TABLE 4.4: LABOUR AND WATER USE ON MAJOR FIELD CROPS								
	Labour Use (days/ha)*			Water		Labour	Total	Labour cost/
	Machinery	Other	Total	Requirement	Labour days/	cost per	variable cost	total variable
	Operation			(cu.m./ha)	000 cu m water	hectare (SP)	per ha. (SP)	cost
IRRIGATED								
Wheat	2.8	12.4	15.1	4,018	3.76	2627	21454	0.12
Cotton	2.8	111.4	114.2	10,897	10.48	22508	39178	0.57
Sugarbeet	2.8	108.8	111.5	6,779	16.45	19228	50582	0.38
Tobacco	1.6	167.0	168.6	8,130	20.74	29360	64815	0.45
Broad Beans	1.3	50.0	51.3	4,444	11.53	8540	20070	0.43
Cucumbers	1.6	95.8	97.4	15,600	6.24	17665	47039	0.38
Onions	1.8	99.5	101.3	9,745	10.40	17540	64426	0.27
Potatoes	4.1	111.5	115.6	9,311	12.42	18010	91440	0.20
Tomatoes	1.9	198.5	200.4	9,311	21.52	33750	69665	0.48
RAINFED								
Wheat								
- AEZ 1	0.8	0.3	1.1			50	8763	0.01
- AEZ 2	0.7	0.3	1.0			50	9170	0.01
- AEZ 3	0.7	0.3	0.9			50	6022	0.01
Barley								
- AEZ 1	0.8	0.3	0.9			50	8790	0.01
- AEZ 2	0.6	0.3	0.9			50	7188	0.36
- AEZ 3	0.6	0.3	0.9			50	4296	0.01
- AEZ 4	0.6	0.1	0.7			25	2670	0.01
Lentils								
- AEZ 1	0.8	17.9	18.6			3575	10010	0.36
- AEZ 2	0.1	17.0	17.1			3400	7898	0.43
- AEZ 3	0.1	14.1	14.3			2825	5628	0.50
Chickpeas								
AEZ 1	0.8	15.4	16.2			3105	9974	0.31
AEZ 2	0.8	11.8	12.6			2350	8441	0.28

Source: National Farm Data Handbook, 1994.
* Days of 8 hours.

of the cost to the Government of price intervention. This focuses on the organisation that explicitly bears the cost of subsidisation. For wheat, this is the GCM, for cotton the CMO, and for sugar the GEC. It should be noted that, in the case of wheat, further, relatively small losses are made by other organisations involved in the storage, transporting and baking of wheat (see Section 3.1)

TABLE 4.5: GOVERNMENT PRICE INTERVENTION: COSTS AND BENFICIARIES

	Billion SP	Percentage of GDP
WHEAT (1999)		
- GCM loss	26.29	3.24
- Subsidy to farmers	10.80	1.33
- Subsidy on standard flour	1.98	0.24
COTTON (1998/99)		
- CMO loss	6.42	0.79
- Subsidy to farmers	9.88	1.22
- Tax on domestic spinners	2.30	0.28
SUGAR (1999)		
- GEC loss	3.72	0.46
- Subsidy to farmers	1.55	0.19
- Subsidy to consumers	1.63	0.20
TOTAL		
- Losses	36.43	4.49
- Subsidy to farmers	22.23	2.74
- Subsidy to consumers	3.61	0.44
- Tax on industry	2.30	0.28

The Annex 5 estimates are summarised in Table 4.5, above. It will be seen that wheat and cotton farmers received approximately equal total price support through Government acquisition at prices that were substantially above, respectively, import and export parity. However, the total losses of the GCM were some four times those of the CMO. This was for two main reasons. First, the GECPT includes in its selling price to the GCM not only its costs of acquisition, transport and intra-seasonal storage, but also the cost of financing the national strategic reserve and other interest costs that result from late reimbursement of losses by the Treasury. Second, the CMO recovers a part of the cost of subsidising seed cotton producers by selling cotton fibre to the domestic textile industry at prices that are above export parity. The GCM, conversely, sells standard flour at below import parity with the aim of reducing the retail price of bread.

Since official producer prices have not been changed since 1996, the relative size of the subsidy received by producers and by consumers of wheat and sugar will have tended to change from year to year with changes in relative world prices. In 1999, farmers and consumers shared the subsidisation of sugar roughly equally. In the case of wheat, some 85% of the total price subsidisation went to farmers.

Price subsidies to wheat, cotton and sugar beet farmers totaled SP 22.23 billion, equivalent to 2.74% of GDP. Total consumer subsidies by contrast amounted to less than 0.5% of GDP.

GCM losses amounted to a massive SP26.29 billion, equivalent to 3.24% of GDP; and total public losses for the three commodities to 4.49% of GDP. A further subsidy of 0.28% of GDP was in effect paid by the domestic textile industry to seed cotton producers.

5. STRATEGIC ISSUES AND STRUCTURAL AND INSTITUTIONAL REFORM

5.1 INTRODUCTION

The Government intervenes in the agricultural sector in three main ways:

(i) through physical planning of areas to be planted to particular crops;
(ii) through influencing the prices at which farmers acquire credit and inputs and sell their outputs; and
(iii) through direct public involvement in the supply of credit and inputs and the processing and marketing of outputs.

Interventions (b) and (c) are linked since the Government administers the prices of credit, inputs and outputs through the systems of public input supply and output marketing.

Government intervention has succeeded in achieving:

- a high rate of domestic agricultural growth;
- approximate self sufficiency in wheat;
- rapid growth in the production of the main export crop, cotton; and
- a high level of throughput for public cotton ginneries and textile mills, sugar factories and wheat mills.

However, intervention has (i) required major public expenditure on price support, especially for wheat, it has (ii) been only partially successful in conserving irrigation water reserves and in using these reserves efficiently, and it would seem likely that (iii) it has not led to the most efficient use of domestic resources, in the sense that water, land, labour and capital are unlikely to have been allocated between crops on the basis of comparative advantage.

This latter issue is difficult to resolve conclusively because the empirical measurement of comparative advantage is extremely difficult to achieve with any kind of accuracy. Measurement must be based on estimation of the domestic resource costs of earning a unit of foreign exchange. This, in turn, requires estimation of the social cost of using the domestic resources of water, land, labour and capital. Such estimation is necessarily difficult and contentious even in situations where adequate data are available. Moreover, estimates need to be made of the costs and yields of marginal producers rather than of typical producers, as is the normal practice. Accurate estimation of domestic resource costs is well beyond the scope of this study and, to our knowledge, has yet to be achieved in Syria.[45] Notwithstanding this, it would seem extremely unlikely that the allocation of water and other resources between crops reflects comparative advantage. This is for two reasons. First the Government has used its physical planning system to pursue crop output objectives that explicitly do not take account of the international unit market value of the crops in question. Second, to the extent that farmers have been able to make independent decisions on the crop mix to grow, these have been based on producer prices that embody marked differences between crops in the extent of nominal and effective protection.

[45] An attempt in 1994 by the Economic and Social Commission for West Asia (ESCWA) is reviewed in Annex 6.

5.2 ACHIEVING A MORE EFFICIENT USE OF AGRICULTURAL RESOURCES

Government intervention in the agricultural sector is currently required for three main reasons:

- water is not metered;
- the growing of key crops would not be profitable in the absence of intervention; and
- the Government has national production targets for certain crops.

Each of these reasons for intervention is examined below, with the aim of isolating possible structural, institutional and other changes that would lead to more efficiency within the agricultural sector while still achieving other key national policy objectives.

5.2.1 Efficient Use of Water

The problem

Water is a very scarce commodity in Syria. Some 90% of the total available water is currently used for irrigating crops. Almost all sources of irrigation water are currently being exploited up to their sustainable levels, and in some cases beyond. Given these three facts, it is essential that all available water resources in both irrigated and rainfed areas be used efficiently in each year, and that an optimal balance be struck between current and future water use.

Despite its scarcity and great value, there is currently no means of charging farmers for the volume of irrigation water that they use, since water is not metered. Once farmers have invested in a tube well and its associated equipment or have paid their fixed irrigation fee for water from government schemes, their use of water is in effect free, other than for the cost of pumping water from wells or rivers.

Because farmers are not charged for use, water has to be distributed between them administratively. For water supplied from dams, this is done through a combination of regulating the areas planted to particular crops and through limiting the supply of water to particular time periods. For water drawn by farmers directly from rivers or artesian wells, the only means of controlling use is through regulating areas planted. The need for this indirect system of regulation of water usage is a major justification for the Government's current system of agricultural production planning (described and reviewed in Section 2, above). However, this system does not ensure efficient water use since it only controls each farmer's theoretical potential water requirement. In practice, farmers can utilise more than the amounts that the Government assumes to be optimal without penalty. For this reason, water table levels have been falling throughout Syria, and water from dams is not used as efficiently as it could be.

The need is for a system of allocating the available water between farmers that leads to efficient utilisation and does not require the physical farm-by-farm state control of crop areas.

Solutions

Recognising the need for direct control of water usage, the Government decided in April 2000 that all artesian wells should be metered. Reportedly, no date has yet been set for meeting this target, but it is likely to take at least three years. The possibility of manufacturing meters locally is currently being explored.

Once wells are metered, usage of groundwater will be able to be controlled in one of two ways. First, water could be priced at a fixed charge per unit with no restriction placed on usage. This would have the administrative advantage that it would not require monitoring of the areas that farmers plant to each crop. The alternative would be for farmers to pay a standard charge for usage up to the level deemed optimal for the area of each particular crop that they plant and for

them to pay a penal rate for use in excess of this level.[46] In both instances, farmers would need to know the unit charges in advance of the season in order to allow them to make rational decisions on crop combinations. Both methods would require careful selection by the administering authority of the base rate, since this would determine total water usage. For each irrigation area, the aim should be to set this base rate at the level that would result for that area in water usage up to the sustainable maximum. For areas where the water table has been depleted by over-use in the past, the aim could be to regulate usage to levels that would lead to progressive replenishment. The rate of replenishment would, in turn, need to be based on a trade off between the benefits of current usage and the reduction in pumping costs resulting from a higher water table.

In the first year of introducing a new system, in the absence of prior experience of farmers' reactions, it would be difficult for the Government to set the rate at the optimal level. Therefore, it would be preferable initially to use the penal charge system, since this would involve less risk of making a major error in the initial years that led to gross over or under-usage. The difference between the standard and penal rates could then be reduced progressively until the two were unified. The rate at which they would be unified would need to be the rate that would lead to maximum sustainable usage or, in the case of areas where the water table has been depleted, to the optimal rate of replenishment. Once this were achieved and the Government were able to use price to manage water usage effectively, the Government production planning system would no longer be needed for this purpose.

