.53	0.60	0.75	0.78	0.76	0.68	0.70	0.69	0.70
Ratio	TSP	0.56	0.64	0.81	0.84	0.82	0.73	0.75	0.75	0.76
Index	urea	92	104	131	135	132	118	121	120	122
	TSP	92	105	133	137	134	120	123	122	124
<b>Wheat Durum</b>	urea	0.54	0.60	0.72	0.73	0.69	0.63	0.65	0.65	0.68
Ratio	TSP	0.57	0.65	0.78	0.79	0.74	0.68	0.70	0.70	0.73
Index	urea	104	117	140	142	133	122	127	126	131
	TSP	104	118	142	144	135	124	129	128	133
<b>Barley</b>	urea	0.61	0.78	0.94	1.03	1.06	0.99	1.06	0.93	0.94
Ratio	TSP	0.64	0.83	1.01	1.11	1.14	1.07	1.14	1.00	1.02
Index	urea	68	87	105	115	119	112	119	104	106
	TSP	68	88	107	117	121	113	121	106	108
<b>Lentil</b>	urea	0.27	0.29	0.36	0.35	0.33	0.32	0.33	0.29	0.27
Ratio	TSP	0.28	0.31	0.39	0.38	0.36	0.34	0.35	0.32	0.29
Index	urea	66	72	89	86	81	77	80	72	65
	TSP	66	72	90	88	82	78	82	73	66
<b>Chickpea</b>	urea	0.28	0.26	0.32	0.38	0.33	0.24	0.23	0.25	0.31
Ratio	TSP	0.30	0.27	0.34	0.41	0.35	0.25	0.25	0.27	0.33
Index	urea	76	69	85	101	88	63	62	68	83
	TSP	76	69	86	103	89	64	63	69	85

**FERTILIZER SUPPLY DEMAND BALANCE**
**ANNEX 15 (PARA 13.2)**

Source for data: MAAR

	<b>91-92</b>	<b>92-93</b>	<b>93-94</b>	<b>94-95</b>	<b>95-96</b>	<b>96-97</b>	<b>97-98</b>	<b>98-99</b>
Availability - Nutrient tons								
Nitrogen	244728	236280	272346	236000	238000	276712	294500	265817
Phosphate	193345	183195	201673	170000	198000	200077	196200	167100
Potash	17263	13063	12481	14000	16200	15632	13500	10167
Consumption - Nutrient tons								
Nitrogen	192546	204055	229982	217000	236000	227447	236800	218436
Phosphate	137023	139031	138884	128000	128000	124011	117600	105000
Potash	9176	5917	5947	6300	6500	5778	6950	7365
Carry-over - Nutrient tons								
Nitrogen	52182	32225	42364	19000	2000	49265	57700	47381
Phosphate	56322	44164	62789	42000	70000	76066	78600	62100
Potash	8087	7146	6534	7700	9700	9854	6550	2802
Carry-over as % of Consumption								
Nitrogen	27	16	18	9	1	22	24	22
Phosphate	41	32	45	33	55	61	67	59
Potash	88	121	110	122	149	171	94	38

Growth rate and projection of fertilizer demand to 2009. (Nitrogen)N Unit mt. ANNEX 16- 1 (PARA 13.4)

governorate Years	Dannascus		Dara		Al swaita		Alqunatra		Hons		Hamah		Tartous		Latakia		Eileb		Aleppo		
	Observed	Trend	Observed	Trend	Observed	Trend	Observed	Trend	Observed	Trend	Observed	Trend	Observed	Trend	Observed	Trend	Observed	Trend	Observed	Trend	
1992	6453.0	6412.1	4033.0	3991.8	107.0	73.9	283.0	294.3	8387.0	9174.6	19989.0	20930.1	6273.0	6582.5	7321.4	7356.0	17591.0	15425.6	34874.0	35832.4	
1993	5903.5	6399.9	4033.7	4378.2	142.7	101.0	242.5	311.8	9106.0	9068.0	21421.0	21901.8	6485.9	6499.0	7206.9	7215.3	14076.6	15563.6	38833.3	37640.2	
1994	6757.0	6387.6	4932.0	4764.6	92.0	128.2	369.0	329.3	9269.0	8961.4	24497.0	22873.5	6402.0	6415.6	7092.5	7104.0	15268.0	15701.5	42760.0	39448.1	
1995	6179.0	6375.4	4953.0	5151.0	153.0	155.3	469.0	346.8	9013.0	8854.8	23261.0	23845.3	6611.0	6332.1	6608.0	6978.0	15772.0	15839.5	38920.0	41256.0	
1996	6745.0	6363.2	5728.0	5537.4	148.0	182.4	275.0	364.3	9983.0	8748.2	25646.0	24817.0	6410.0	6248.6	7177.0	6608.0	16450.0	15977.4	41419.0	43063.9	
1997	6372.0	6351.0	6360.0	5923.8	147.0	209.5	442.0	381.8	8101.0	8641.6	25979.0	25788.7	6460.0	6165.2	6770.0	6749.1	12717.0	16115.4	43304.0	44871.7	
1998	6782.0	6338.8	6600.0	6310.2	173.0	236.7	355.0	399.3	9026.0	8535.0	27585.0	26760.4	6205.0	6081.7	6782.0	6634.7	17834.0	16253.3	46796.0	46679.6	
1999	5763.0	6326.5	6114.0	6696.6	388.0	263.8	409.0	416.8	7527.0	8428.4	26271.0	27732.2	5476.0	5998.3	6354.0	6520.2	17559.0	16391.3	50301.0	48487.5	
2000		6314.3		7083.0		290.9		434.3		8321.8		28703.9		5914.8		6405.8		16529.2		50295.4	
2001		6302.1		7469.4		318.0		451.8		8215.2		29675.6		5831.3		6291.3		16667.2		52103.2	
2002		6289.9		7855.8		345.2		469.3		8108.6		30647.3		5747.9		6176.9		16805.1		53911.1	
2003		6277.7		8242.2		372.3		486.8		8002.0		31619.1		5664.4		6062.4		16943.1		55719.0	
2004		6265.4		8628.6		399.4		504.3		7895.4		32590.8		5581.0		5948.0		17081.0		57526.9	
2005		6253.2		9015.0		426.5		521.8		7788.8		33562.5		5497.5		5833.5		17219.0		59334.7	
2006		6241.0		9401.4		453.7		539.3		7682.3		34534.3		5414.0		5719.1		17357.0		61142.6	
2007		6228.8		9787.8		480.8		556.7		7575.7		35506.0		5330.6		5604.7		17494.9		62950.5	
2008		6216.6		10174.2		507.9		574.2		7469.1		36477.7		5247.1		5490.2		17632.9		64758.4	
2009		6204.3		10560.6		535.0		591.7		7362.5		37449.4		5163.7		5375.8		17770.8		66566.2	
		SLOP	-12.22024	SLOP	386.39881	SLOP	27.125	SLOP	17.494048	SLOP	-106.5952	SLOP	971.72619	SLOP	-83.45833	SLOP	-114.4464	SLOP	137.95238	SLOP	1807.875
		INTERCEI	6424.30	INTERCEI	3605.42	INTERCEI	46.78	INTERCEI	276.84	INTERCEI	9281.18	INTERCEI	19588.36	INTERCEI	6665.93	INTERCEI	7435.80	INTERCEI	15287.66	INTERCEI	34024.48
		GROWTH	0.00	GROWTH	0.08	GROWTH	0.20	GROWTH	0.05	GROWTH	-0.01	GROWTH	0.04	GROWTH	-0.01	GROWTH	-0.02	GROWTH	0.01	GROWTH	0.04

**Growth rate and projection of fertilizer demand to 2009. (Phosphate) P2O5 Unit m.t ANNEX 16 -2 (PARA 13.4)**

governorate	Damascus		Dar'a		Al swaida		Alqunatra		Homs		Hamah		Tartous		Lattakia	
	Observed	Trend	Observed	Trend	Observed	Trend	Observed	Trend	Observed	Trend	Observed	Trend	Observed	Trend	Observed	Trend
1992	2583.0	2358.5	3632.0	3935.6	68.0	107.8	102.0	138.1	4710.0	4960.6	11400.0	11837.7	3314.0	3086.0	2886.0	2702.2
1993	2013.0	2276.1	4136.0	4014.9	127.0	107.2	111.0	139.4	4807.0	4707.3	11861.0	11903.5	2675.0	3014.9	2277.0	2606.4
1994	2115.0	2193.7	4227.0	4094.3	90.0	106.6	142.0	140.8	4575.0	4454.0	12512.0	11969.4	2785.0	2943.9	2344.0	2510.6
1995	2147.0	2111.3	3864.0	4173.6	161.0	106.0	264.0	142.1	4506.0	4200.7	11614.0	12035.2	2898.0	2872.8	2357.0	2414.8
1996	2126.0	2028.9	4404.0	4252.9	108.0	105.5	92.0	143.4	4029.0	3947.3	12755.0	12101.0	2984.0	2801.7	2651.0	2319.0
1997	1899.0	1946.5	5008.0	4332.3	128.0	104.9	217.0	144.8	3116.0	3694.0	12169.0	12166.9	2897.0	2730.6	2564.0	2223.2
1998	1926.0	1864.1	4580.0	4411.6	74.0	104.3	85.0	146.1	3681.0	3440.7	12557.0	12232.7	2917.0	2659.6	2203.0	2127.4
1999	1752.0	1781.8	3855.0	4490.9	90.0	103.7	129.0	147.4	3168.0	3187.4	11677.0	12298.6	2228.0	2588.5	1653.0	2031.6
2000		1699.4		4570.3		103.1		148.8		2934.1		12364.4				1935.8
2001		1617.0		4649.6		102.5		150.1		2680.8		12430.3				1840.0
2002		1534.6		4728.9		101.9		151.4		2427.5		12496.1				1744.2
2003		1452.2		4808.3		101.3		152.8		2174.2		12562.0				1648.4
2004		1369.8		4887.6		100.7		154.1		1920.9		12627.8				1552.6
2005		1287.4		4966.9		100.1		155.4		1667.6		12693.7				1456.8
2006		1205.0		5046.3		99.5		156.8		1414.3		12759.5				1361.0
2007		1122.6		5125.6		98.9		158.1		1160.9		12825.3				1265.2
2008		1040.2		5204.9		98.3		159.4		907.6		12891.2				1169.4
2009		957.8		5284.3		97.7		160.8		654.3		12957.0				1073.6
	SLOP	-82.39286	SLOP	79.333333	SLOP	-0.595238	SLOP	1.333333	SLOP	-253.3095	SLOP	65.845238	SLOP	-71.07143	SLOP	-95.79762
	INTERCEI	2440.89	INTERCEI	3856.25	INTERCEI	108.43	INTERCEI	136.75	INTERCEI	5213.89	INTERCEI	11771.82	INTERCEI	3157.07	INTERCEI	2797.96
	GROWTH	-0.04	GROWTH	0.02	GROWTH	-0.01	GROWTH	0.01	GROWTH	-0.06	GROWTH	0.01	GROWTH	-0.02	GROWTH	-0.04

**Growth rate and projection of fertilizer demand to 2009. (Potash) K2O Unit m.t. ANNEX 16 - 3 (PARA 13.4)**

governorate	Damascus		Dar'a		Al swaida		Alqunatra		Homs		Hamah		Tartous		Lattakia	
	Observed	Trend	Observed	Trend	Observed	Trend	Observed	Trend	Observed	Trend	Observed	Trend	Observed	Trend	Observed	Trend
1992	398.0	283.0	232.0	180.1	40.0	34.7	2.5	2.9	1079.0	953.8	1206.0	938.9	1564.0	1172.6	1209.0	991.4
1993	227.0	295.8	179.0	209.5	39.0	39.3	8.0	3.9	817.0	898.6	883.0	953.9	845.0	1203.5	743.0	994.3
1994	275.0	308.6	215.0	239.0	32.0	43.9	4.0	4.8	806.0	843.5	811.0	969.0	1106.0	1234.4	849.0	997.2
1995	314.0	321.4	235.0	268.4	52.0	48.5	5.0	5.8	776.0	788.4	951.0	984.0	1343.0	1265.3	989.0	1000.1
1996	294.0	334.1	295.0	297.8	58.0	53.0	6.0	6.8	721.0	733.3	972.0	999.0	1204.0	1296.2	1176.0	1002.9
1997	303.0	346.9	351.0	327.3	63.0	57.6	3.0	7.8	595.0	678.2	789.0	1014.0	1250.0	1327.1	1145.0	1005.8
1998	373.0	359.7	391.0	356.7	46.0	62.2	6.0	8.8	677.0	623.1	1038.0	1029.1	1531.0	1358.0	981.0	1008.7
1999	438.0	372.5	367.0	386.2	76.0	66.8	16.0	9.8	616.0	568.0	1282.0	1044.1	1403.0	1388.9	920.0	1011.6
2000		385.3		415.6		71.4		10.7		512.9		1059.1		1419.8		1014.5
2001		398.1		445.0		76.0		11.7		457.8		1074.1		1450.7		1017.3
2002		410.9		474.5		80.6		12.7		402.7		1089.2		1481.6		1020.2
2003		423.6		503.9		85.2		13.7		347.6		1104.2		1512.5		1023.1
2004		436.4		533.4		89.8		14.7		292.5		1119.2		1543.4		1026.0
2005		449.2		562.8		94.4		15.6		237.4		1134.2		1574.3		1028.9
2006		462.0		592.3		99.0		16.6		182.3		1149.3		1605.3		1031.8
2007		474.8		621.7		103.6		17.6		127.1		1164.3		1636.2		1034.6
2008		487.6		651.1		108.2		18.6		72.0		1179.3		1667.1		1037.5
2009		500.4		680.6		112.8		19.6		16.9		1194.3		1698.0		1040.4
	SLOP	12.79	SLOP	29.44	SLOP	4.60	SLOP	0.98	SLOP	-55.11	SLOP	15.02	SLOP	30.90	SLOP	2.88
	INTERCEI	270.21	INTERCEI	150.64	INTERCEI	30.07	INTERCEI	1.89	INTERCEI	1008.86	INTERCEI	923.89	INTERCEI	1141.68	INTERCEI	988.54
	GROWTH	4.0%	GROWTH	12%	GROWTH	10%	GROWTH	19%	GROWTH	-7%	GROWTH	2%	GROWTH	2%	GROWTH	0%

**FERTILIZER DEMAND PROJECTION AND  
ASSESSMENT OF SUPPLY-DEMAND BALANCE**

**ANNEX 17 -1 (PARA 13.5)**

Fertilizer Consumption in Nutrients -  
tons

Year	N	P	K	Total	
1995	217603	128393	6397	352393	
1996	236295	128638	6549	371482	
1997	227447	124011	5778	357236	
1998	236815	117597	6951	361363	
1999	218436	105068	7360	330864	
Average	227319	120741	6607	354668	
Source: Agricultural Statistics 1999 Table 124					
<b>Basic Data</b>					
1	Base Consumption	227319	120741	6607	354668
	5 year Average 1995-1999	N	P	K	NPK
2	Population Annual Growth 1995-2000			2.54	percent
3	GDP Annual Growth rate assumed as in Explanatory Note on 8th V Year Plan - State Planning Commission January 1997			6.1	percent
4	Contribution of Crop segments to Production and their Expenditure Elasticity	Contribution to prodn	Ratio	Elasticity	
	Cereals	17	0.33	0.23	
	Industrial crops*	13	0.25	0.65	
	Fruits	14	0.27	0.65	
	Vegetables	6	0.12	0.56	
	Legumes	2	0.04	0.42	
	Livestock**	32	0.00	-	
	Others**	16	0.00	-	
		100	1.00		
	Note: 1. Contribution to production from P 59 of Country Profile				
	2. Expenditure Elasticity adopted from: Impact of GATT - Paper by Nouredin H. Mona, University of Aleppo/ICARDA, March 1996				
	*Elasticity is assumed to be the same as fruits				
	** No impact on fertilizer consumption assumed				

**Basis for calculating Annual  
Growth in Fertilizer Consumption**

**ANNEX 17 -2**

	in percentages				
1	Growth Rate of Population	2.54			
2	GDP Growth	6.10			
3	Per capita Income growth 2 minus 1	3.56			
4	Growth in cereals	0.27			
	per capita income growth x cereal elasticity x cereal ratio of contrbn to prodn				
5	Growth in industrial crops & fruits	1.20			
	per capita income growth x indl, fruit elasticity x indl, fruit ratio of contrbn to prodn				
6	Growth in vegetables	0.23			
	per capita income growth x vegetables elasticity x vegetables ratio of contrbn to prodn				
7	Growth in legumes	0.06			
	per capita income growth x legumes elasticity x legumes ratio of contrbn to prodn				
8	Combined Growth Rate- 1 plus (4 to 7)	4.30			
9	Combined Growth Rate reduced to 0.6 as allowance for effect of non-fertilizer factors and for increased productivity of fertilizers on production	2.58			

**FERTILIZER DEMAND PROJECTION**  
in nutrients - tons

**ANNEX 17 - 3**

	N	P	K	Total	Growth Trend Method		
					N	P	K
Base 5 Year Average	227319	120741	6607	354668			
2000	233184	123857	6777	363818	239601	107199	6336
2001	239200	127052	6952	373205	243882	102728	6242
2002	245372	130330	7132	382833	248163	98256	6148
2003	251702	133692	7316	392710	252444	93785	6054
2004	258196	137142	7504	402842	256726	89313	5960
2005	264858	140680	7698	413236	261007	84842	5866
2006	271691	144310	7897	423897	265288	80370	5772
2007	278700	148033	8100	434834	269569	75899	5678
2008	285891	151852	8309	446052	273851	71427	5583
2009	293267	155770	8524	457560	278132	66956	5489
2010	300833	159789	8744	469365			

**BROKEN INTO DOMESTIC PRODUCTION AND LIKELY IMPORT REQUIREMENTS - SCENARIO A ANNEX 17 - 4**

material in tons

Assuming domestic production remaining stagnant at 2000 plan level equivalent to 56000\*0.3 of N (16800) plus 77000\*.46 of N (35420) and 150000\*.46 of P (69000)

Year	Homs Production				Imports			
	Amm Nitrate	Urea	TSP	Total	Urea	TSP	Sul. Of Potash	Total
2001	56000	77000	150000	283000	406522	126200	14484	547206
2002	56000	77000	150000	283000	419938	133326	14858	568122
2003	56000	77000	150000	283000	433700	140636	15241	589577
2004	56000	77000	150000	283000	447817	148134	15634	611586
2005	56000	77000	150000	283000	462299	155826	16038	634163
2006	56000	77000	150000	283000	477154	163716	16451	657322
2007	56000	77000	150000	283000	492392	171810	16876	681078
2008	56000	77000	150000	283000	508024	180113	17311	705448
2009	56000	77000	150000	283000	524059	188630	17758	730446
2010	56000	77000	150000	283000	540507	197367	18216	756090

Import as % of total consumption in the last column

**PROJECTIONS TRANSLATED TO FERTILIZER TYPES -**

**ANNEX 17 - 4**

**BROKEN INTO DOMESTIC PRODUCTION AND LIKELY IMPORT REQUIREMENTS - SCENARIO A**

material in tons  
 Assuming domestic production remaining stagnant at 2000 plan level equivalent to 56000\*0.3 of N (16800)  
 plus 77000\*.46 of N (35420) and 150000\*.46 of P (69000)

Year	Homs Production				Imports				Total Consumption					
	Amm Nitrate	Urea	TSP	Total	Urea	TSP	Sul. Of Potash	Total	Amm Nitrate	Urea	TSP	Sul Potash	Total	Import%
2001	56000	77000	150000	283000	406522	126200	14484	547206	56000	483522	276200	14484	830206	66
2002	56000	77000	150000	283000	419938	133326	14858	568122	56000	496938	283326	14858	851122	67
2003	56000	77000	150000	283000	433700	140636	15241	589577	56000	510700	290636	15241	872577	68
2004	56000	77000	150000	283000	447817	148134	15634	611586	56000	524817	298134	15634	894586	68
2005	56000	77000	150000	283000	462299	155826	16038	634163	56000	539299	305826	16038	917163	69
2006	56000	77000	150000	283000	477154	163716	16451	657322	56000	554154	313716	16451	940322	70
2007	56000	77000	150000	283000	492392	171810	16876	681078	56000	569392	321810	16876	964078	71
2008	56000	77000	150000	283000	508024	180113	17311	705448	56000	585024	330113	17311	988448	71
2009	56000	77000	150000	283000	524059	188630	17758	730446	56000	601059	338630	17758	1013446	72
2010	56000	77000	150000	283000	540507	197367	18216	756090	56000	617507	347367	18216	1039090	73

Import as % of total consumption in the last column

**PROJECTIONS TRANSLATED TO FERTILIZER TYPES -  
BROKEN INTO DOMESTIC PRODUCTION AND LIKELY IMPORT REQUIREMENTS - SCENARIO B ANNEX 17 - 5**

material in tons

Assuming domestic production remaining at 2000 plan level for first 3 years equivalent to 56000\*0.3 of N (16800) plus 77000\*0.46 of N (35420) and 150000\*0.46 of P (69000) and increasing to 90% of installed capacity thereafter equivalent to 108000\*0.3 of N as amm. Nitrate (32400), 297000\*0.46 of N as urea (136620) and 405000\*0.46 of P as TSP (186300)

Year	Homs Production				Imports				Total Consumption					
	Amm Nitrate	Urea	TSP	Total	Urea	TSP	Sul. Of Potash	Total	Amm Nitrate	Urea	TSP	Sul Potash	Total	Import%
2001	56000	77000	150000	283000	406522	126200	14484	547206	56000	483522	276200	14484	830206	66
2002	56000	77000	150000	283000	419938	133326	14858	568122	56000	496938	283326	14858	851122	67
2003	56000	77000	150000	283000	433700	140636	15241	589577	56000	510700	290636	15241	872577	68
2004	108000	297000	298134	703134	152566	0	15634	168200	108000	449566	298134	15634	871334	19
2005	108000	297000	305826	710826	165982	0	16038	182019	108000	462982	305826	16038	892845	20
2006	108000	297000	313716	718716	179744	0	16451	196195	108000	476744	313716	16451	914912	21
2007	108000	297000	321810	726810	193861	0	16876	210737	108000	490861	321810	16876	937547	22
2008	108000	297000	330113	735113	208342	0	17311	225654	108000	505342	330113	17311	960767	23
2009	108000	297000	338630	743630	223197	0	17758	240955	108000	520197	338630	17758	984585	24
2010	108000	297000	347367	752367	238436	0	18216	256652	108000	535436	347367	18216	1009018	25

There will be surplus TSP if 90% of production capacity is reached.