The metering of water from dams and rivers is currently not possible due to the predominant open channel method of delivery. However, the long-term aims of the Government are reportedly (a) to convert all existing dam and river-based irrigation to pressurised systems that would allow metering, and (b) only to construct new systems that are fully pressurised.

In the interim, it will be possible to take some steps towards the objective of ensuring that farmers take at least some account of the cost of water in their decision-making. One measure that could be implemented immediately would be for farmers to pay for water through a per-hectare charge that varies with the crop grown, with the per-hectare charge being a function of the water necessary for the crop in question. This would allow farmers to take account of the cost of water when deciding on the combination of crops to grow. The rate would need to be set on the same basis as described above for groundwater. After a number of years of operation, it should be possible to set a rate for each area supplied from a particular source that leads to usage equal approximately to the water available from that source. Rates would then need to be varied from year-to-year as water availability varies with annual rainfall intensity. Physical regulation of availability would no longer be necessary but it would still be possible as a last resort should usage rates exceed those projected.

Over the long-term, once all surface irrigation water is metered, it should be possible to employ the same pricing system as proposed above for artesian wells.

Thus, for water regulation, we make the following recommendations:

- on non-metered irrigation systems, introduce per-hectare water charges, the rates of which are a function of the estimated water requirements of the crop grown;
- once an irrigation area is fully metered, initially introduce water charges per cubic metre, the rate of which increases to a penal rate once the farmer uses more than is estimated as optimal for the crops that he is growing; progressively reduce the difference between the standard and penal rates until they are unified at the rate that would lead to maximum

[46] From our discussions with Government staff, it would seem that the present intention is to use metering simply as a means of penalising farmers for water use judged to be excessive. Farmers would not be charged for water on the basis of usage.

sustainable usage or, in the case of areas where the water table has been depleted, to the optimal rate of replenishment.

5.2.2 Allocation of Resources between Crops

The problem

Some 79% of Syria's rainfed land that is devoted to annual crops is planted to wheat and barley. Some 58% of all irrigated land is planted to wheat and a further 21% to cotton.

To prevent the majority of wheat and cotton producers from making losses, the producer prices of both crops is currently being heavily subsidised by the Government. For both hard and soft wheat, the GECPT has recently been paying farmers prices that are over 60% above estimated import parity. For cotton the CMO producer price has been about 30% above export parity. The GECPT producer price for barley is currently approximately equal to import parity. However, subsidisation of barley will be required should world prices fall back from their current relatively high levels and/or should the country return to producing export surpluses once farmers no longer face drought conditions.

Thus, Syria is currently in a position in which two of its three main crops require subsidisation and the third may well need subsidising in the future.[47] This contrasts with other field crops, such as lentils, chickpeas, and a set of horticultural crops that farmers can grow profitably at unsubsidised parity prices.

In the absence of a large-scale devaluation of the SP, this situation is likely to persist for a number of years since, in the short-term, the potential for substituting other crops for wheat, barley and cotton is relatively limited. On rainfed land, other than for the possibility of planting small amounts of sesame and cumin, the scope for substitution is limited largely to lentils in zones 1 to 3 and to chickpeas in zones 1 and 2. There is no alternative to barley in Zone 4 other than for use of the land for extensive grazing. On irrigated land, there is scope for planting lentils and vegetables. However, the scope for substitution in the short term is limited by logistical constraints in processing and, in the case of vegetables, by the limited domestic market and the need to develop international marketing capacity.

Thus, while over the long term there is considerable scope for changing land use, in the short term a large proportion of the land under annual crops will need to continue to be planted to wheat, barley and cotton. This, in turn, means that their profitability must be maintained artificially. If this objective is not met, it will have major adverse consequences for agricultural employment and for the incomes of the nation's farm families, the majority of which rely heavily on producing one or more of these three crops.

The need to support wheat and cotton currently creates two distinct problems:

- it has a high fiscal cost for the Government; and
- it requires a mechanism for delivering the support. The mechanism that has been employed by the Government is direct state acquisition of the crop by public establishments (see section 3).

[47] The dominance of wheat is a consequence of government policy to obtain self sufficiency. Cotton production was also deliberately expanded during the 1990s in response to prices in international markets that allowed Syrian cotton to be exported profitably without subsidisation. International cotton prices have subsequently declined. The area planted to barley has more than halved over the past decade but it remains the dominant crop in the drier arable farming areas where there are few alternatives.

In the case of wheat, the situation is exacerbated by the fact that Government policy is for bread – Syria's main staple foodstuff – to be sold at less than world price equivalents. This adds to the fiscal burden (see section 4.4) and also requires a mechanism for delivery of the subsidy. The present mechanism is the sale of standard flour by a state establishment at a subsidised price (see section 3.1).

The situation is further exacerbated by the large strategic reserve of wheat held by the Government. Since this stock must be turned over regularly, this requires the Government to be a major buyer and seller of wheat.

The need is for some other means of providing price support to wheat, barley and cotton that has a lower fiscal cost and/or does not require direct government intervention.

Solutions

A large devaluation of the SP would increase significantly the domestic prices of basic foodstuffs and is therefore impracticable. Therefore the Government must continue to intervene to support producer prices.[48] It can do this in two ways:

- by direct state involvement in marketing, as at present; or
- through the use of market forces modified by the taxation of imports and the subsidisation of exports. This would, in turn, require the privatisation of government processing facilities.

The feasibility and potential advantages of using the latter method varies from crop to crop. In the remainder of this sub-section we discuss the possibility of eliminating direct state intervention for wheat and cotton and also for the other crops (other than tobacco) for which the Government has retained intervention mechanisms.

Cotton

In the case of cotton, an export subsidy aimed at raising the producer price would also raise the price of cotton fibre to the domestic textile industry. It would thus replicate the deficiencies of the current administered price system (highlighted in section 3.4). Thus, the subsidy would need to be injected at the ginnery level through a subsidy on either seed cotton purchases or fibre sales. Since this would apply to all cotton, the fiscal cost would be similar to the cost under an administered price system that sold cotton fibre to the domestic textile industry at export parity.

A necessary condition for such a system to operate effectively would be a competitive ginning industry in which privately owned ginning firms compete to acquire seed cotton from farmers. However, if the Government were to privatise the CMO's ginneries, this would not lead to such a competitive system due to the large size of each ginnery and the fact that seed cotton is a bulky commodity that is expensive to transport. Thus, while there may be a sufficient number of ginneries in Aleppo for there to be a reasonable degree of competition between them, elsewhere in the country there would be local purchasing monopsonies. A competitive private system would require large numbers of small ginneries in each producing area.[49] However, this would require additional investment and some loss of economies of scale. Unless private management proved to be markedly superior to the present management by the CMO, unit ginning costs would increase. Thus, there would seem little to be gained from radical changes to the present system. The principal need is for current pricing under this system to be modified so that all cotton fibre is sold by the CMO at export parity, including cotton sold to the domestic textile industry (See Section 3.4).

[48] Support could in theory be provided instead through the subsidisation of credit and inputs, but this would be more distorting than subsidising producer prices since it would influence the structure and techniques of production in addition to land use.

[49] Such a system exists in neighbouring Turkey, where each village in the main cotton producing areas has a number of competing privately owned small-scale ginneries.

Sugar

For sugar beet, the producer price could be raised through taxes on imports of raw and refined sugar. This would raise substantial revenue for the Government since the majority of Syria's sugar needs are met from imports. The cost would be borne by domestic consumers who, unlike at present, would pay a price for both imported and domestically produced sugar that reflected the unit cost of producing sugar domestically. The alternative would be to provide sugar factories with a subsidy that covered the difference between the cost of producing sugar domestically and importing. This would have approximately the same cost to the Government as the present administered pricing system.

However, the sugar factories would need to be privatised and this would face similar problems to those that would be experienced following ginnery privatisation. For similar reasons, the firms that owned individual factories would have local monopsony powers and there consequently would not be competitive formation of producer prices. Thus, as with cotton, there is little scope for privatisation and fiscal management of the producer price. The need is to operate the present administrative pricing system more effectively (see Section 3.5).

Barley

For barley, it would be feasible to regulate domestic producer prices using export and import taxes and subsidies. At times of domestic surplus, either an export tax or export subsidy would be required, depending on the level of world barley prices. Similarly, at times of domestic deficit, an import tax or import subsidy would be needed. The levels of these import and export taxes and subsidies could be varied using formulae that linked their level to a world price indicator.[50] This would allow support of a stable, remunerative barley price for the farmer and would be conducive to the further development of the present system of private trade in barley. The GECPT would no longer acquire barley from farmers. The GEF could acquire the barley that it requires for its feed mills by tender from the private sector, pending ultimate privatisation of these mills. A key advantage of such a system would be that it would remove a current impediment to the development of private-sector feed milling and should lead to a more efficient livestock sector (see section 3.2).

Thus, we **recommend** that the GECPT withdraw from the acquisition of barley and that the barley market be regulated in the future through variable taxes and subsidies on exports and imports. This recommendation is reportedly in the process of being implemented.

Wheat

The support of wheat prices through the use of fiscal measures to modify market forces is not feasible at present due to the dominance of the Government in marketing and processing. Futhermore, the Government maintains a large strategic reserve of wheat. This requires it to participate in the domestic wheat market even when it is not accumulating or depleting the reserve, since the existing reserve must be turned over regularly. Discussion of management of the reserve is excluded from this study due to its sensitive nature. This, in turn, precludes meaningful discussion of changes to the wheat marketing system since any such change must be designed to accommodate trading associated with the reserve.

Lentils and Chickpeas

Although the producer prices of these crops are not being supported by the Government at present, it is possible that at times in the future they may not be profitable at ruling export parity prices, since prices in world markets fluctuate from year-to-year. Therefore an issue is whether the Government should remain a buyer of last resort.

[50] The most appropriate indicator would probably be the International Grains Council's published price for French barley FOB Rouen.

There is a strong case for providing producer price support in years of low international prices, since progressive movement of rainfed land under wheat and barley into chickpeas and lentils is likely to result in a more efficient allocation of agricultural resources. This may also be the case for the movement of irrigated land from wheat to lentils. Such movement would be hampered if the growing of lentils and chickpeas became intermittently unprofitable in a situation where the Government was intervening to provide stable producer prices for wheat and barley.