**SAVING IN FOREIGN EXCHANGE PRODUCING AT 90% OF INSTALLED CAPACITY ANNEX 17 - 6**

Year	Imports if Homs prodn is at 2000 Plan level		Imports if Homs prodn is at 90% of capacity		Reduced Imports - tons		Saving in Foreign Exchange mill US\$*		
	Urea	TSP	Urea	TSP	Urea	TSP	Urea	TSP	Total
2001	406522	126200	406522	126200	0	0	0.00	0.00	0.00
2002	419938	133326	419938	133326	0	0	0.00	0.00	0.00
2003	433700	140636	433700	140636	0	0	0.00	0.00	0.00
2004	447817	148134	152566	0	295251	148134	33.91	26.60	60.52
2005	462299	155826	165982	0	296317	155826	34.04	27.99	62.02
2006	477154	163716	179744	0	297410	163716	34.16	29.40	63.56
2007	492392	171810	193861	0	298531	171810	34.29	30.86	65.14
2008	508024	180113	208342	0	299682	180113	34.42	32.35	66.77
2009	524059	188630	223197	0	300862	188630	34.56	33.88	68.43
2010	540507	197367	238436	0	302071	197367	34.70	35.45	70.14

To calculate foreign exchange saving following 3 year average of CIF \$ prices obtained from the Homs unit are taken

Urea	SP	5341	US\$	115
TSP	SP	8351	US\$	180

**PRICE ANALYSIS - INTERNATIONAL PRICES - UREA**

**ANNEX 18 - 1 (PARA 13.7)**

Source: International Fertilizer Industry Association  
fob bulk US\$/mt

mid-value taken from price range for each month  
East Europe and Middle East markets taken for comparison these being the nearest sources of tradable surplus

East Europe	January	February	March	April	May	June	July	August	September	October	November	December	Averages	Fluctuation Index
1984	118.50	122.50	130.00	137.50	137.50	155.00	157.50	160.00	162.50	167.00	168.00	169.50	148.79	<b>1.24</b>
1985	166.50	165.00	137.50	135.00	124.00	113.50	103.50	92.50	84.00	87.00	86.00	85.00	114.96	<b>0.96</b>
1986	84.00	83.00	79.00	74.00	72.50	70.00	68.50	69.00	68.50	65.50	65.50	66.00	72.13	<b>0.60</b>
1987	65.50	73.50	74.50	84.00	85.00	85.00	86.00	87.50	90.00	87.50	92.50	92.50	83.63	<b>0.70</b>
1988	-	-	102.50	112.50	119.00	120.00	127.50	127.50	127.50	127.50	122.50	125.00	121.15	<b>1.01</b>
1989	122.50	120.00	119.00	118.00	113.00	104.00	91.50	80.00	72.50	75.00	78.50	80.00	97.83	<b>0.82</b>
1990	85.00	100.00	107.50	106.50	102.50	102.50	105.00	112.50	130.00	137.50	150.00	150.00	115.75	<b>0.97</b>
1991	148.50	153.50	153.50	145.00	140.00	140.00	132.50	135.00	137.50	138.50	130.00	123.50	139.79	<b>1.17</b>
1992	121.50	118.00	116.00	115.50	116.50	118.50	121.50	122.50	117.50	107.00	104.50	99.00	114.83	<b>0.96</b>
1993	94.00	89.50	83.00	80.00	81.50	81.00	77.50	75.00	76.00	79.50	86.50	94.00	83.13	<b>0.70</b>
1994	96.50	97.50	100.00	106.00	111.50	115.00	117.00	120.00	128.50	145.50	157.50	177.50	122.71	<b>1.03</b>
1995	180.50	197.50	208.50	-	176.50	163.50	165.00	172.50	184.00	198.50	214.00	197.50	187.09	<b>1.56</b>
1996	189.00	198.00	195.50	169.50	164.00	181.00	185.50	182.50	169.50	174.00	177.00	165.00	179.21	<b>1.50</b>
1997	161.00	144.00	142.00	132.50	122.50	116.00	105.50	102.00	92.50	102.50	107.50	107.50	119.63	<b>1.00</b>
1998	87.50	87.50	107.50	107.50	107.50	107.50	107.50	107.50	86.00	82.50	72.50	-	96.45	<b>0.81</b>
Average	122.89	124.96	123.73	115.96	118.23	118.17	116.77	116.40	115.10	118.33	120.83	123.71	<b>119.59</b>	<b>1.00</b>
<b>Seasonal Index</b>	<b>1.03</b>	<b>1.04</b>	<b>1.03</b>	<b>0.97</b>	<b>0.99</b>	<b>0.99</b>	<b>0.98</b>	<b>0.97</b>	<b>0.96</b>	<b>0.99</b>	<b>1.01</b>	<b>1.03</b>	<b>1.00</b>	
											Last 3 year	average	131.76	

**Middle East**

1984	127.50	145.00	150.00	150.00	149.00	166.00	172.50	172.00	174.00	176.00	174.50	176.50	161.08	<b>1.23</b>
1985	177.00	176.00	164.50	147.50	125.00	123.50	109.00	97.50	91.00	91.00	90.00	88.00	123.33	<b>0.94</b>
1986	86.00	86.00	84.00	84.00	69.00	72.50	72.50	69.50	70.50	72.50	71.00	70.50	75.67	<b>0.58</b>
1987	73.00	81.00	85.00	94.00	92.50	99.00	101.50	95.00	92.50	100.50	102.50	99.50	93.00	<b>0.71</b>
1988	-	-	112.50	120.00	127.50	128.00	135.00	136.50	136.50	135.00	135.00	132.50	129.85	<b>0.99</b>
1989	132.50	130.00	130.00	132.00	127.50	112.50	105.00	80.00	72.50	80.00	87.50	92.50	106.83	<b>0.82</b>
1990	102.50	115.00	120.00	120.00	120.00	122.50	122.50	125.00	150.50	150.50	162.50	157.50	130.71	<b>1.00</b>
1991	157.50	170.00	170.00	165.00	155.00	150.00	147.50	147.50	147.00	146.00	146.00	145.50	153.92	<b>1.17</b>
1992	145.50	136.50	131.50	131.00	136.50	140.50	146.50	146.50	142.50	127.00	124.50	116.00	135.38	<b>1.03</b>
1993	116.00	116.00	102.00	100.00	96.00	103.00	100.50	98.50	93.50	96.00	102.00	110.00	102.79	<b>0.78</b>
1994	110.00	113.50	113.50	114.50	121.00	126.50	131.50	141.50	150.50	167.00	174.50	199.50	138.63	<b>1.06</b>
1995	201.00	222.50	229.00	-	187.50	190.00	192.50	197.50	215.00	227.50	230.50	229.00	211.09	<b>1.61</b>
1996	206.50	207.50	212.50	192.00	190.00	197.50	199.50	197.50	192.50	183.00	183.50	-	196.55	<b>1.50</b>
1997	175.50	161.50	158.00	146.50	135.50	129.50	128.00	109.00	96.00	104.00	101.00	101.00	128.79	<b>0.98</b>
1998	86.50	82.00	101.00	111.50	103.00	90.50	92.00	94.50	90.00	81.00	75.00	72.50	89.96	<b>0.69</b>
Average	135.50	138.75	137.57	129.14	129.00	130.10	130.40	127.20	127.63	129.13	130.67	127.89	<b>131.08</b>	<b>1.00</b>
<b>Seasonal Index</b>	<b>1.03</b>	<b>1.06</b>	<b>1.05</b>	<b>0.99</b>	<b>0.98</b>	<b>0.99</b>	<b>0.99</b>	<b>0.97</b>	<b>0.97</b>	<b>0.99</b>	<b>1.00</b>	<b>0.98</b>	<b>1.00</b>	
											Last 3 year	average	138.43	

**AMMONIA, PHOSPHORIC ACID AND DAP - INTERNATIONAL PRICES**

**ANNEX 18 - 2**

Source: International Fertilizer Industry Association

fob US\$/mt

mid-values of annual average price ranges are taken

Year	Ammonia		Phosphoric Acid		DAP	
	Middle East	US Gulf	N Africa	US Gulf	N Africa	N Africa
1989	60.50	355.00	372.50	172.50		202.50
1990	94.00	280.00	335.00	165.50		191.00
1991	101.50	268.50	315.00	168.50		192.50
1992	92.50	255.00	285.00	149.00		170.50
1993	107.50	229.50	267.50	135.00		145.00
1994	167.50	255.00	295.00	174.50		186.00
1995	186.00	292.50	340.00	219.00		234.00
1996	190.00	317.50	350.00	199.50		232.50
1997	167.50	332.50	355.00	198.50		209.00
1998	131.50	340.00	367.50	201.00		207.50
1999	98.50	337.50	355.00	177.50		200.00
<b>Average</b>	<b>127.00</b>	<b>296.64</b>	<b>330.68</b>	<b>178.23</b>		<b>197.32</b>
Last 3 year's average	<b>132.50</b>			Last 3 yrs average		<b>205.50</b>
Middle East Ammonia				N Africa DAP		

## COMPARABLE BORDER PRICES

US\$/MT

## ANNEX 18 - 3

Base fob prices derived from the Price Trend Analysis (see previous statements)

Product	Basis adopted	FOB US\$/mt	Ocean Freight US\$/mt	C&F at Sp 46.50	Clearance charges p/t*	Clearance Charges as % of value**	Total Clearance Charges	Total landed Cost SP/mt
Urea	East Europe							
	Last 3 years' average	131.76	20.00	7057	140	332	472	7529
Ammonium Nitrate	Urea price pro-rated for 30.3% Nitrogen	86.79	20.00	4966	140	233	373	5339
TSP - see note	DAP N Africa 3-yr average (205.50) minus ammonia Middle East 3-yr average (132.50) at 0.221 per ton of DAP to remove the N part of							
	DAP	176.22	20.00	9124	140	429	569	9693
						Less Sp 1000	see footnote 3	8693

Note: 1. \* Handling SP 55, clearance cost SP 12, supervision and shipping agent SP 67.85 - all per ton - totalling 134.85 or, say 135. In addition stamp/document fee of SP 250, license extension fee SP 124, judicial fee of SP 1500, radiation check fee of SP 1000 and chemical analysis fee of SP 1000

are incurred for each consignment. Assuming each order of 10000 tons is delivered in 3 lots of 3333 tons these charges a translate to a per ton incidence of

SP 1 per ton (3874/3333). The total of 135 plus 1 is rounded to 140 per ton

2.\*\* Insurance of 2% plus finance charges of 1.2% plus GEZA commission of 1% plus 0.5% toward provision for shortages/damages = 4.7% on C&F

The source for above charges is the GEZA Accounts section as per cost format provided by them

3. TSP price - usually 20\$ below the rate arrived at by eliminating value of ammonia from DAP. On this basis the SP Border price will be less by about SP 1000 per ton (20\*46.50=930 plus 4.5%= 971.85 or say 1000) i.e. 9693 minus 1000 = 8693

## ANALYSIS OF DISTRIBUTION and CREDIT COSTS - INPUTS

## ANNEX 19 (PARA 9.9)

Based on English translations of ACB Annual Accounts and Balance Sheets in arabic  
Notes:

1. For convenience all inputs sold by ACB are reckoned in terms of fertilizers
2. Figures suitably rounded off
3. Units are SP million unless otherwise stated and values shown in italics for latter
4. Source references are to ACB Accounts for 1999 unless stated otherwise

No.	Item	Value	Source
<b>ACB's Input Distribution Activity</b>			
1	Capital employed on Inputs - stocks	1006	from Balance Sheet
2	Capital employed on Inputs - debtors	0	
3	40% of common capital of 9406 SP million	3762	from Balance sheet - common and direct items are separated for this allocation
			7040 of input sale and 10222 of advances constitute a ratio of 40:60 on input:banking
4	<b>Total capital employed on Inputs (1 to 3)</b>	<b>4768</b>	
5	Input marketing exps	662	column 3 of Bank's Expenditure, exclusive of procurement
6	Profit on Inputs	249	revenue minus exp under column 3 of expenditure
7	Sales Value	7040	under Revenue - Commercial activity
8	Weighted Average price of fertilizer - SP per ton	6662	weighted average price per ton for NPK
9	<b>Sales Volume of all inputs in terms of fertilizer - tons</b>	<b>1,056,000</b>	dividing sale value by weighted average price
<b>ACB's Loan Activity</b>			
10	Capital employed on banking activity - direct items	22598	from Balance Sheet
11	60% of common capital of 9406 SP million	5644	see item 3 above - same basis but allocating 60% of common capital
12	<b>Total capital employed on banking (10 plus 11)</b>	<b>28242</b>	
13	Expenses on banking activity	1211	from expenditure statement (total expenses of 1634 minus interest incurred of 433)
14	Interest incurred	433	from expenditure statement
15	Profit on banking activity	-142	from expenditure and revenue statements
16	<b>Total advances 1999</b>	<b>10222</b>	statement obtained from ACB Aleppo as this info is not clear from Balance Sheet
17	Cultivated area million ha	4.541	Agricultural Statistics 1999 Table 3

<b>B - ANALYSIS - INPUT DISTRIBUTION</b>			
<b>No</b>	<b>Item</b>	<b>Value</b>	<b>Explanation and Comments</b>
1	Capital Employed expressed as months of sales	8	A4 divided by A7 multiplied by 12 (months) - the capital employed is high assuming a sale period of 4 months and regular monthly buying over all 12 months
			working capital on stocks should not exceed 6 months' stock - see inventory model
2	Return needed on present efficiency of capital management	715	15% of A4 - 15% assumed as fair return on capital
3	Return needed on capital of 6 months instead of 8 months' sale value	528	half of annual sale value in A7 and 15% thereon
4	Expense to sales - percentage	9	A13 divided by A15
5	Percentage on normative efficiency	5	Generally distribution costs are 5% of sale value
6	Saving if exps are 5% of sales	310	Present expenses in A5 minus distn exps at 5% of sales value in A7
7	Net optimum return needed after adjusting expense savings 3 minus 6	218	
8	Cost of sub-optimal efficiency 2 minus 7	497	
9	Actual return	249	as in A6
10	Actual return minus return needed at optimal efficiency - 9 minus 7 - which represents over recovery from farmer ie implicit tax	31	transfer from farmer to fertilizer producer to meet sub-optimal efficiency cost
11	Balance cost of sub-optimal efficiency met by taxpayer 8 minus 10 which represents implicit subsidy to fertilizer producer	466	transfer from taxpayer to fertilizer producer
12	Implicit tax on farmer SP per ton	29	
13	Implicit subsidy from taxpayer to producer SP per ton	441	

<b>C - ANALYSIS - AGRICULTURAL CREDIT</b>			
<b>No</b>	<b>Item</b>	<b>Value</b>	<b>Explanation and Comments</b>
1	Capital Employed expressed as months of loan advances	33	A12 divided by A16 multiplied by 12 months - the capital employed is very high
2	Return needed on present efficiency of capital management	2824	see model showing adequacy of 24 months on a liberal basis 10% of A12 - 10% being assumed as return on capital currently employed
3	Return needed on capital of 24 instead of 33 months' loan value	2044	10% of normative capital equal to annual loan of 10222 / 12 x 22
4	Expense to loan advances value - percentage	5.92	A13 divided by A16 - due weight given to MT and LT loans from which interest flows over longer period
5	Percentage of transaction cost assumed	2	To lend at 5-6% and spend nly 6% of loan value is very high. 2% has been assumed
6	Saving if transaction cost is 2% of loan value	1007	Present expenses in A13 minus 2% of advances as in A16
7	Net optimum return 3 minus 6	1038	
8	Cost of sub-optimal efficiency 2 minus 6	1786	
9	Actual return	-142	as in A15
10	Actual return versus return needed at optimal efficiency - deficiency in 9 plus 7 represents subsidy to farmer	1180	transfer from taxpayer to farmer
11	Cost of sub-optimal efficiency met by tax-payer - item 8 - which represents implicit subsidy to lending bank	1786	transfer from taxpayer to bank
12	Implicit subsidy to farmer (exclusive of low interest rate) - SP per ton	1117	
13	Implicit subsidy from taxpayer to bank SP per ton	1692	

**ANALYSIS OF PRODUCTION COSTS - FERTILIZERS****ANNEX 20 - 1 (PARAS 7.12, 14.6 AND 18.3)**

Based on english translations of GECM's cost and accounts summaries in arabic - information not fully made available supplemented by expert judgements/estimates from contacts in Indian industry

<b>A - Basic Data</b>	<b>Amm. Nitrate</b>	<b>Urea</b>	<b>TSP</b>
1	623	795	1564
2	1000	1000	1000
3	1623	1795	2564
4	101000	160000	144000
5			
	163.923	287.200	369.216
6	306.931	519.680	964.795
7	3039	3248	6700
8	120000	330000	450000
9	108000	297000	405000
10	56000	77000	150000
11	5165	6365	7425
12	5400	7700	8200

**B - Production Costs and Prices**

		<b>Amm. Nitrate</b>	<b>Urea</b>	<b>TSP</b>
<b>1</b>	<b>At Expected production for 2000</b>			
	a: Fixed Cost per ton SP			
	A5 divided by A10	2927	3730	2461
	b: Variable Cost per ton - SP - as in A7	3039	3248	6700
	c: Total cost - private	5966	6978	9161
	d: add back subsidized portion of gas price for AN and urea and rock price for TSP (see calculations)	497	1373	445
	e: Total cost - social	6463	8351	9606
<b>2</b>	<b>At 90% of Production capacity</b>			
	a: Fixed Cost per ton SP			
	A5 divided by A9	1518	967	912
	b: Variable Cost per ton - SP - as in A7	3039	3248	6700
	c: Total cost - private	4557	4215	7612
	d: add back subsidized portion of gas price for AN and urea and rock price for TSP (see calculations)	497	1373	445
	e: Total cost - social	5054	5588	8057
<b>3</b>	<b>Border Price</b>			
	Average of 3 years' CIF prices			
	- source: Homs Unit			
	1997-98	4836	6417	8804
	1998-99	4273	5538	8649
	1999-00	3115	6231	7600
	Average of 3 years' CIF prices	4075	6062	8351
	Add 3.5% for insurance, finance charges and landing expenses of app 275 SP			
	per ton (see calculations of landed costs) to arrive at landed cost	4492	6549	8918
<b>4</b>	<b>Current ACB Sale price ex-warehouse reduced to obtain equivalent of landed cost of import</b>			
	minus transport at SP 1.01 per ton/km for 300 km	5400	7700	8200
		303	303	303
		5097	7397	7897
	Net of 10% as distribution margin till warehouse ie. 0.90	4587	6657	7107
<b>C</b>	<b>Deficits/Supluses per ton under</b>			

	<b>different scenarios</b>			
1	<b>Subsidy SP/t on current farmer compared to World Price 4 minus 3</b>	95	108	-1811
	positive values indicate negative subsidy			
2	<b>Cost of low production efficiency, selling at world prices</b>			
	Cost per ton SP at current Production Level	6463	8351	9606
	World Price	4492	6549	8918
	Deficit/surplus	-1971	-1802	-688
3	<b>Position if 90% of capacity is produced, selling at world prices</b>			
	Cost per ton SP at 90%	5054	5588	8057
	World Price	4492	6549	8918
	Deficit/surplus	-561	961	862
4	<b>Selling at current farmer price and producing at current level</b>			
	Cost	6463	8351	9606
	Current Sellin Price	4587	6657	7107
	Deficit/surplus	-1876	-1694	-2499
5	<b>Selling at current farmer price and at 90% production efficiency</b>			
	Cost	5054	5588	8057
	Current selling price	4587	6657	7107
	Deficit/surplus	-466	1069	-949

Determination of border prices of local raw materials

ANNEX 20 - 2

<b>Phosphate Rock</b>			
A	Price charged to Homs	565	SP/ton delivered
B	Export Price minimum	21	\$ - source GE for Mineral resources
C	Equivalent SP	976.5	SP/ton
D	Less Incremental transport	10	SP/ton
E	Less charges for FOB	140	SP/ton - based on fertilizer import costs
F	Net export realization	826.5	SP/ton
G	Rounded to	827	SP/ton
H	Subsidy element in price charged to Homs	262	SP/ton - G minus A
I	No of tons of rock rquired to		
J	Subsidy element in rock price per ton of TSP		SP per ton of TSP (I x H)
<b>Natural Gas</b>			
A	Price charged to Homs	1	SP per cum - source Homs unit
B	International Price	2.5	\$ per mmbtu (US prior to oil price rise)
C	Equivalent SP	116.25	SP per mmbtu equivalent to 31 cum or 252,000 kcal or 1 cum = app 8129 kcal
D	Equivalent SP per cum	3.75	SP/cum or for 8129 kcal (C divided by 31)
E	Subsidy element in price charged to Homs	2.75	SP per cum
F	No. of cum required per ton of ammonia	861	Arrived at by dividing 7 million kcal by 8129 kcal per cum - 7 million kcal of gas is needed to make 1 ton of ammonia
G	Ammonia required to make one ton of Ammonium Nitrate	0.21	tons - source Int Fert Industry Assn Tech Report
H	Ammonia required to make one ton of urea	0.58	tons - source Homs
I	Subsidy element in gas price per ton of Amm Nitrate	497	SP per ton of Amm Nitrate (G x F x E)
J	Subsidy element in gas price per ton urea	1373	SP per ton of urea (H x F x E)

Sulphur another raw material, is imported at international prices

Technical data from IFIA Technical Report No. 26 Part 1.