Unlike cotton and sugar beet, the prices of lentils and chickpeas could be supported through an export subsidy rather through purchase by a government establishment. This would not encounter problems relating to the privatisation of processing, since a competitive private sector marketing and processing system already exists. It would have the following advantages:

- it would allow the present lentil processing facilities of the GECPT to be sold to the private sector and would preclude the need for the construction of additional processing capacity by both the private sector and the GECPT as production expands;
- this, in turn, would increase the efficiency of lentil processing, since the processing capacity of the private sector would not be intermittently grossly under-utilised, as under the present system where the GECPT acts as a buyer of last resort;
- for both lentils and chickpeas, it would stabilise the throughput of private traders and processors, thereby reducing their unit costs and the level of per unit profits that they seek.

Thus, we **recommend** that:

- the GECPT withdraw permanently from the acquisition of lentils and chickpeas;
- that it sell its lentil processing facilities to the private sector;
- and that a system of export subsidies for lentils and chickpeas be established to support the profitability of production in years of low world prices.

Such comprehensive action would be preferable to the more limited changes to the existing system recommended in Section 3.

5.2.3 Government Production Targets

The Government has the explicit objective of producing enough wheat annually for domestic consumption. To meet this aim, it has used its agricultural planning system to stabilise the area planted to wheat on rainfed land and to expand massively the area planted on irrigated land (from 237,000 ha in 1989 to 670,000 ha in 1999). Self sufficiency was attaind in the mid 1990s and retained until the very severe drought conditions experienced in 1999 and 2000.

The Government also aims explicitly to produce sufficient quantities of seed cotton and sugar beet to allow public processing facilities to operate at full capacity.

The system of agricultural planning can be used to ensure that minimum areas are planted to wheat, cotton and sugar beet, but it cannot guarantee per-hectare yields. In the case of wheat, this has resulted in the Government (a) seeking to ensure that enough land is planted to guarantee self-sufficiency in all but the most severe drought conditions and (b) to concentrate output on irrigated areas where yields are more stable than under rainfed conditions. This policy, in turn, led to large wheat export surpluses from 1996 to 1998.

Notwithstanding the problem created by yield instability, for all three crops the *area planted* could be managed through manipulation of the administered producer price without the need for the physical planning of planted areas. Thus, the existence of production targets does not, of itself, make it necessary for the Government to operate an agricultural production planning system.

Wheat

The Government's objective of annual self-sufficiency in wheat is based on the prevailing security situation in the Middle East. Annual self-sufficiency is, in turn, seen as necessary for ensuring national food security. While it is not appropriate for us to question the Government's food security objectives, it would seem possible that the necessary levels of national wheat availability could be ensured through a combination of domestic production, regular importation and stockholding that embodies a lower level of domestic wheat production than at present. This would allow some wheat land to be shifted into other, more-productive crops. However, it would seem that there is little potential for large-scale shifts in the short-term due to the lack of viable alternative crops.

Because of the high sensitivity of such an issue on national security grounds, it was considered inappropriate to attempt an in-depth investigation of this issue.

Cotton and Sugar

The objective of operating public processing facilities at high levels of capacity is not of itself rational. Capacity utilisation is just one of a number of factors that affects unit processing costs, and should be treated as such.

The utilisation of cotton ginneries and its impact on processing costs is discussed in Section 3.5. Syrian sugar production is so high cost that it would seem unlikely that the industry could ever be viable without government support. An argument that was frequently advanced to us in discussion with public officials was that sugar production must nevertheless be maintained because to cease production would be very costly in terms of employment.

The production of beet is indeed relatively labour intensive, both in terms of labour use per hectare, per cubic metre of irrigation water and relative to total variable costs (see Table 4.4). Notwithstanding this, the creation of employment through sugar production is extremely costly for the Government per job created. Beet production provides about 0.45 person years of work per hectare, giving total employment on the average of 28,500 ha planted in the past three years of approximately 13,000 person years. Given that the Government loses some SP1.6 billion per year more than it would if all sugar were imported, it is in effect providing an annual subsidy of SP 123,000 per job. The GESUG estimates that the sugar industry as a whole provides 28,000 jobs. Even if this is indeed the case and if all these jobs are in fact associated with domestic beet production and processing, this still gives an annual per-job subsidy of SP 57,000 per job. Such annual public expenditure is unlikely to be an effective way of using public funds to provide employment. Thus, we **recommend** that the Government considers the possibility of developing a programme for the gradual phasing out all sugar beet production. Such a programme should embody (a) research and extension efforts aimed at ensuring that farmers are supported effectively in their transition to alternative activities, and (b) a set of measures that aims to increase the efficiency of sugar beet production and processing during the transition period. These latter measures should be focused on the more efficient of the sugar beet areas and factories, and should include the changes in pricing discussed in sub-section 3.5.

5.3 THE PHASING OUT OF AGRICULTURAL PLANNING

The present system of planning leads to inefficiency because it inhibits farmers from adjusting their output to reflect their resource endowments, including family labour, capital and soil type and quality. This is especially the case for irrigated land, where each farmer within a village receives the same proportionate crop area allocations.

We have argued above that, with one possible exception, Government objectives relating to areas to be planted could be met without the present annual planning exercise. The exception relates to the use of irrigation water, which is partially controlled at present through the allocation to each farmer of specific areas to be planted to selected crops.

For water use to be allocated with maximum efficiency, it needs to be metered so that farmers take account of its opportunity cost when deciding upon usage. However, even without metering, the national *areas planted* to specific crops on irrigated land could in theory be controlled through a combination of differential per-crop water charges and producer prices. However, achieving national area targets in this way would be extremely difficult to implement in practice. This is because the optimal water charge in each area would depend on relative crop producer prices while the relative producer prices necessary to meet national production targets for selected crops would, in turn, depend on the rate of water charge set in each of the irrigation areas in which the crops are grown.

Thus, the existence of production targets represents a major practical impediment to the elimination of the system of agricultural production planning. Production targets therefore hamper efficiency directly by inhibiting crop specialisation on the basis of comparative advantage and indirectly through necessitating an area planning system that leads to an inefficient allocation of crops between farmers within each village.

5.4 SHORT-TERM IMPROVEMENT OF THE PRESENT AREA PLANNING SYSTEM

Improvements in the efficiency of Syrian agriculture, and therefore its international competitiveness, can be achieved in two conceptually distinct ways. First, the efficiency of production of specific crops can be improved through the adoption of new technologies and better farming practices. Second, the efficiency of total agricultural production can be increased through the switching of land between crops to arrive at an optimal combination of crops. The area planning system can only affect the latter, although the optimal crop combination will of course change as new technologies are adopted for particular crops.

5.4.1 Improvements in Area Planning at the Central Level

The options currently available to planners are heavily constrained by production targets (especially the target of wheat self-sufficiency), the relatively small number of crops that can be grown on most of Syria's rainfed land, and the need to rotate land between crops. However, within these constraints there is scope for changing the allocation of land to ensure that efficiency is maximised. This, in turn, requires that account be taken of the international unit values of the crops that Syria produces and the possibilities offered by trade.

Currently, some account is taken of export potential. For example, the 2000/01 plan will reportedly contain an increased area of irrigated lentils because lentils can currently be exported profitably without subsidy. The need is to adopt explicitly a planning system that steers national production systematically towards specialisation on the basis of comparative advantage and which maximises the gains from trade. We **recommend** that the Government adopt such a system. It must embody procedures for examining export potential systematically and also the potential to substitute imports for crops that Syria currently subsidises. It must then use these findings to identify optimal crop combinations on rainfed and on irrigated land in each agro-climatic zone.

Efforts to do this need to be based on an explicit recognition that it is water, not land, that is the binding constraint for Syrian agriculture. Thus, until more effective, market-based systems of allocating water are developed, the aim must be to utilise crop combinations that are most efficient in terms of their use of water. This, in turn, requires the development of farm models that maximise value-added per unit of water rather than per hectare of land.

Developing and implementing a methodology for such 'efficiency-based' planning will not be an easy task. In addition to the need to make forecasts of realisable export and import unit values, it must necessarily address the complex empirical issues relating to the identification of comparative advantage that were noted in sub-section 1, above.

The appended Project Profile 2 is for possible technical assistance to support national efforts to introduce systematic economic analysis into the planning mechanism.

5.4.2 Improvements in Efficiency at the Village Level

The core unit in the production planning system is the village. Within each village, farm families have different endowments of land, family labour and capital. They also have different needs and aspirations, especially regarding the income from their farm and the stability of this income. Consequently, optimal crop combinations will differ between farmers. Thus, it is important that the planning system embodies as much flexibility as possible for farmers within each village to specialise within the constraints set by the area targets for that village. This will become increasingly important as greater amounts of crops other than wheat and cotton are produced as the country moves towards specialisation based on comparative advantage.

Thus, **it is recommended** that the MAAR investigate the possibility of inter-farmer exchange of area allocations that would take place after the initial plan for the village has been established but before farmers are provided with licences. This would then still allow each farmer to use his licence as a basis for acquiring inputs and services.

5.5 THE TIMING AND SEQUENCING OF POLICY REFORM

Structural reform must be correctly sequenced. Furthermore, it is essential that each reform measure is carefully planned and that, prior to its introduction, all necessary physical investments are made, all administrative procedures are in place and all implementing personnel are fully trained. Consequently, effective implementation of a full programme of reform such as that proposed for Syria necessarily takes many years to implement fully.

Careful sequencing of reform is essential since the inter-dependence of government policies means that the success of some reform measures is dependent on the prior *effective* implementation of others.

In the case of Syrian agriculture, reform of the physical planning mechanism requires, in particular, that a system that is not dependent on area planning be first established for effectively controlling water use.

Early reform of irrigation control is also important given the critical need for more efficient use of water. Therefore it is important that the Government give priority to implementing the measures for irrigation described in Sub-section 5.2.1 above, namely (a) installing metering on wells and (b) introducing the recommended crop-specific interim system for charging for water from government irrigation schemes. The former is likely to take a minimum of three years, but the latter could be introduced more rapidly.

It is recommended that the Government aim to introduce crop-specific charges for water in the agricultural year commencing on 26th September 2002, and that it utilise the intervening period to develop the necessary administrative procedures and appropriate rates as described in sub-section 5.2.1. If this target is adhered to, the system should be in place, thoroughly tested, and operating effectively by 2005. Provided all wells are also metered by mid 2005, the Government could commence relaxing its control of area planted by September of that year.

Full relaxation will however require that the Government is either prepared to drop its present crop-specific production target for wheat or that it is confident of being able to achieve the national target through manipulation of the producer price. As noted earlier, such issues relating to wheat are not discussed in this report due to their sensitivity.