Gas is sold uniformly at SP one per cum to all users. It has been priced at the international price prior to the oil increase to test competitiveness.

**CROP AND FERTILIZER PRICES AND RATIOS 1990 -1999**
**Annex 22-2**

prices per SP/kg

		90	91	from 92							
Ammonium Nitrate price		3.4	4	5.4							
Urea price		4.9	5.8	7.7							
TSP price		5.2	6.2	8.3							
S/K price		7.7	9	12.1							
		1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
Wheat Soft Price		8.50	9.00	9.50	9.50	10.25	10.35	10.50	10.30	10.80	10.80
No of kg of crop required to buy 1 kg of fertilizer	nitrat	0.40	0.44	0.57	0.57	0.53	0.52	0.51	0.52	0.50	0.50
	urea	0.58	0.64	0.81	0.81	0.75	0.74	0.73	0.75	0.71	0.71
	TSP	0.61	0.69	0.87	0.87	0.81	0.80	0.79	0.81	0.77	0.77
	S/K	0.91	1.00	1.27	1.27	1.18	1.17	1.15	1.17	1.12	1.12
Wheat Durum Price		9.50	10.00	10.50	10.50	11.25	11.35	11.30	11.30	11.80	11.80
No of kg of crop required to buy 1 kg of fertilizer	nitrat	0.36	0.40	0.51	0.51	0.48	0.48	0.48	0.48	0.46	0.46
	urea	0.52	0.58	0.73	0.73	0.68	0.68	0.68	0.68	0.65	0.65
	TSP	0.55	0.62	0.79	0.79	0.74	0.73	0.73	0.73	0.70	0.70
	S/K	0.81	0.90	1.15	1.15	1.08	1.07	1.07	1.07	1.03	1.03
Barley Price		5.50	6.25	6.50	6.50	6.50	6.50	7.00	7.00	7.50	7.50
No of kg of crop required to buy 1 kg of fertilizer	nitrat	0.62	0.64	0.83	0.83	0.83	0.83	0.77	0.77	0.72	0.72
	urea	0.89	0.93	1.18	1.18	1.18	1.18	1.10	1.10	1.03	1.03
	TSP	0.95	0.99	1.28	1.28	1.28	1.28	1.19	1.19	1.11	1.11
	S/K	1.40	1.44	1.86	1.86	1.86	1.86	1.73	1.73	1.61	1.61
Lentil Price		12.00	12.25	14.00	14.00	14.00	17.80	16.00	16.00	16.00	16.00
No of kg of crop required to buy 1 kg of fertilizer	nitrat	0.28	0.33	0.39	0.39	0.39	0.30	0.34	0.34	0.34	0.34
	urea	0.41	0.47	0.55	0.55	0.55	0.43	0.48	0.48	0.48	0.48
	TSP	0.43	0.51	0.59	0.59	0.59	0.47	0.52	0.52	0.52	0.52
	S/K	0.64	0.73	0.86	0.86	0.86	0.68	0.76	0.76	0.76	0.76
Chickpea Price		13.15	15.00	16.00	16.00	16.00	16.80	17.80	17.80	17.80	17.80
No of kg of crop required to buy 1 kg of fertilizer	nitrat	0.26	0.27	0.34	0.34	0.34	0.32	0.30	0.30	0.30	0.30
	urea	0.37	0.39	0.48	0.48	0.48	0.46	0.43	0.43	0.43	0.43
	TSP	0.40	0.41	0.52	0.52	0.52	0.49	0.47	0.47	0.47	0.47
	S/K	0.59	0.60	0.76	0.76	0.76	0.72	0.68	0.68	0.68	0.68
Cotton Price		17.00	18.00	18.50	19.50	24.50	28.00	30.75	30.75	30.75	30.75
No of kg of crop required to buy 1 kg of fertilizer	nitrat	0.20	0.22	0.29	0.28	0.22	0.19	0.18	0.18	0.18	0.18
	urea	0.29	0.32	0.42	0.39	0.31	0.28	0.25	0.25	0.25	0.25
	TSP	0.31	0.34	0.45	0.43	0.34	0.30	0.27	0.27	0.27	0.27
	S/K	0.45	0.50	0.65	0.62	0.49	0.43	0.39	0.39	0.39	0.39
Sugarbeet Price		1.25	1.90	1.90	1.95	2.10	2.25	2.25	2.25	2.25	2.25
No of kg of crop required to buy 1 kg of fertilizer	nitrat	2.72	2.11	2.84	2.77	2.57	2.40	2.40	2.40	2.40	2.40
	urea	3.92	3.05	4.05	3.95	3.67	3.42	3.42	3.42	3.42	3.42
	TSP	4.16	3.26	4.37	4.26	3.95	3.69	3.69	3.69	3.69	3.69
	S/K	6.16	4.74	6.37	6.21	5.76	5.38	5.38	5.38	5.38	5.38

open market prices for crops as basis

90 91 from 92

Ammonium Nitrate price		3.4	4	5.4
Urea price		4.9	5.8	7.7
TSP price		5.2	6.2	8.3
S/K price		7.7	9	12.1

		1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
Wheat Soft Price		9.24	9.65	10.20	9.88	10.10	11.30	11.00	11.10	10.93	na
No of kg of crop required to buy 1 kg of fertilizer	nitrat	0.37	0.41	0.53	0.55	0.53	0.48	0.49	0.49	0.49	
	urea	0.53	0.60	0.75	0.78	0.76	0.68	0.70	0.69	0.70	
	TSP	0.56	0.64	0.81	0.84	0.82	0.73	0.75	0.75	0.76	
	S/K	0.83	0.93	1.19	1.22	1.20	1.07	1.10	1.09	1.11	
Wheat Durum Price		9.15	9.61	10.70	10.55	11.20	12.20	11.80	11.89	11.37	na
No of kg of crop required to buy 1 kg of fertilizer	nitrat	0.37	0.42	0.50	0.51	0.48	0.44	0.46	0.45	0.47	
	urea	0.54	0.60	0.72	0.73	0.69	0.63	0.65	0.65	0.68	
	TSP	0.57	0.65	0.78	0.79	0.74	0.68	0.70	0.70	0.73	
	S/K	0.84	0.94	1.13	1.15	1.08	0.99	1.03	1.02	1.06	
Barley Price		8.08	7.46	8.21	7.50	7.26	7.75	7.25	8.30	8.16	na
No of kg of crop required to buy 1 kg of fertilizer	nitrat	0.42	0.54	0.66	0.72	0.74	0.70	0.74	0.65	0.66	
	urea	0.61	0.78	0.94	1.03	1.06	0.99	1.06	0.93	0.94	
	TSP	0.64	0.83	1.01	1.11	1.14	1.07	1.14	1.00	1.02	
	S/K	0.95	1.21	1.47	1.61	1.67	1.56	1.67	1.46	1.48	
Lentil Price		18.30	19.80	21.30	21.83	23.30	24.40	23.50	26.11	28.81	na
No of kg of crop required to buy 1 kg of fertilizer	nitrat	0.19	0.20	0.25	0.25	0.23	0.22	0.23	0.21	0.19	
	urea	0.27	0.29	0.36	0.35	0.33	0.32	0.33	0.29	0.27	
	TSP	0.28	0.31	0.39	0.38	0.36	0.34	0.35	0.32	0.29	
	S/K	0.42	0.45	0.57	0.55	0.52	0.50	0.51	0.46	0.42	
Chickpea Price		17.30	22.70	24.30	20.44	23.60	32.70	33.40	30.48	24.82	na
No of kg of crop required to buy 1 kg of fertilizer	nitrat	0.20	0.18	0.22	0.26	0.23	0.17	0.16	0.18	0.22	
	urea	0.28	0.26	0.32	0.38	0.33	0.24	0.23	0.25	0.31	
	TSP	0.30	0.27	0.34	0.41	0.35	0.25	0.25	0.27	0.33	
	S/K	0.45	0.40	0.50	0.59	0.51	0.37	0.36	0.40	0.49	

**SUBSIDY UNDER DIFFERENT PRODUCTION, IMPORT, COST AND SELLING PRICE SCENARIOS ANNEX 20 - 3**

<b>Base Data</b>				
	<b>Amm Nitrate</b>	<b>Urea</b>	<b>TSP</b>	
Sale Quantity 2001 - estimated	56000	48352 2	27620 0	
Sale Quantity 2004 - estimated	108000	49086 1	29813 4	
Production Current Level	56000	77000	15000 0	
Production at 90% capacity - 2004	108000	29700 0	29813 4	
Imports 2001 - estimated allowing for local production	0	40652 2	12620 0	
Imports 2004 - estimated allowing for local production at high level	0	15256 6	0	
Imports 2004 - estimated allowing for local production at current low level	0	44781 7	14813 4	
<b>IMPORTS</b>				
Deficit/surplus - at current farmer prices	95	108	-1811	
Deficit/surplus - at farmer prices equal to world prices	0	0	0	
<b>PRODUCTION</b>				
Deficit/surplus at current farmer prices, current production efficiency	-1876	-1694	-2499	
Deficit/surplus at farmer prices equal to world prices, current production efficiency	-1971	-1802	-688	
Deficit/surplus at current farmer prices, 90% production efficiency	-466	1069	-949	
Deficit/surplus at farmer prices equal to world prices, 90% production efficiency	-561	961	862	
<b>Subsidies under Different Scenarios</b>				
				<b>Total</b>
<b>1 Subsidy 2001 at current production efficiency, at current farmer prices</b>				
On imports	0.00	43.96	- 228.55	- 184.5 9
On production	-105.04	- 130.41	- 374.81	- 610.2 6
Total	-105.04	-86.46	- 603.35	- 794.8 5

<b>2</b>	<b>Subsidy 2004 at current production efficiency, at current farmer prices</b>				
	On imports	0.00	48.42	-	-
	On production	-105.04	130.41	374.81	610.26
	Total	-105.04	-81.99	643.07	<b>830.11</b>
<b>3</b>	<b>Subsidy 2004, at 90% production efficiency, at farmer prices equal to world prices</b>				
	On imports	0.00	0.00	0.00	0.00
	On production	-60.64	285.47	256.89	481.72
	Total	-60.64	285.47	256.89	<b>481.72</b>
<b>4</b>	<b>Subsidy 2004, at 90% production efficiency, at current farmer prices</b>				
	On imports	0.00	16.50	0.00	16.50
	On production	-50.37	317.58	283.02	-15.81
	Total	-50.37	334.08	283.02	<b>0.68</b>