In the case of individual commodities, the majority of the reforms and changes proposed in this report could be implemented as soon as they receive government approval, since they would have a beneficial impact without the need for prior reform. This applies to:

- the proposed measures relating to the rationalisation of wheat milling capacity; and
- all the proposed measures for barley, lentils, chickpeas, cotton and sugar.

In addition, steps to introduce the following general recommendations could be taken as soon as they gain government approval:

- that relating to the efficiency of setting of administered producer prices;
- that relating to an area planning system that steers national production systematically towards specialisation on the basis of comparative advantage; and
- that relating to inter-farmer exchange of crop area allocations.

6. RECOMMENDATIONS

This Paper contains the following recommendations:

WHEAT

It is recommended that the MSIT undertake a survey of the private milling sector aimed at (a) determining its structure and capacity, (b) estimating the level of currently unutilised capacity and (c) projecting the number of years before additional wheat milling capacity will be required in Syria.

BARLEY

It is recommended that (a) private feed mills be allowed to tender for GCM bran and that (b) the Government remove the price discrimination that favours the direct use by farmers of barley and other feed commodities rather than properly formulated feed prepared in feed mills.

It is recommended that the present requirement to re-ship grain rejected by the MAAR be dropped and that importers be allowed to correct deficiencies through fumigation, drying or cleaning, and be permitted to then re-submit the grain to the Government for re-testing.

It is recommended that the GECPT withdraw permanently from the acquisition of barley and that the barley market be regulated in the future through variable taxes and subsidies on exports and imports.

LENTILS AND CHICKPEAS

It is recommended that price control of the domestic lentil and chickpea market be abolished.

It is recommended that:

- the GECPT withdraw permanently from the acquisition of lentils and chickpeas;
- that it sell its lentil processing facilities to the private sector;
- and that a system of export subsidies for lentils and chickpeas be established to support the profitability of production in years of low world prices.

Alternatively:

It is recommended that the Government sells its lentil processing facilities to private buyers and rents processing services in the future as and when it requires them.

COTTON

It is recommended that the CMO undertakes a detailed study of means by which its interest costs can be reduced, including a possible ginnery construction programme aimed at reducing the length of the ginning period.

It is recommended that the CMO sell cotton fibre to domestic users at approximate ex-ginnery *export parity* prices, not at cost-plus prices or at prices set at some notional 'international' level that is above export parity.

It is recommended that the MSIT monitor systematically the state of competition within domestic markets for garments and textile goods and that price control be eliminated where there are sufficient suppliers to ensure competitive price formation.

SUGAR

It is recommended that the Government equalise the duties on raw and refined sugar imports and simultaneously switch to a policy of charging importers of raw sugar only the marginal cost of processing.

It is recommended that (a) sugar-beet sucrose discounts and premiums be set at levels that accurately reflect the full loss and gain to the GOS of deviations in sucrose content from the base percentage, and (b) this measure be supported by an extension campaign aimed at encouraging farmers to adopt optimal levels of fertiliser application.

It is recommended that the Government examines the possibility of eliminating price control on sugar completely and selling Syrian-produced sugar ex-factory by tender.

I**t is recommended** that the GOS in future sell its sugar beet pulp by tender.

It is recommended that the GOS, in liaison with the MSIT, set its molasses selling price to the domestic market at export parity.

It is recommended that the Government develops a programme for the gradual phasing out all sugar beet production. Such a programme should embody (a) research and extension efforts aimed at ensuring that farmers are supported effectively in their transition to alternative activities, and (b) a set of measures that aims to increase the efficiency of sugar beet production and processing during the transition period.

WATER

It is recommended that:

- on non-metered irrigation systems, the Government introduce per-hectare water charges, the rates of which are a function of the estimated water requirements of the crop grown;
- once an irrigation area is fully metered, the Government initially introduce water charges per cubic metre, the rate of which increases to a penal rate once a farmer uses more than is estimated as optimal for the crops that he is growing; and that the Government progressively reduce the difference between the standard and penal rates until they are unified at the rate that would lead to maximum sustainable usage or, in the case of areas where the water table has been depleted, to the optimal rate of replenishment.

GOVERNMENT INTERVENTION

It is recommended that, for those crops for which the Government continues to set an official producer price, it base its decisions on price levels on detailed empirical analysis that takes explicit account, *inter alia*, of inter-year production instability and both mean unit costs and variations in unit costs between producers.

It is recommended that the Government adopt explicitly a planning system that steers national production systematically towards specialisation on the basis of comparative advantage and which maximises the gains from trade.

It is recommended that the MAAR investigate the possibility of systematic inter-farmer exchange of area allocations that would take place after the initial plan for the village has been established but before farmers are provided with licences.

It is recommended that once the Government takes a policy decision to reduce the degree of public intervention or control, it supports the decision as rapidly as possible with appropriate legislation.

PROJECT PROFILES

PROJECT PROFILE 1

PROJECT TO DEVELOP IMPROVED DATA AND ANALYSIS FOR PRODUCER PRICE INTERVENTION

1. BACKGROUND

The Syrian Government buys wheat, barley, lentils, chickpeas, cotton , sugar beet and tobacco from farmers at prices that are set annually by the Supreme Agricultural Council. It is likely that this procedure will need to continue over the medium term for all these crops other than barley, lentils and chickpeas.

Next to interest rates and the exchange rate of the Syrian Pound, these administered agricultural prices are probably the most important economic variables in the country. They affect the crop combinations that farmers grow and they are a major determinant of rural incomes and household food security.

Each price is currently set on the basis of an estimated average annual cost of production. There is need for more sophisticated analysis that allows decision makers to take account of the full set of objectives that are being pursued though price intervention. This, in particular, requires explicit treatment of inter-year production instability and a more disaggregated approach to the estimation of costs of production, including the examination of the costs of marginal producers.

Technical work for the annual review of administered agricultural producer prices is centred on the Directorate of Agricultural Economics (DAE) of the Ministry of Agriculture and Agrarian Reform. The Directorate has its own cadre of research staff located in the Governorates but these currently do not have the capacity to collect and process cost of production data effectively.

In the case of barley, lentils and chickpeas, there is need to develop means of indirect control of producer prices that allows the withdrawal of the General Establishment for Cereal Processing and Trading (GECPT) from its role of buyer of last resort and the further development and consolidation of private sector marketing and processing.

2. OBJECTIVES

(i) To assist the DAE to develop an improved system for setting annually the level of administered producer prices for selected agricultural crops.

(ii) To develop systems for indirectly supporting the producer prices of barley, lentils and chickpeas that are compatible with processing and marketing being undertaken entirely by the private sector.

3. SCOPE OF WORK

(i) Review the present system for setting administered agricultural prices, including the underlying collection and analysis of data on farm costs.
(ii) Identify the set of objectives that the Government seeks to pursue through its influencing of the levels of producer prices.
(iii) Develop a methodology that allows these objectives to be pursued systematically.
(iv) Identify the data needed, including data relating to per-hectare costs of production, yield levels and instability, domestic price structures, and parity prices.
(v) Develop appropriate systems of data collection and analysis that, to the extent possible, use existing institutions, staff and equipment.
(vi) Identify associated training requirements.
(vii) In the case of barley, lentils and chickpeas, develop in detail systems for achieving producer price objectives that are compatible with market-based systems of price formation and do not require the GECPT to operate as a buyer of last resort.

4. TIMING AND STAFFING

The project would have a duration of two years.

Staffing: One full-time Team Leader/Economist based in the DAE.

National and/or international short-term specialists in:

- rural surveying of farming systems, costs and yields
- data processing and transmission

5. INSITITIONAL ARRANGEMENTS

The project would be based in the DAE, with the Team/Leader Economist reporting to the Director of the DAE. Close liaison would be required with other MAAR directorates, the Price Department of the Ministry of Supply and Internal Trade, and the Ministry of Finance.

PROJECT PROFILE 2

PROJECT TO SUPPORT THE DEVELOPMENT OF MORE EFFICIENT AGRICULUTURAL PLANNING AND WATER USE MANAGEMENT

1. BACKGROUND

The Syrian Government currently plans the areas to be planted to specific key crops. Through an iterative process, a national plan is developed under which each individual farmer who cultivates over 0.5 hectares is licensed prior to the start of each crop year to plant specific areas to specific crops. The technical work for this is centred on the Department of Planning and Statistics (DPS) of the Ministry of Agriculture and Agrarian Reform (MAAR).

Such production planning is currently required principally because (a) the Government seeks to achieve national production targets for certain crops, and (b) in the absence of metering or other price-based methods of allocation, this is the only means of controlling the use of irrigation water.

The present planning system focuses on technical issues, with only limited account being taken of the actual or potential international market value of each crop. The need is to adopt a system which, within the constraints set by government objectives, maximises the efficiency of agricultural resource use, especially use of the most scarce resource, water.

2. OBJECTIVE

To develop the existing system of agricultural planning so that, while continuing to meet government objectives, it takes account of comparative advantage and the need to maximise the efficiency of water use.

3. SCOPE OF WORK

(i) Review the present system of agricultural planning in detail, highlighting its main strengths and drawbacks.
(ii) Identify key objectives that the Government sets for the system and determine how these are related to changes in the combinations of crops that farmers produce.
(iii) Develop a set of models for key crops for each of the major agro-climatic zones in which they are grown; isolate the crops that make the most efficient use of agricultural resources, especially irrigation water, taking account of domestic and international marketing opportunities and constraints.
(iv) Develop a revised system of planning that employs this analysis, with the aim of maximising efficiency while also meeting other key government objectives.
(v) Provide analytical advice and support for the establishment of this system through one complete planning cycle.
(vi) Evaluate the performance of the system, identify problems, and develop remedial measures.

4. TIMING AND STAFFING

The project would have a duration of two and a half years: one year for preparatory theoretical and empirical analysis, one year for pilot implementation and monitoring, and six months for evaluation, problem identification and the development of remedial measures.

Staffing: One full-time Team Leader/Economist based in the DPS.

National and international short-term specialists in:

- rural surveying and analysis of farming systems;
- international markets and trade for selected commodities;
- data processing, transmission and analysis;
- monitoring and evaluation.

5. INSTITUTIONAL ARRANGEMENTS

The project would be based in the DPS, with the Team/Leader Economist reporting to the Director of the DPS. Close liaison would be required with other MAAR directorates, especially the Directorate of Irrigation, the State Planning Commission, the Central Bureau of Statistics and the hierachy of committees responsible for plan development and monitoring.

PROJECT PROFILE 3

PROJECT TO SUPPORT EFFECTIVE MANAGEMENT OF THE PROGRESSIVE LIBERALISATION OF THE AGRICULTURAL SECTOR

1. BACKGROUND

The Syrian Government is progressively liberalising its management of the agricultural sector, substituting market-based for administered prices, reducing the extent and degree of price support and relaxing the intensity of physical control and planning.

Given the importance of the agricultural sector to the Syrian economy, it is essential that future liberalisation measures are appropriately designed and that the process and phasing of change is optimal. This will be difficult to achieve, since the issues and problems that are encountered during liberalisation are complex. Many other countries have been through similar processes in recent years and it is important that Syria draws on the lessons learned for the design of its own programmes. Assistance will be most needed by the two directorates of the Ministry of Agriculture and Agrarian Reform (MAAR) that are most closely involved with the Government's agricultural planning and price intervention activities, namely the Directorate of Agricultural Economics (DAE) and the Directorate of Planning and Statistics (DPS).

It will be a number of years before the Agricultural Policy Centre (APC) of the MAAR is developed to a state that it is in a position to undertake fully the necessary analysis and provide the necessary advice. In the interim, it is essential that those MAAR departments at the heart of the liberalisation process receive strong, full-time support both for their involvement in the design of the process of change and for addressing associated issues and problems as they arise.

There will also be a need for the proposed support for the radical restructuring of the pricing and agricultural planning systems to be reinforced with advice from experienced economists on measures to address the associated problems that are likely to arise from day to day as the restructuring proceeds.

Finally, it will be important that senior government staff witness at first hand the useful contributions that experienced economists can make to general policy development, to the design of specific policy measures, and to the solution of *ad hoc* problems. This will serve to demonstrate the productive ways in which the APC's economists will be able in the future to support the MAAR line departments and should strengthen the demand for the Centre's analytical and advisory services.

2. OBJECTIVES

To provide key MAAR directorates with technical analysis and advice that will:

(i) support the development of policies, programmes and measures to liberalise and otherwise enhance the efficiency of Syria's agricultural sector;
(ii) assist in developing optimal solutions to associated issues and problems as they arise; and
(iii) demonstrate the valuable contribution that experienced economists can make to the work of the MAAR line departments.

3. SCOPE OF WORK

The assistance would be provided by one full-time economic advisor in each of the two directorates, each of whom would:

(i) liaise with government staff, advisors and consultants working on the development of policies and measures relating to the restructuring of intervention and support in the agricultural sector, identify practical issues and problems relating to these policies and measures, undertake analysis and provide advice on means of addressing these issues and problems, and thereby support the institutionalisation and consolidation of the restructuring;

(ii) support the detailed technical design of liberalisation measures not directly related to base producer prices or area planning, such as the current effort to set ex-ginnery cotton fibre prices at international levels;

(iii) assist with the preparation of the papers, memoranda and draft legislation required for associated decision-making and implementation;

(iv) liaise at a technical level with economists in the APC and help develop the capacity of the APC to address and become progressively more involved in analysis relating to the liberalisation process.

4. TIMING AND STAFFING

The project would have a duration of two years with the possibility of renewal for a further period.

Staffing:

- Two full-time Economists, one to be based in the DEA and one in the DPS, with one of the two being appointed Project Team Leader.
- Local and international short-term consultants recruited to work as and when required on issues requiring specialist skills.

5. INSTITUTIONAL ARRANGEMENTS

The Team/Leader Economist would report on behalf of the project to the Deputy Minister. For their day-to-day activities, the Economists would report, respectively, to the Directors of the DEA and DPS.

ANNEX 6: REVIEW OF ESCWA'S 1994 ESTIMATION OF DOMESTIC RESOURCE COSTS

In 1994, the Economic and Social Commission for West Asia (ESCWA) developed a set of policy analysis matrices for selected Syrian crops,[51] using budgets for 1993 for:

- wheat, cotton, sugar beet, maize and sunflower grown under irrigation on farms located in Aleppo, Al Hassake, Hama and Damascus Governorates; and
- wheat, barley, lentils and chickpeas in four rainfed agro-ecological zones.

Domestic resource cost (DRC) ratios derived from these PAMs showed for the strategic crops that:

- Syria has a strong comparative advantage in all four rainfed crops (wheat, barley, lentils and chickpeas);
- Syria has a strong comparative advantage in cotton;
- Syria has a comparative advantage in irrigated wheat only in Damascus Governorate using shallow wells, water from rivers or gravity feed; and
- Syria does not have a comparative advantage in sugar beet.

These findings are frequently quoted by those who wish to argue that, other than for sugar beet, Syria is using its agricultural land reasonably efficiently.

Unfortunately, description of the data employed in the analysis is confined to one short paragraph in ESCWA's 95-page presentation. Furthermore, there is no discussion whatsoever of the yields employed and no mention of how border prices were estimated. Yields and border prices are key variables, small changes in which can have relatively large impacts on the DRCs.

Furthermore, some of the methodology employed is irrational. For example:

- it is assumed that imported refined sugar is transported to sugar factories rather than directly to distribution points;
- in the case of the calculation of the export parity price of lentils, no adjustment is made for (a) processing costs (b) weight loss or (c) byproduct realisation; moreover a transport cost from 'the mills to the port' is used to estimate the cost of transporting from a collection centre to the port;
- in the case of the calculation of the import parity price of sugar beet, no allowance is made for the realisation from the sale of molasses and pulp.

Most importantly, the study makes the fundamental error of assuming that the social price of rainfed land is zero because there are no competing crops to the four that are being cultivated (wheat, barley, lentils and chickpeas). This ignores the fact that the opportunity cost of devoting rainfed land to one of the four crops is foregoing the income of the most profitable of the other three. This error explains why the ESCWA study shows that Syria has a strong comparative advantage in growing all four crops on the same land.[52]

We have checked the yields and border prices used in the ESCWA study against, respectively, data on achieved yields and the levels of 1993 world price indicators. This shows that the yields and border prices employed both contained a heavy upward bias, resulting in the DRCs being substantially underestimated. Even in the comparatively favourable world market conditions

[51] Economic and Social Commission for West Asia, *Evaluation of Agricultural Policies in the Syrian Arab Republic (Policy Analysis Matric Approach), New York 1995.*

[52] It is possible for a country to have a comparative advantage in a set of crops, but not on the same land.

existing in 1993,[53] Syria almost certainly did not enjoy a comparative advantage in the wide range of crops and conditions indicated by ESCWA. In particular, irrigated wheat almost certainly did not enjoy a comparative advantage in any governorate no matter what type of irrigation was employed.

[53] See the time series of international price indicators for wheat, barley, cotton and sugar presented in Table 4.1.

ANNEXES

ANNEX TABLE 1.1: DATA ON FIVE-YEAR AND ANNUALLY PLANNED AREAS, YIELDS AND PRODUCTION OF STRATEGIC CROPS, 1995-2000

Irrigated Wheat

	1995	1996	1997	1998	1999	2000
ANNUAL PLAN						
Area (ha)	591,336	607,116	666,560	696,500	714,800	722,394
Yield (kg/ha)	4,000	4,100	4,085	4,096	4,150	4,169
Production (tons)	2,365,344	2,489,176	2,722,898	2,852,864	2,966,420	3,011,661
5-YEAR PLAN						
Area (ha)	624,727	649,716	675,705	702,733	730,842	760,076
Yield (kg/ha)	3,824	3,878	3,932	3,987	4,043	4,099
Production (tons)	2,388,956	2,519,599	2,656,872	2,801,796	2,954,794	3,115,552
RATIO OF 5-YEAR PLAN TO ANNUAL						
Area	1.06	1.07	1.01	1.01	1.02	1.05
Yield	0.96	0.95	0.96	0.97	0.97	0.98
Production	1.01	1.01	0.98	0.98	1.00	1.03

Rainfed Wheat

	1995	1996	1997	1998	1999	2000
ANNUAL PLAN						
Area (ha)	940,655	947,695	957,044	897,000	714,800	900,000
Yield (kg/ha)	1,630	1,800	1,803	1,830	2,000	2,007
Production (tons)	1,533,268	1,705,851	1,725,550	1,641,510	1,429,600	1,806,300
5-YEAR PLAN						
Area (ha)	1,018,916	1,029,105	1,039,396	1,049,790	1,060,288	1,070,891
Yield (kg/ha)	1,436	1,450	1,465	1,480	1,494	1,509
Production (tons)	1,463,163	1,492,202	1,522,715	1,553,689	1,584,070	1,615,975
RATIO OF 5-YEAR PLAN TO ANNUAL						
Area	1.08	1.09	1.09	1.17	1.48	1.19
Yield	0.88	0.81	0.81	0.81	0.75	0.75
Production	0.95	0.87	0.88	0.95	1.11	0.89

Wheat

	1995	1996	1997	1998	1999	2000
ANNUAL PLAN						
Area (ha)	1,531,991	1,554,811	1,623,604	1,593,500	1,429,600	1,622,394
Yield (kg/ha)	2,545	2,698	2,740	2,820	3,075	2,970
Production (tons)	3,898,612	4,195,027	4,448,448	4,494,374	4,396,020	4,817,961
5-YEAR PLAN						
Area (ha)	1,643,643	1,678,821	1,715,101	1,752,523	1,791,130	1,830,967
Yield (kg/ha)	2,344	2,390	2,437	2,485	2,534	2,584
Production (tons)	3,852,119	4,011,801	4,179,587	4,355,486	4,538,864	4,731,526
RATIO OF 5-YEAR PLAN TO ANNUAL						
Area	1.07	1.08	1.06	1.10	1.25	1.13
Yield	0.92	0.89	0.89	0.88	0.82	0.87
Production	0.99	0.96	0.94	0.97	1.03	0.98

ANNEX TABLE 1.2: DATA ON FIVE-YEAR AND ANNUALLY PLANNED AREAS, YIELDS AND PRODUCTION OF STRATEGIC CROPS, 1995-2000

Irrigated Barley

	1995	1996	1997	1998	1999	2000
ANNUAL PLAN						
Area (ha)	5,762	4,859	2,776	3,500	3,932	4,280
Yield (kg/ha)	3,047	3,100	2,264	2,230	2,257	2,465
Production (tons)	17,557	15,063	6,285	7,805	8,875	10,550
5-YEAR PLAN						
Area (ha)	8,361	8,695	9,043	9,405	9,781	10,172
Yield (kg/ha)	614	626	639	652	665	678
Production (tons)	5,134	5,443	5,778	6,132	6,504	6,897
RATIO OF 5-YEAR PLAN TO ANNUAL						
Area	1.45	1.79	3.26	2.69	2.49	2.38
Yield	0.20	0.20	0.28	0.29	0.29	0.28
Production	0.29	0.36	0.92	0.79	0.73	0.65