Notes:

1. Difference between 1 and 4 indicates the savings through improvement in production efficiency in respect of each product.
2. Difference between 1 and 2 indicates how subsidy rises if there is no production increase and how increased import moderates subsidy increase
3. Item 3 shows that with improved production efficiency it is possible to sell at world prices and still make a surplus except on AMN

**SEED COST RECONSTRUCTION FROM AVAILABLE DATA  
AND ESTIMATE OF IMPLICIT SUBSIDY**

**ANNEX 21 (PARA 7.34)**

	Item of Cost	Wheat soft	Wheat hard	Barley	Lentils	Chickpea
1	Crop price SP/kg	10.30	11.30	7.00	16.00	17.80
2	Premium on Crop price for seed procurement - % - as per GESM	20	20	20	20	20
3	Procurement price - SP/kg	12.36	13.56	8.40	19.20	21.36
4	Processing cost - SP/kg as per GESM	1.10	1.10	1.10	5.35	5.35
5	Total cost after processing - SP/kg	13.46	14.66	9.50	24.55	26.71
6	Process Loss - % as per GESM	0.2	0.2	0.2	0.2	0.2
7	Cost allowing for process loss - SP/kg	13.49	14.69	9.52	24.60	26.76
8	25% being cost of servicing capital cost of processing unit SP 90 million/10000 tons - per kg	2.25	2.25	2.25	2.25	2.25
9	Total Cost - SP/kg	15.74	16.94	11.77	26.85	29.01
8	Selling Price - SP/kg as per GESM price list	10.00	17.00	12.10	20.00	28.00
9	Gross margin - SP/kg	-5.74	0.06	0.33	-6.85	-1.01
10	Storage loss at 3% of 7	0.40	0.44	0.29	0.74	0.80
11	Transport over average 400 km at SP .71 per ton/km - SP/kg	0.28	0.28	0.28	0.28	0.28
12	Selling Commission to ACB - 2% of 8 as per GESM	0.20	0.34	0.24	0.40	0.56
13	Interest at 10% for 24 months i.e. 20 % on 7 based on GESM's indication of stock of wheat seed (280,000 tons equivalent to about 24 months' inventory)	2.70	2.94	1.90	4.92	5.35
14	Warehousing cost for 24 months at SP 12 per ton/month - SP/kg	0.24	0.24	0.24	0.24	0.24
15	Establishment costs at 5% of 7	0.67	0.73	0.48	1.23	1.34
16	Profit at 5% on 7	0.67	0.73	0.48	1.23	1.34
17	Total Costs items 10 to 16 - SP/kg	5.17	5.71	3.90	9.04	9.91
18	Deficit - SP/kg	-10.91	-5.65	-3.57	-15.89	-10.93
19	Quantity Sold 1999 - tons		154266	6986	1500	1475
20	Deficit SP million		-1276.902	-24.956	-23.830	-16.115
21	Total deficit - SP million					-1341.804
22	Sale value - SP million		2082.591	84.531	30.000	41.300
23	Total sale value of the 5 crops - SP million					2238.422
24	Total turnover as per GESM - SP million					4000.000
25	Proportionate adjustment of deficit for the total turnover of 4 billion - SP million					-2397.768

- 1 Process loss is 10% according to GOSM but the net loss after adjusting for gain in moisture is only 0.1 to 0.2% . The lower figure has been taken. The process cost per ton at the processing unit is SP 565 for seed treatment, 200 for packing, 50 for handling, 285 for depreciation and wages, that is a total of SP 1100. Seed treatment is not incurred for lentil and chickpea
- 2 Cost of servicing the asset at the processing unit has been taken under item 8 to cover current value of depreciation cost of money and upkeep costs, altogether at 25%
- 3 The above does not include subsidy on seedlings for fruit trees and for forest trees issued by the concerned Directorates. Fruit trees app 5 million per year at SP 13 against cost of SP 25 (basis - cost of olives) =SP60mill
- 4 Forest trees app 24,000 ha per year at 1000 per ha at SP 1 per seedling against cost of SP 15.= SP336mill
- 5 Breeder seed is available at no cost. Other classes of seed material are supplied to growers at cost of commercial crop implying a subsidy but the extent of it could not be determined for want of data

## **PROPOSED FERTILIZER COORDINATION UNIT (FCU)**

### **1. Need for a Centralized Coordination Unit**

A suitable mechanism for coordinating and monitoring the macro-inventory assumes importance with parallel participation of the private sector along with the present public sector agencies producing, importing and marketing fertilizer.

the fcu with an official of the rank of director as the coordinator, assisted by a Deputy Director, who would be full time in charge of this unit, a senior finance executive of Deputy Director's rank, equipped with necessary support staff, computers and vehicle. It would bring together all stakeholders, coordinate their activities and ensure a cost effective competitive market for fertilizer, facilitate increasing consumption and ensure adequate supplies. It would coordinate with desiring importers and facilitate the consolidation of their indents into shiploads, assist in coordinating arrival schedules to match seasonal demand, estimate regional and national demand through continuous exchange of information and views and ensure overall adequacy and continuity of supply. Importers capable of imports in shiploads would be free to do so and the FCU would render them all assistance in getting the necessary exchange.

### **2. Responsibilities of FCU**

FCU would coordinate the implementation of fertilizer use and development policy and strategies and maintain close contact with district and regional administrations. In particular the following would be its functions:

- (a) Coordinate imports of fertilizers of the right types in a timely cost-effective manner and ensure their placement in consuming areas according to their potential.
- (b) Execute government's pricing and subsidy policy through the price coordination mechanism.
- (c) Administer the Pricing System, the equalization fund and the related functions including the fixation and review of normative prices for the Homs Company, in coordination with the Ministry of Industry and the Finance Ministry (see Annex 24), including disbursement of normative compensation to Homs and subsidy vouchers to marketers.
- (d) Enrol importers/marketers based on eligibility norms and monitor their performance and compliance with the code of conduct as laid down from time to time.
- (e) Administer the fertilizer licensing system and ensure timely availability of foreign exchange to cover the supply-demand gap as estimated at the beginning of the year and revised and updated periodically. License eligibility would be to approved importer/marketers and subject to production of pro forma invoice and contract and verification of the reasonableness of price. The object of the licensing system is not to restrict the number of participants but to ensure that players with long term commitment and willing to set up a marketing system are enlisted. The other objective also is to ensure reasonableness of import prices. Mark-up percentage margins offered by contending importers would also be a criterion.

- (f) Supply to decision makers and others, timely information on international demand-supply situation, prices and costs of inputs and domestic consumption;
- (g) Coordinate the demand estimation process from the grass-root institutions, compile and moderate them and finalize the estimate and procurement plans at an annual workshop representing all stakeholders;
- (h) Provide stakeholders and policy makers regular feedback on fertilizer production, imports, placements, consumption and stocks;
- (i) Design, implement and maintain a market information system in coordination with the domestic manufacturer, importers, wholesalers, regional administrations, district administrations and any other body as necessary;
- (j) Prepare and submit short, medium and long term plans, work programs, progress reports;
- (k) Prepare, from time to time according to need, guidelines needed for effective implementation of fertilizer development in consultation with stakeholders and ensure their promulgation by the Government, where it is required, and implementation;
- (l) Maintain close relationship with private sector and cooperatives and such other agencies that are major players in the development of a competitive efficient market;
- (m) Continuously review fertilizer supply chain effectiveness and retail network coverage to strive for improving efficiencies and quality of service;

### **3. Selection of Importer/Marketers**

Foreign exchange and license would be issued to intending importers on condition that the minimum quantity per shipment is 5000 tons and that the minimum quantity to be imported during the season would be 30,000 tons. The objective is to have large marketers capable of building up a distribution network and covering more than one Governorate. A Committee convened by the FCU and constituted for the purpose would select and approve intending importers/marketers. Recognition by FCU as Importer/Marketer is a pre-requisite for grant of import license. The other criteria are spelt out in the Annex on Pricing Mechanism and in 2 (e) above.

### **4. Import Licenses**

The object of centralizing import license issue with FCU is to ensure that foreign exchange is effectively used and fertilizer is bought at internationally competitive prices. One way of achieving this purpose is to allot foreign exchange (i.e. import licenses) based on sealed offers, supported by firm quotations indicating grade, quantity and time of shipment, submitted by approved importers. Offers above a cut-off value would be rejected. This auctioning could be carried out monthly, two months ahead – example, in first week of September for November imports and so on.

### **5. Supply Plan**

The demand estimate is to be converted into a supply plan as part of the overall inventory management and this is done as follows. Supply Plan would comprise estimated consumption for the year minus opening inventory with importers and Homs Company plus any stock in transit plus “pipeline” requirement which could be about 10% of estimated consumption. The pipeline would also help to meet unforeseen demand spurts. The part of each participant in the Supply Plan would be clearly delineated in terms of quantity and fertilizer type to be imported, months of import, Governorates to be covered. The Supply Plan would be reviewed at required intervals to monitor compliance.

## **6. GEZA's role as Buyer of Last Resort**

In the eventuality of the sum total of the quantity proposed to be imported falling short of the projected requirements, or if shipments ordered by market participants were falling behind schedule, FCU would activate imports of appropriate quantities and fertilizer types by GEZA. Before doing so, however, FCU would try to persuade importers to increase the quantities or speed up their schedule.

## **7. Ensuring Adequate and Timely Supply**

There could be the risk of importers being overcautious in ordering shipments in such a manner that are fully sold out by the end of the season causing a shortage toward the close of the season. To avert this contingency and to encourage importers to provide for a normal carry-over, it is worthwhile offering an incentive at a predetermined percentage or unit rate per ton on carry-over stocks subject to certain limits and conditions. The incentive would contribute to carrying cost incurred by importers and its applicability would be limited to the actual stock or 10% of the quantity sold by the importer during the season whichever is less. It would also be subject to his having provided inventory and arrival returns at such periodicity and time schedules as prescribed by FCU. This incentive would reduce the risk of short ordering and minimize the role of GEZA as the buyer of last resort. This incentive could be paid from the equalization fund (see Annex on Pricing for the role of the equalization fund).

## **8. Forward Cover for Currency**

If the currency is allowed to float there could be an important element of cost in the price structure particularly if importers resort to supplier credit to avail of low LIBOR based external interest rates. The importer may have to pay more, in terms of local currency, on the due date if the currency had depreciated by then. Forward cover by the Central Bank of Syria or any authorized dealer in foreign exchange could offer forward cover for currency to protect against this risk.

## **9. Consultative Committee**

FCU would have a Consultative Committee meeting quarterly to review activities and provide policy guidelines. The Committee would be chaired either by the Minister or the Deputy Minister and would have representatives of all stakeholders including the Ministry of Finance, three Governorate Directors by rotation every year and three representatives of the private sector.

## **10. Information flow**

This could be on the following lines, fertilizer type-wise.

From the mantikas to Governorates with copy to FCU

- (a) Opening stock, arrivals, inter-district transfer, if any, every month (the following month's opening stock would automatically give the sale equivalent to consumption)
- (b) Is the closing stock enough to meet the following month's estimated consumption?
- (c) Approved estimate of consumption and the progressive actual up to the month and percentage
- (d) Assistance needed, if any

From the Governorates to FCU

- (a) Combined position of opening stocks of all districts, arrivals from into region from DSM or other regions. Inter-district movement within the region should be ignored.
- (b) Is the combined closing stock enough to meet the following month's estimated consumption for the region?
- (c) Approved estimate of consumption for the region and the progressive actual for the region up to the month and percentage
- (d) Action taken to make inter-district transfers to shift surplus from one to meet deficit in another to ensure no consumption is lost within available stocks in the region
- (e) Action taken on district requests for assistance
- (f) Assistance needed, if any

From FCU to Governorates

- (a) Action taken on requests from regions for assistance
- (b) Opening stock with Importers, quantity on order backed by LC, quantity in transit and under clearance
- (c) Progressive availability versus progressive requirement with reference to the country supply plan, comments on shortfall, if any, and action to correct deviations

## PROPOSED FERTILIZER PRICING MECHANISM FOR THE NEW COMPETITIVE CONTEXT

### Background and Objective

1. Farmer prices are fixed and have not been changed since 1992. Nor have crop prices been changed. From the marketing side, the objective of the new arrangement is to move gradually toward making fertilizers available to farmers at world prices and from the production side to make the pricing procedure such that the local production is self-reliant and held accountable for productivity.

2. "World prices" are difficult to define because they fluctuate from year to year and within the year. The domestic unit cannot be expected to take this fluctuating base as an indicator of efficiency as these prices are market driven. International suppliers who have large volume stakes in the market and are dependent on disposal for maintaining the cash flow, tend to depress prices below cost, in times of pressure, satisfied with recovering variable costs and any available contribution to fixed costs. Conversely, they recover much more than all the production cost and reasonable profit at other times when conditions are favorable. Therefore, this shock has to be absorbed by an equalization system, which can ensure the local unit of regularity of returns (at normative efficiency and not with a view to subsidize low efficiencies) and cash flow. Domestic production in Syria, because of local availability of critical raw materials, would be viable at high capacity utilization.

3. Another factor to be considered is the basic difference in the working capital situation between an importer and the production unit. The former imports on the eve of the season and has less carrying costs by way of interest, storage and storage losses. The latter produces throughout the year, fertilizer production being a continuous process, and waits for the season. The season in Syria is virtually a single season exacerbating this cost difference

4. A third factor is that importers procuring at the last moment would incur less costs and those buying and storing ahead, thereby performing an effective marketing service, would be at a disadvantage. This, unless neutralized, could lead to last minute scrambles and possibly to insufficient availability and shortage

### 5. Pricing Procedure

- (a) At the beginning of each financial year, normative prices would be fixed for the Homs unit for the purpose of compensation. The basis for this price would be the variable costs including interest on working capital per ton plus fixed costs including depreciation spread over 75% of production capacity. The return on capital would be either a fixed margin per ton or calculated as a percentage over the total capital employed and spread over the volume representing 75% of production capacity. The price per ton would be fixed on the foregoing basis. The annual review would, therefore, be a simple process, as the prices would change only if any of the basic parameter changes – such as the price of raw material or for allowance for a reasonable rise in wage bill.
- (b) The unit would be eligible for compensation at the normative prices. The company has the opportunity to maximize its profits by operating at more than 75% of capacity. It would justifiably suffer a reduction in profit if it operated below 75%.

- (c) Homs Company would sell either at prices fixed by the coordinating authority or exercise the freedom to match the import prices, as decided by the coordinating agency. The prices would be ex-factory, all onward costs added to the respective destinations. Both AIMO and private marketers would be distribute and market Homs production. Homs will offer off-season discounts to sell the material ahead of season or move the material to regional warehouses, hold them at their own cost and sell, nearer season, at ex-warehouse prices to AIMO and private marketers. The holding cost is included in the normative compensation price.
- (d) Importers – private as well as AIMO – would be allowed to cost their imports at landed cost plus a margin of 8 to 10 % covering their overheads and profit. Another option would be ask intending importer/marketers to indicate at the beginning of the operation what percentage margin they would add to the landed cost. The best offers could be one of the criteria for selection of Approved Importer/Marketers. The prices thus arrived (landed cost plus approved percentage) would be ex-port or warehouse at near port, all onward costs added to the respective destinations. Whenever the government wishes to subsidize the price, the percentage or amount per ton of subsidy would be indicated and to this extent the landed cost would be reduced and the approved distribution margin percentage marked up thereon. This subsidized portion would be given to importers by means of credit vouchers to be adjusted through purchases from Homs. The adjustment would not be in one installment but at a certain amount per ton, equivalent to the subsidy. The object is to induce purchases from the local unit in parallel with imports. Thus Homs would become the conduit for reimbursement of subsidies “in kind” and government would reimburse the subsidy so adjusted by Homs.
- (e) Sales made by AIMO and private marketers to their dealers would be at the above prices and the dealers, in turn, would mark up the onward costs to their respective destinations/stores plus a profit margin. This margin should, ordinarily, not exceed 5% and need not be controlled or fixed. Thus the prices would vary according to the distance from Homs or port and competition.
- (f) AIMO and private importers would be required to take from the Homs company a matching quantity or such proportion as may be relevant for a given year. This proportion would be declared, by the coordinating organization, at the start for the year based on plan figures of production and imports. Import license issues for imports would be limited on this basis.
- (g) Imports would arrive in different months and importers have the freedom to buy ahead of the season to avail of favorable prices. Those buying ahead would incur additional carrying costs compared to those buying close to or on the eve of the season. This imposes a differential cost and discourages buying ahead. To offset this, there would be a levy calculated at 2% for every month in advance of the season. For example, assuming that the seasonal sales are from November to April the levy would be for two months just prior to November to confer on the earlier importers a differential advantage to meet holding costs. The levy for shipment arrivals in October would be 4%, for September arrivals 2% and exemption for earlier months.
- (h) The proceeds of this levy would be kept in a separate equalization fund by the coordinating organization.
- (i) Now, everyone has a level playing field except for advantages gained by their management efficiency and skills of buying and production.
- (j) At the end of each year, the coordinating organization would arrive at the sale proceeds of the Homs Company based on its observing government fixed or subsidized pricing or on the need to

match import prices. It would calculate the sum to which the company is eligible – by multiplying production quantities by the normative prices. Should the latter be greater than the former, the company would be compensated with the difference from the equalization fund. If it were the other way, the company would pay the difference in to the fund.

## PROJECT PROFILE

### 1. Rationale

Economic growth is the essential basis of a long-term strategy to reduce poverty through increased employment and food production. This growth strategy has to be supported through a series of measures.

- (a) policy framework to stimulate production, marketing and private sector growth;
- (b) reliable flow of inputs for the productive sectors;
- (c) essential improvement and expansion of infra structure for agricultural management, quality and research;
- (d) environmental conservation and
- (e) institutional capacity essential for efficient participation in the market and for performance of critical functions of regulation, umpiring and facilitation.

The proposed project would ensure supply of the most critically needed inputs, namely, fertilizer, seed and plant protection to raise and diversify the country's agricultural production and make it competitive in a global context. Research, extension and other support services would function and contribute synergistically not only to maintain Syria's strategic concern of food security but also to facilitate a progressively increasing participation in export opportunities as well as to protect soil fertility and environment as sustainable foundation for all-round growth. The Government of Syria's ownership and commitment is strong for this project as evidenced by several important economic reforms undertaken over the last few years.

### 2. Institutional Strengthening

The project would support the strengthening of input related institutions with necessary staffing, equipment, machinery and vehicles, according to need, to facilitate fulfillment of their redefined roles. These institutions include the AIMO, NSDCA, FCU, and Plant Protection Directorate for quality control and fertilizer quality control institutions. In particular, the project would support the formation of FCU, as it has to handle the most critical part of current input reforms.

The major responsibility for implementation of development plans and performance of market and quality management functions devolves upon Governorate and local administrations. The need for additional facilities such as vehicles and computers need to be studied and assessed.

Reliable and timely market information being the very essence of a competitive market, the input project would support the critical gaps in terms of equipment, not covered by earlier or other current projects, would be supported.

### **3. Technical Assistance to assess institutional requirements under proposed reorganization**

Type of Assistance: A national expert in Public Administration from the Damascus University or a recently retired senior civil servant, not below the rank of Director.

Duration: Three months

Terms of Reference: The expert would conduct a study of the concerned institutions and their current facilities, assess further needs in terms of equipment, staffing both at managerial and operative levels and training in skills needed for performance of new or enriched functions, estimate costs and recommend any other re-organizational requirement he considers necessary for effective performance of their new role. The expert would closely coordinate with and consult the concerned technical departments of the government such as the Plant Protection Directorate for pesticide quality testing and enforcement facilities, GOSM's Quality Control Directorate for setting up NSDCA with all support facilities and the present fertilizer quality control laboratory.

An important component of the study is the proposal for appropriate organizational structures, including reporting and coordination relationships and accountability parameters, for institutions envisaged by the input project to be set up newly or whose scope of functions is to be enlarged substantially.

Cost estimates would be classified as capital expenditure and recurring costs and also as local costs and costs in terms of foreign exchange. It is possible that all the assessed requirements are not needed immediately and, therefore, a phased program of procurement should be suggested. The report would include suggestions for reallocation of existing resources, wherever possible, in order to ensure that existing resources are put to best and maximum use before seeking additional infusion.

The expert would exercise caution in distinguishing between normal staff and equipment needs and those strictly related to additional functions arising out of redefinition of roles under this project. He would also take into consideration any assistance already provided by any earlier or other currently on-going projects and ensure that there is no duplication. The existing and proposed institutions that have a role in the reform are listed in the preamble.

### **4. Fertilizer Production**

Technical Assistance to evaluate potential for optimizing production at Homs

Type of Assistance: A two-person Team consisting of national experts, one in fertilizer production technology and the other in costing and finance, preferably, the present production/technical Director and Finance Director of the Homs unit.

Duration: Three months

Terms of Reference: The study would consist of three parts.

- (a) Study existing facilities at Homs and propose, with full details of technology and equipment requirements, a revamping plan to attain production to the full original capacities of ammonium nitrate, urea and triple superphosphate. The proposal would take into account the need for balancing the capacities of the ammonia, sulfuric acid and phosphoric acid plants with those of the downstream units. In framing the proposals, the experts would examine and take into account reasons for low production in recent months and, in particular, assess and apportion the shortfall to fall in rated capacity or low stream efficiency or plant imbalances or any other reason.