Rainfed Barley

	1995	1996	1997	1998	1999	2000
ANNUAL PLAN						
Area (ha)	1,657,065	1,545,217	1,624,000	1,490,998	1,430,000	1,429,719
Yield (kg/ha)	958	1,000	1,013	1,036	1,040	1,040
Production (tons)	1,587,468	1,545,217	1,645,112	1,544,674	1,487,200	1,486,908
5-YEAR PLAN						
Area (ha)	1,954,888	1,974,437	1,994,181	2,014,123	2,034,264	2,054,607
Yield (kg/ha)	591	597	603	609	615	621
Production (tons)	1,155,339	1,178,739	1,202,491	1,226,601	1,251,072	1,275,911
RATIO OF 5-YEAR PLAN TO ANNUAL						
Area	1.18	1.28	1.23	1.35	1.42	1.44
Yield	0.62	0.60	0.60	0.59	0.59	0.60
Production	0.73	0.76	0.73	0.79	0.84	0.86

Barley

	1995	1996	1997	1998	1999	2000
ANNUAL PLAN						
Area (ha)	1,662,827	1,550,076	1,626,776	1,494,498	1,433,932	1,433,999
Yield (kg/ha)	965	1,007	1,015	1,039	1,043	1,044
Production (tons)	1,605,025	1,560,280	1,651,397	1,552,479	1,496,075	1,497,458
5-YEAR PLAN						
Area (ha)	1,963,249	1,983,132	2,003,224	2,023,528	2,044,045	2,064,779
Yield (kg/ha)	591	597	603	609	615	621
Production (tons)	1,160,472	1,184,182	1,208,270	1,232,733	1,257,577	1,282,808
RATIO OF 5-YEAR PLAN TO ANNUAL						
Area	1.18	1.28	1.23	1.35	1.43	1.44
Yield	0.61	0.59	0.59	0.59	0.59	0.59
Production	0.72	0.76	0.73	0.79	0.84	0.86

ANNEX TABLE 1.3: DATA ON FIVE-YEAR AND ANNUALLY PLANNED AREAS, YIELDS AND PRODUCTION OF STRATEGIC CROPS, 1995-2000

Irrigated Lentils

	1995	1996	1997	1998	1999	2000
ANNUAL PLAN						
Area (ha)	3,166	1,848	0	0	0	100
Yield (kg/ha)	1,403	1,500	0	0	0	1,500
Production (tons)	4,442	2,772	0	0	0	150
5-YEAR PLAN						
Area (ha)	11	11	12	12	13	13
Yield (kg/ha)	1,455	1,484	1,514	1,544	1,575	1,606
Production (tons)	16	16	18	19	20	21
RATIO OF 5-YEAR PLAN TO ANNUAL						
Area	0.00	0.01				0.13
Yield	1.04	0.99				1.07
Production	0.00	0.01				0.14

Rainfed Lentils

	1995	1996	1997	1998	1999	2000
ANNUAL PLAN						
Area (ha)	162,189	164,436	145,000	177,935	192,651	188,047
Yield (kg/ha)	953	1,000	1,100	1,100	1,100	1,100
Production (tons)	154,566	164,436	159,500	195,729	211,916	206,852
5-YEAR PLAN						
Area (ha)	126,395	127,659	128,936	130,225	131,527	132,842
Yield (kg/ha)	889	898	907	916	925	934
Production (tons)	112,365	114,638	116,945	119,286	121,662	124,074
RATIO OF 5-YEAR PLAN TO ANNUAL						
Area	0.78	0.78	0.89	0.73	0.68	0.71
Yield	0.93	0.90	0.82	0.83	0.84	0.85
Production	0.73	0.70	0.73	0.61	0.57	0.60

Lentils

	1995	1996	1997	1998	1999	2000
ANNUAL PLAN						
Area (ha)	165,355	166,284	145,000	177,935	192,651	188,147
Yield (kg/ha)	962	1,006	1,100	1,100	1,100	1,100
Production (tons)	159,008	167,208	159,500	195,729	211,916	207,002
5-YEAR PLAN						
Area (ha)	126,406	127,670	128,948	130,237	131,540	132,855
Yield (kg/ha)	889	898	907	916	925	934
Production (tons)	112,381	114,654	116,963	119,305	121,683	124,095
RATIO OF 5-YEAR PLAN TO ANNUAL						
Area	0.76	0.77	0.89	0.73	0.68	0.71
Yield	0.92	0.89	0.82	0.83	0.84	0.85
Production	0.71	0.69	0.73	0.61	0.57	0.60

ANNEX TABLE 1.4: DATA ON FIVE-YEAR AND ANNUALLY PLANNED AREAS, YIELDS AND PRODUCTION OF STRATEGIC CROPS, 1995-2000

Irrigated Chickpeas

	1995	1996	1997	1998	1999	2,000
ANNUAL PLAN						
Area (ha)	82	82	0	160	170	650
Yield (kg/ha)	1,500	1,500	0	1,812	1,794	1,577
Production (tons)	123	123	0	290	305	1,025
5-YEAR PLAN						
Area (ha)	115	120	124	129	135	140
Yield (kg/ha)	1,687	1,721	1,755	1,790	1,826	1,863
Production (tons)	194	207	218	231	247	261
RATIO OF 5-YEAR PLAN TO ANNUAL						
Area	1.40	1.46	#DIV/0!	0.81	0.79	0.22
Yield	1.12	1.15	#DIV/0!	0.99	1.02	1.18
Production	1.58	1.68	#DIV/0!	0.80	0.81	0.25

Rainfed Chickpeas

	1995	1996	1997	1998	1999	2,000
ANNUAL PLAN						
Area (ha)	80886	84,187	89,100	110,774	111,000	107,090
Yield (kg/ha)	840	1,003	1,000	1,000	1,025	1,025
Production (tons)	67,944	89,100	89,100	110,774	113,775	109,767
5-YEAR PLAN						
Area (ha)	76,935	77,704	78,481	79,266	80,059	80,859
Yield (kg/ha)	619	625	631	638	644	651
Production (tons)	47,623	48,565	49,522	50,572	51,558	52,639
RATIO OF 5-YEAR PLAN TO ANNUAL						
Area	0.95	0.92	0.88	0.72	0.72	0.76
Yield	0.74	0.62	0.63	0.64	0.63	0.64
Production	0.70	0.55	0.56	0.46	0.45	0.48

Chickpeas

	1995	1996	1997	1998	1999	2000
ANNUAL PLAN						
Area (ha)	80,968	84,269	89,100	110,934	111,170	107,740
Yield (kg/ha)	841	1,059	1,000	1,001	1,026	1,028
Production (tons)	68,067	89,223	89,100	111,064	114,080	110,792
5-YEAR PLAN						
Area (ha)	77,050	77,824	78,605	79,395	80,194	80,999
Yield (kg/ha)	621	627	633	640	646	653
Production (tons)	47,817	48,772	49,739	50,803	51,805	52,900
RATIO OF 5-YEAR PLAN TO ANNUAL						
Area	0.95	0.92	0.88	0.72	0.72	0.75
Yield	0.74	0.59	0.63	0.64	0.63	0.64
Production	0.70	0.55	0.56	0.46	0.45	0.48

ANNEX TABLE 1.5: DATA ON FIVE-YEAR AND ANNUALLY PLANNED AREAS, YIELDS AND PRODUCTION OF STRATEGIC CROPS, 1995-2000

Cotton

	1995	1996	1997	1998	1999	2000
ANNUAL PLAN						
Area (ha)	200,750	214,766	230,000	240,000	255,200	228,204
Yield (kg/ha)	3,150	3,150	3,203	3,400	3,468	3,594
Production (tons)	632,363	676,513	736,690	816,000	885,034	820,165
5-YEAR PLAN						
Area (ha)	204,338	212,512	221,012	229,852	239,047	248,608
Yield (kg/ha)	3,005	3,065	3,126	3,189	3,253	3,318
Production (tons)	614,036	651,349	690,884	732,998	777,620	824,881
RATIO OF 5-YEAR PLAN TO ANNUAL						
Area	1.02	0.99	0.96	0.96	0.94	1.09
Yield	0.95	0.97	0.98	0.94	0.94	0.92
Production	0.97	0.96	0.94	0.90	0.88	1.01

ANNEX TABLE 1.6: DATA ON FIVE-YEAR AND ANNUALLY PLANNED AREAS, YIELDS AND PRODUCTION OF STRATEGIC CROPS, 1995-2000

Autumn Sugardbeet

	1995	1996	1997	1998	1999	2000
ANNUAL PLAN						
Area (ha)	14,696	13,500	12,550	16,675	15,200	15,100
Yield (kg/ha)	38,795	42,359	47,330	47,790	45,188	45,500
Production (tons)	570,131	571,847	593,992	796,898	686,858	687,050
5-YEAR PLAN						
Area (ha)	23,629	19,375	23,700	16,412	15,494	
Yield (kg/ha)	48,784	45,000	43,956	46,690	50,743	
Production (tons)	1,152,728	871,878	1,041,765	766,275	786,208	
RATIO OF 5-YEAR PLAN TO ANNUAL						
Area	1.61	1.44	1.89	0.98	1.02	
Yield	1.26	1.06	0.93	0.98	1.12	
Production	2.02	1.52	1.75	0.96	1.14	

Summer/Spring Sugarbeet

	1995	1996	1997	1998	1999	2000
ANNUAL PLAN						
Area (ha)	7,800	7,500	6,100	4,900	4,900	4,900
Yield (kg/ha)	40523	41,000	40,133	38,878	35,327	35,341
Production (tons)	316,079	307,500	244,811	190,502	173,102	173,171
5-YEAR PLAN						
Area (ha)	7,680	3,050	2,947	3,947	4,377	
Yield (kg/ha)	32,989	33,533	28,716	28,082	34,188	
Production (tons)	253,358	102,275	84,626	110,840	149,641	
RATIO OF 5-YEAR PLAN TO ANNUAL						
Area	0.98	0.41	0.48	0.81	0.89	
Yield	0.81	0.82	0.72	0.72	0.97	
Production	0.80	0.33	0.35	0.58	0.86	

Winter Sugar Beet

	1995	1996	1997	1998	1999	2000
ANNUAL PLAN						
Area (ha)	9,504	9,000	9,150	8,425	10,400	10,000
Yield (kg/ha)	41,810	44,516	48,217	49,089	46,168	50,180
Production (tons)	397,362	400,644	441,186	413,575	480,147	501,800
5-YEAR PLAN						
Area (ha)	23629	19375	23700	8304	10082	
Yield (kg/ha)	48,784	45,000	43,956	39,142	39,133	
Production (tons)	1,152,728	871,878	1,041,765	325,038	394,538	
RATIO OF 5-YEAR PLAN TO ANNUAL						
Area	2.49	2.15	2.59	0.99	0.97	
Yield	1.17	1.01	0.91	0.80	0.85	
Production	2.90	2.18	2.36	0.79	0.82	

Sugar Beet

	1995	1996	1997	1998	1999	2000
ANNUAL PLAN						
Area (ha)	32,000	30,000	27,800	30,000	30,500	30,000
Yield (kg/ha)	40,112	42,666	46,043	46,699	43,938	45,401
Production (tons)	1,283,573	1,279,991	1,279,988	1,400,975	1,340,107	1,362,021
5-YEAR PLAN						
Area (ha)	31,309	31,309	31,309	31,309	31,309	31,309
Yield (kg/ha)	42,471	43,320	44,187	45,071	45,972	46,891
Production (tons)	1,329,725	1,356,306	1,383,451	1,411,128	1,439,337	1,468,110
RATIO OF 5-YEAR PLAN TO ANNUAL						
Area	0.98	1.04	1.13	1.04	1.03	1.04
Yield	1.06	1.02	0.96	0.97	1.05	1.03
Production	1.04	1.06	1.08	1.01	1.07	1.08

ANNEX TABLE 1.7: DATA ON FIVE-YEAR AND ANNUALLY PLANNED AREAS, YIELDS AND PRODUCTION OF STRATEGIC CROPS, 1995-2000

Irrigated Tobacco

	1995	1996	1997	1998	1999	2000
ANNUAL PLAN						
Area (ha)	4,395	3,920	3,713	4,247	5,184	6,069
Yield (kg/ha)	1,909	1,911	1,947	1,944	1,978	2,020
Production (tons)	8,390	7,491	7,229	8,256	10,254	12,259
5-YEAR PLAN						
Area (ha)	4,397	5,113	4,531	4,892	5,853	
Yield (kg/ha)	3,380	2,497	2,684	2,507	2,482	
Production (tons)	14,861	12,766	12,163	12,266	14,525	
RATIO OF 5-YEAR PLAN TO ANNUAL						
Area	1.00	1.30	1.22	1.15	1.13	
Yield	1.77	1.31	1.38	1.29	1.25	
Production	1.77	1.70	1.68	1.49	1.42	

Rainfed Tobacco

	1995	1996	1997	1998	1999	2000
ANNUAL PLAN						
Area (ha)	10,110	10,110	10,800	12,861	12,890	13750
Yield (kg/ha)	873	865	861	873	872	848
Production (tons)	8,826	8,745	9,294	11,228	11,240	11,660
5-YEAR PLAN						
Area (ha)	9,445	9,089	10,434	10,130	10,310	
Yield (kg/ha)	900	1,027	1,032	1,071	987	
Production (tons)	8,500	9,338	10,768	10,849	10,175	
RATIO OF 5-YEAR PLAN TO ANNUAL						
Area	0.93	0.90	0.97	0.79	0.80	
Yield	1.03	1.19	1.20	1.23	1.13	
Production	0.96	1.07	1.16	0.97	0.91	

Tobacco

	1995	1996	1997	1998	1999	2000
ANNUAL PLAN						
Area (ha)	14,505	14,030	14,513	17,108	18,074	19,819
Yield (kg/ha)	1,187	1,157	1,139	1,139	1,189	1,207
Production (tons)	17,216	16,236	16,524	19,484	21,494	23,919
5-YEAR PLAN						
Area (ha)	13,842	13,842	13,842	13,842	13,842	13,842
Yield (kg/ha)	1,465	1,494	1,524	1,555	1,586	1617
Production (tons)	20,279	20,680	21,095	21,524	21,953	22,383
RATIO OF 5-YEAR PLAN TO ANNUAL						
Area	0.95	0.99	0.95	0.81	0.77	0.70
Yield	1.23	1.29	1.34	1.37	1.33	1.34
Production	1.18	1.27	1.28	1.10	1.02	0.94

ANNEX TABLE 2.1: DATA ON PLANNED AND ACHIEVED AREAS, YIELDS AND PRODUCTION OF STRATEGIC CROPS, 1989-1999

Irrigated Wheat

	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
PLANNED											
Area (ha)	243,624	267,823	300,000	332,000	431,859	516,660	591,336	607,116	666,560	696,500	714,800
Yield (kg/ha)	3,615	3,683	3,717	3,850	3,875	4,000	4,000	4,100	4,085	4,096	4,150
Production (tons)	880,701	986,392	1,115,100	1,278,200	1,673,454	2,066,640	2,365,344	2,489,176	2,722,898	2,852,864	2,966,420
ACTUAL											
Area (ha)	237,257	274,179	369,532	435,340	550,950	619,657	624,727	625,534	684,802	689,868	669,937
Yield (kg/ha)	2,473	3,338	3,340	3,981	3,956	3,610	3,906	3,700	2,950	3,593	3,083
Production (tons)	586,737	915,210	1,234,237	1,733,089	2,179,558	2,236,962	2,440,184	2,314,476	2,020,166	2,478,696	2,065,416
RATIO OF ACTUAL TO PLANNED											
Area	0.97	1.02	1.23	1.31	1.28	1.20	1.06	1.03	1.03	0.99	0.94
Yield	0.68	0.91	0.90	1.03	1.02	0.90	0.98	0.90	0.72	0.88	0.74
Production	0.67	0.93	1.11	1.36	1.30	1.08	1.03	0.93	0.74	0.87	0.70

Rainfed Wheat

	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
PLANNED											
Area (ha)	1,236,140	1,238,000	1,160,260	1,098,000	993,358	988,017	940,655	947,695	957,044	897,000	714,800
Yield (kg/ha)	1,483	1,522	1,491	1,559	1,597	1,612	1,630	1,800	1,803	1,830	2,000
Production (tons)	1,833,196	1,884,236	1,729,948	1,711,782	1,586,393	1,592,683	1,533,268	1,705,851	1,725,550	1,641,510	1,429,600
ACTUAL											
Area (ha)	1,002,651	1,066,418	899,101	945,414	834,184	933,708	1,018,916	993,654	1,075,997	1,031,544	933,083
Yield (kg/ha)	432	1,083	1,242	1,388	1,735	1,570	1,712	1,777	940	1,583	671
Production (tons)	433,145	1,154,931	1,116,683	1,312,235	1,447,309	1,465,922	1,744,384	1,765,723	1,011,437	1,632,934	626,099
RATIO OF ACTUAL TO PLANNED											
Area	0.81	0.86	0.77	0.86	0.84	0.95	1.08	1.05	1.12	1.15	1.31
Yield	0.29	0.71	0.83	0.89	1.09	0.97	1.05	0.99	0.52	0.87	0.34
Production	0.24	0.61	0.65	0.77	0.91	0.92	1.14	1.04	0.59	0.99	0.44

Wheat

	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
PLANNED											
Area (ha)	1,479,764	1,505,823	1,460,260	1,430,000	1,425,217	1,504,677	1,531,991	1,554,811	1,623,604	1,593,500	1,429,600
Yield (kg/ha)	1,834	1,906	1,948	2,091	2,287	2,432	2,545	2,698	2,740	2,820	3,075
Production (tons)	2,713,896	2,870,628	2,845,048	2,989,982	3,259,846	3,659,323	3,898,612	4,195,027	4,448,448	4,494,374	4,396,020
ACTUAL											
Area (ha)	1,239,908	1,340,597	1,268,633	1,380,754	1,385,134	1,553,365	1,643,643	1,619,188	1,760,799	1,721,412	1,603,020
Yield (kg/ha)	823	1,544	1,853	2,206	2,618	2,384	2,546	2,520	1,722	2,389	1,679
Production (tons)	1,019,882	2,070,140	2,350,920	3,045,323	3,626,867	3,702,883	4,184,568	4,080,199	3,031,603	4,111,630	2,691,514
RATIO OF ACTUAL TO PLANNED											
Area	0.84	0.89	0.87	0.97	0.97	1.03	1.07	1.04	1.08	1.08	1.12
Yield	0.45	0.81	0.95	1.05	1.14	0.98	1.00	0.93	0.63	0.85	0.55
Production	0.38	0.72	0.83	1.02	1.11	1.01	1.07	0.97	0.68	0.91	0.61

ANNEX TABLE 2.2: DATA ON PLANNED AND ACHIEVED AREAS, YIELDS AND PRODUCTION OF STRATEGIC CROPS, 1989-1999

Irrigated Barley

	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
PLANNED											
Area (ha)	3,422	4,624	6,530	7,000	6,902	5,558	5,762	4,859	2,776	3,500	3,932
Yield (kg/ha)	3,000	2,754	2,635	3,000	2,905	3,053	3,047	3,100	2,264	2,230	2,257
Production (tons)	10,266	12,734	17,207	21,000	20,050	16,969	17,557	15,063	6,285	7,805	8,875
ACTUAL											
Area (ha)	16,086	4,581	11,155	14,934	8,298	8,735	8,361	5,831	3,741	3,906	5,266
Yield (kg/ha)	1,094	2,257	1,844	2,101	3,062	1,782	2,189	2,896	2,365	2,999	2,187
Production (tons)	17,598	10,339	20,570	31,376	25,408	15,566	18,302	16,887	8,847	11,714	11,517
RATIO OF ACTUAL TO PLANNED											
Area	4.70	0.99	1.71	2.13	1.20	1.57	1.45	1.20	1.35	1.12	1.34
Yield	0.36	0.82	0.70	0.70	1.05	0.58	0.72	0.93	1.04	1.34	0.97
Production	1.71	0.81	1.20	1.49	1.27	0.92	1.04	1.12	1.41	1.50	1.30