- (b) Study the causes for the high cost of ammonium nitrate at Homs compared to world prices and suggest ways of restoring its competitiveness and if this is not feasible evaluate the possibility and implications of closing down this unit. In suggesting the latter, the experts would assess the possibility of correspondingly increasing production of urea with the excess ammonia available due to the proposed closure, within existing capacity of the urea plant, if feasible, and, if not, what additional capital cost would be entailed.
- (c) Study the technical feasibility of producing DAP in place of TSP and evaluate whether this would improve the profitability of the Homs unit, in terms of better utilization of installed assets and lower maintenance cost in terms of less corrosion and other benefits. Evaluate the capital cost for this alternative.
- (d) The foregoing studies should be supported by capital cost estimates classified as local and foreign currency, comparative financial evaluation, estimate of duration for implementation, estimates of product costs including return on investment. If the revamping operation is likely affect current production the loss of profit, if any, on such interruptions should be capitalized and included in the estimates.

### **5. Technical Assistance on Input Marketing**

Type of Assistance: International Consultant. Candidate should be conversant with policies and systems concerning marketing, price and subsidy administration and should have at least ten years' marketing experience in a senior position in a country practicing an open system of marketing.

Duration: One Year. Location Damascus

Terms of Reference for the Marketing Expert to be attached to FCU

The Consultant would coordinate closely with and work under the guidance of the Head of the Fertilizer Coordination Unit (FCU). He/she would be responsible for advising and assisting FCU in implementing the input market reforms in order to achieve the establishment of a cost-effective competitive market for inputs (primarily fertilizer, seed and plant protection products). He would specifically be responsible for assisting FCU in respect of the following.

- (a) Guide and assist FCU in its various functions concerning supply management, price administration, subsidy administration, import licensing administration, selection of importer/marketers and operation of the equalization fund. This would include assistance in respect of designing systems and procedures concerning these aspects.
- (b) Refining the existing demand estimation system and design formats for involving all stakeholders, including local administrations in the planning, implementing and monitoring supply management.
- (c) Assisting in the streamlining of procurement, importation, port handling, transportation and storage practices in order to achieve the maximum efficiency and cost reduction.
- (d) Designing effective distribution and marketing strategies in consultation with importers and assisting them in implementation and periodic review; these would be supported by specific quantitative time-bound plans and grass roots level mapping and planning. The strategy should achieve the objective of reaching to the farmer at the villages by an appropriate distribution mechanism the right fertilizer type, at the right time, in adequate quantities and in a cost-effective manner.

- (e) Evolving dialogue mechanisms, at various levels, with the private and cooperative sector to discuss issues relating to marketing of inputs and output with a view to establish a competitive marketing system through stakeholder involvement and participation
- (f) Helping in devising and implementing policies and procedures that encourage wider private sector participation in input importation and output marketing
- (g) Guiding the observance of sound inventory management practices at the micro and macro levels to ensure timely arrivals of shipments without bunching at the port, adequate overall availability at the country level to meet pipeline and unplanned demand increases and to keep carry over within reasonable limit.
- (h) Supervising and participating as trainer in training programs for retailers, wholesalers and importers.
- (i) Preparing procedural manuals and handbooks wherever required for the guidance of participants in the marketing system
- (j) He/she would prepare a quarterly progress report of achievements versus programs/targets and make suggestions for improvements.

## **6. Seed Related Research and Extension**

### **Technical Assistance to Evaluate Current Research and Extension**

Type of Assistance: An international expert from a research institution or a retired researcher of international repute and a senior extension expert from any research institution of international standing.

Duration: Two months

Terms of Reference: Two-member mission to review the current research activity and the extension organization and the effectiveness of linkage between the two to ensure that maximum benefits from research are placed within reach of farmers and particularly those with small holdings.

To assess the current research capabilities relating to seed development and release of new and improved varieties for strategic crops with a view to identify shortcomings and make recommendations for improvement in terms of adequacy of breeding programs and their effectiveness, additional support facilities needed for breeders, strength of breeder teams, adequacy of germplasm resources and their characterization and cataloguing, integration of entomology, pathology and physiology in breeding programs, resources, identification of equipment, review mechanisms, integration with extension and linkage with farmers. The expert should make recommendations to improve the system with specific proposals and cost estimates.

The extension part of the study would focus particularly on capacity, staff motivation, facilities, monitoring systems, efficacy, strategy content and effectiveness as a link between farmer and research. More specifically, the team would examine the current workload on extension staff, adequacy of extension materials and equipment and institutional mechanism for involvement of the private sector, current strategy, its efficacy and localization, identification of strategies and criteria for localizing messages, identification of effective media for reaching farmers and any other aspect considered relevant. The expert team would make specific practical recommendations on these aspects and, in particular on the institutionalization of linkages with farmers to take research findings to them as relevant to respective

locations and with a view to take farmers' local problems and cultural characteristics into designing new varieties that directly address these local needs.

## **7. Fertilizer, Seed and Pesticide – Policy and Institutional Reform, Quality Standards and Enforcement Technical Assistance (Optional)**

Visits by senior teams of officials have been suggested (see subsequent section titled “Human Resource Development”) to observe practices in other developing countries to benefit by their experiences of successes and failures. Following these visits, special teams in respect of each of these three areas would be constituted to formulate specific proposals to be incorporated into the respective policies and laws. The teams would have representation from all stakeholders in each area including a representative from private sector. The formulated proposals would be placed before a three-day workshop with as wide participation as possible, including all provincial Directorates and private sector. The proposals and changes as agreed upon at the workshop and as endorsed by the Supreme Agricultural Council, with any changes considered essential from a policy standpoint, would be made into Policy and Law in respect of these three major inputs. In this effort should international technical assistance be needed in formulating the proposals, presenting them at the workshop and in finalizing them, these would be provided for under the project. Three separate experts on quality standards and enforcement aspects – fertilizer, seed and plant protection – would be engaged for duration of three months each, in addition to one input marketing expert for two months to deal with Input System, Policy and Institutional Reform. The assistance from international experts is at the option of the Government.

## **8. Human Resource Development**

Human resource development through technical assistance, training, study tours and tailor-made programs is central to the project. Foreign technical assistance has been limited to the bare minimum, as it is the objective of the project to utilize the talented local resource to the maximum extent possible. Training of private distributors, dealers and cooperatives on effective marketing practices would go a long way to motivate extensive participation and strengthen the market structure. Study tours for senior officials at the national and regional level and for importers/marketers to observe successful practices elsewhere in the world would be supported by the project.

- (a) AIMO, Private importers/marketers, distributors training – to be conducted by an overseas training institution – at a retreat in Syria – 40 participants each training, two training camps, one each year – Syllabus: Marketing concepts, control of marketing costs, market development, working capital management, procurement methodologies, international price trends and timing of purchases in the international market, dealer development, storage and handling practices, pricing strategies, promotion
- (b) Dealer Training – private retailers, joint venture outlets, and cooperatives – regional camps, two in each region - Syllabus: basic knowledge about fertilizers, crop dosages, application methods, storage practices, farmer services, delivery mechanisms and techniques for reaching villages, merchandizing and display, pricing, working capital management, inventory management, quality aspects and obligations under laws
- (c) Training for plant protection dealers – regional camps, two in each region. Syllabus: product knowledge, dosages and applications, precautions in handling and safety aspects, environmental

aspects of pesticide usage, types of common pests and products to be used to control them, working capital management, display, farmer services, pricing, quality aspects and obligations under laws

- (d) Senior level study tour to observe input marketing practices and agricultural planning, implementation and monitoring methodologies at national and state levels in other developing countries – three each from the Ministry, AIMO and private marketers, one from Homs marketing department and six from the agricultural Directorates in the Governorates.
- (e) Study tour to observe fertilizer, seed and pesticide laws and regulations and approval, registration and quality enforcement practices in developing countries. The team would include two senior officials from each of the Directorates dealing with fertilizer, seed and plant protection, two from the private sector pesticide industry, two from NSDCA and six from the Governorate agricultural Directorates. The visiting team would be made responsible for drafting the fertilizer, seed and pesticide laws and regulations.
- (f) National Sample Survey of Farm Households – A framework for such a study has been suggested by Dr Alexander Sarris. A study carried out by the Ethiopian Bureau of Statistics sponsored by the World Bank would be a useful model to adapt.

**Seasonal Variations of Crop Prices**  
**Annex 26**

Major crops prices (private - wholesaler)  
 1998-1999-2000

crop	month	January	February	March	April	May	June	July	August	September	October	November	December	Total	price		difference
		ary	ary												lowest	highest	
maize	2000	9.5	8.7	8.1	7.5	8.8	9	8.9	8.8	8.7	9			87	7.5	9.5	2
	1999	10.4	11.1	10.9	10.6	11	11.2	11.6	10.2	11.4	11.4	7.5	10.1	127.4	7.5	11.6	4.1
	1998	10.8	10.6	10	10.8	9.6	9.3	10.7	11	11	11.2	11.5	11	127.5	9.3	11.5	2.2
lentils	2000	26	26	26	24.3	24.6	24.6	25.5	25.5	25.4	26			253.9	24.3	26	1.7
	1999	24.7	25.6	25.8	25.7	26.3	26	26.5	26	25.6	25.7	26.2	27.2	311.3	24.7	27.2	2.5
chickpeas	1998	31.9	32	30.4	31.5	28.8	27.8	25.5	27.6	28	28	26.5	27	345	25.5	31.9	6.4
	2000	31.4	32	31.1	29.3	31.3	32.9	32.6	31.3	33.7	35			320.6	29.3	35	5.7
	1999	24.5	25.7	26	26	26.8	27.4	29.2	30.9	30.6	30.3	30.1	31.3	338.8	24.5	31.3	6.6
	1998	26	25.4	25.8	25.4	25	23.7	23.6	23.9	23.6	24	25.2	26	297.6	23.6	26	2.4

calculation of monthly averages for the last three years

crop	January	February	March	April	May	June	July	August	September	October	November	December	Total
maize	10.2	10.1	9.7	9.6	9.8	9.8	10.4	10	10.4	10.5	6.3	7	114
lentil	27.5	27.9	27.4	27.2	26.6	26.1	25.8	26.4	26.3	26.6	17.6	18.1	303.4
chickpeas	27.3	27.7	27.6	26.9	27.7	28	28.5	28.7	29.3	29.8	18.4	19.1	319

average of monthly averages

crop	
maize	9.497
lentil	25.28
chickpeas	26.58

monthly seasonal index

crop	January	February	March	April	May	June	July	August	September	October	November	December	Total
maize	1.08	1.07	1.02	1.01	1.03	1.04	1.1	1.05	1.09	1.11	0.67	0.74	12
lentil	1.09	1.1	1.08	1.07	1.05	1.03	1.02	1.04	1.04	1.05	0.69	0.71	12
chickpeas	1.03	1.04	1.04	1.01	1.04	1.05	1.07	1.08	1.1	1.12	0.69	0.72	12