Rainfed barley

	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
PLANNED											
Area (ha)	2,736,692	2,537,140	2,281,142	2,414,000	1,872,612	1,682,240	1,657,065	1,545,217	1,624,000	1,490,998	1,430,000
Yield (kg/ha)	903	889	899	900	1,068	948	958	1,000	1,013	1,036	1,040
Production (tons)	2,471,233	2,255,517	2,050,747	2,172,600	1,999,950	1,594,764	1,587,468	1,545,217	1,645,112	1,544,674	1,487,200
ACTUAL											
Area (ha)	2,875,641	2,724,775	2,221,968	2,251,518	2,160,579	1,885,320	1,954,888	1,543,980	1,568,452	1,538,716	1,408,961
Yield (kg/ha)	88	307	441	471	707	778	863	1060	621	557	294
Production (tons)	253,056	836,506	979,888	1,060,465	1,527,529	1,466,779	1,687,068	1,636,619	974,009	857,065	414,235
RATIO OF ACTUAL TO PLANNED											
Area	1.05	1.07	0.97	0.93	1.15	1.12	1.18	1.00	0.97	1.03	0.99
Yield	0.10	0.35	0.49	0.52	0.66	0.82	0.90	1.06	0.61	0.54	0.28
Production	0.10	0.37	0.48	0.49	0.76	0.92	1.06	1.06	0.59	0.55	0.28

Barley

	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
PLANNED											
Area (ha)	2,740,114	2,541,764	2,287,672	2,421,000	1,879,514	1,687,798	1,662,827	1,550,076	1,626,776	1,494,498	1,433,932
Yield (kg/ha)	906	892	904	906	1,075	955	965	1,007	1,015	1,039	1,043
Production (tons)	2,481,499	2,268,252	2,067,953	2,193,600	2,020,000	1,611,732	1,605,025	1,560,280	1,651,397	1,552,479	1,496,075
ACTUAL											
Area (ha)	2,891,727	2,729,356	2,233,123	2,266,452	2,168,877	1,894,055	1,963,249	1,549,811	1,572,193	1,542,622	1,414,227
Yield (kg/ha)	94	310	448	482	716	783	869	1,067	625	563	301
Production (tons)	270,654	846,845	1,000,458	1,091,841	1,552,938	1,482,345	1,705,371	1,653,505	982,856	868,779	425,751
RATIO OF ACTUAL TO PLANNED											
Area	1.06	1.07	0.98	0.94	1.15	1.12	1.18	1.00	0.97	1.03	0.99
Yield	0.10	0.35	0.50	0.53	0.67	0.82	0.90	1.06	0.62	0.54	0.29
Production	0.11	0.37	0.48	0.50	0.77	0.92	1.06	1.06	0.60	0.56	0.28

ANNEX TABLE 2.3: DATA ON PLANNED AND ACHIEVED AREAS, YIELDS AND PRODUCTION OF STRATEGIC CROPS, 1989-1999

Irrigated Lentils

	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
PLANNED											
Area (ha)	1,411	975	851	1,600	2,205	2,540	3,166	1,848	0	0	0
Yield (kg/ha)	1,320	1,464	1,495	1,350	1,482	1,432	1,403	1,500	0	0	0
Production (tons)	1,863	1,427	1,272	2,160	3,268	3,637	4,442	2,772	0	0	0
ACTUAL											
Area (ha)	1,952	939	452	83	116	313	11	116	1	94	214
Yield (kg/ha)	800	1,496	819	1,735	1,060	1,495	1,727	1,707	1,000	1,085	1,000
Production (tons)	1,562	1,405	370	144	123	468	19	198	1	102	214
RATIO OF ACTUAL TO PLANNED											
Area	1.38	0.96	0.53	0.05	0.05	0.12	0.00	0.06			
Yield	0.61	1.02	0.55	1.29	0.72	1.04	1.23	1.14			
Production	0.84	0.98	0.29	0.07	0.04	0.13	0.00	0.07			

Rainfed Lentils

	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
PLANNED											
Area (ha)	151,207	150,000	157,217	155,012	175,000	172,385	162,189	164,436	145,000	177,935	192,651
Yield (kg/ha)	940	950	950	950	957	923	953	1,000	1,100	1,100	1,100
Production (tons)	142,135	142,500	149,356	147,261	167,475	159,111	154,566	164,436	159,500	195,729	211,916
ACTUAL											
Area (ha)	186,312	130,307	82,071	87,825	104,445	117,832	126,395	140,738	120,299	142,555	147,427
Yield (kg/ha)	335	831	600	850	910	984	1,167	1,076	728	1,080	293
Production (tons)	62,415	108,285	49,243	74,651	95,045	115,947	147,503	151,434	87,578	153,959	43,196
RATIO OF ACTUAL TO PLANNED											
Area	1.23	0.87	0.52	0.57	0.60	0.68	0.78	0.86	0.83	0.80	0.77
Yield	0.36	0.87	0.63	0.89	0.95	1.07	1.22	1.08	0.66	0.98	0.27
Production	0.44	0.76	0.33	0.51	0.57	0.73	0.95	0.92	0.55	0.79	0.20

Lentils

	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
PLANNED											
Area (ha)	152,618	150,975	158,068	156,612	177,205	174,925	165,355	166,284	145,000	177,935	192,651
Yield (kg/ha)	944	953	953	954	964	930	962	1,006	1,100	1,100	1,100
Production (tons)	143,997	143,927	150,628	149,421	170,743	162,749	159,008	167,208	159,500	195,729	211,916
ACTUAL											
Area (ha)	188,264	131,246	82,523	87,908	104,561	118,145	126,406	140,854	120,300	142,649	147,641
Yield (kg/ha)	340	836	601	851	910	985	1,167	1,077	728	1,080	294
Production (tons)	63,976	109,690	49,613	74,795	95,168	116,415	147,522	151,632	87,579	154,061	43,410
RATIO OF ACTUAL TO PLANNED											
Area	1.23	0.87	0.52	0.56	0.59	0.68	0.76	0.85	0.83	0.80	0.77
Yield	0.36	0.88	0.63	0.89	0.94	1.06	1.21	1.07	0.66	0.98	0.27
Production	0.44	0.76	0.33	0.50	0.56	0.72	0.93	0.91	0.55	0.79	0.20

ANNEX TABLE 2.4: DATA ON PLANNED AND ACHIEVED AREAS, YIELDS AND PRODUCTION OF STRATEGIC CROPS, 1989-1999

Irrigated Chickpeas

	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
PLANNED											
Area (ha)	129	100	500	66	0	90	82	82	0	160	170
Yield (kg/ha)	1,790	1,970	2,000	1,500	0	1,500	1,500	1,500	0	1,812	1,794
Production (tons)	231	197	1,000	99	0	135	123	123	0	290	305
ACTUAL											
Area (ha)	126	64	603	249	107	184	115	169	212	153	218
Yield (kg/ha)	1,000	594	1,552	1,884	2,000	1,402	1,487	1,645	1,264	1,967	1,573
Production (tons)	126	38	936	469	214	258	171	278	268	301	343
RATIO OF ACTUAL TO PLANNED											
Area	0.98	0.64	1.21	3.77	#DIV/0!	2.04	1.40	2.06	#DIV/0!	0.96	1.28
Yield	0.56	0.30	0.78	1.26	#DIV/0!	0.93	0.99	1.10	#DIV/0!	1.09	0.88
Production	0.55	0.19	0.94	4.74	#DIV/0!	1.91	1.39	2.26	#DIV/0!	1.04	1.12

Rainfed Chickpeas

	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
PLANNED											
Area (ha)	77,684	84,000	79,674	80,000	84,850	77,757	80886	84,187	89,100	110,774	111,000
Yield (kg/ha)	900	855	855	855	854	850	840	1,003	1,000	1,000	1,025
Production (tons)	69,916	71,820	68,121	68,400	72,462	66,093	67,944	89,100	89,100	110,774	113,775
ACTUAL											
Area (ha)	33,532	69,648	42,838	81,903	80,224	48,836	76,935	66,291	94,251	107,859	50,426
Yield (kg/ha)	393	520	622	895	685	511	693	686	622	782	566
Production (tons)	13,178	36,217	26,645	73,303	54,953	24,955	53,316	45,476	58,624	84,346	28,541
RATIO OF ACTUAL TO PLANNED											
Area	0.43	0.83	0.54	1.02	0.95	0.63	0.95	0.79	1.06	0.97	0.45
Yield	0.44	0.61	0.73	1.05	0.80	0.60	0.83	0.68	0.62	0.78	0.55
Production	0.19	0.50	0.39	1.07	0.76	0.38	0.78	0.51	0.66	0.76	0.25

Chickpeas

	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
PLANNED											
Area (ha)	77,813	84,100	80,174	80,066	84,850	77,847	80,968	84,269	89,100	110,934	111,170
Yield (kg/ha)	901	856	862	856	854	851	841	1,059	1,000	1,001	1,026
Production (tons)	70,147	72,017	69,121	68,499	72,462	66,228	68,067	89,223	89,100	111,064	114,080
ACTUAL											
Area (ha)	33,658	69,712	43,441	82,152	80,331	49,020	77,050	66,460	94,463	108,012	50,644
Yield (kg/ha)	395	520	635	898	687	514	694	688	623	784	570
Production (tons)	13,304	36,255	27,581	73,772	55,167	25,213	53,487	45,754	58,892	84,647	28,884
RATIO OF ACTUAL TO PLANNED											
Area	0.43	0.83	0.54	1.03	0.95	0.63	0.95	0.79	1.06	0.97	0.46
Yield	0.44	0.61	0.74	1.05	0.80	0.60	0.83	0.65	0.62	0.78	0.56
Production	0.19	0.50	0.40	1.08	0.76	0.38	0.79	0.51	0.66	0.76	0.25

ANNEX TABLE 2.5: DATA ON PLANNED AND ACHIEVED AREAS, YIELDS AND PRODUCTION OF STRATEGIC CROPS, 1989-1999

Cotton

	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
PLANNED											
Area (ha)	169,883	174,000	173,000	178,000	194,000	202,850	200,750	214,766	230,000	240,000	255,200
Yield (kg/ha)	3,044	3,034	2,800	2,896	3,100	3,150	3,150	3,150	3,203	3,400	3,468
Production (tons)	517,124	527,916	484,400	515,488	601,400	638,978	632,363	676,513	736,690	816,000	885,034
ACTUAL											
Area (ha)	158,050	156,358	170,441	211,843	196,475	189,412	204,338	219,500	250,600	274,585	243,835
Yield (kg/ha)	2,725	2,822	2,357	3,251	3,252	2,827	2,937	3,462	4,179	3,707	3,798
Production (tons)	430,686	441,242	401,729	688,702	638,937	535,468	600,141	759,909	1,047,257	1,017,887	926,096
RATIO OF ACTUAL TO PLANNED											
Area	0.93	0.90	0.99	1.19	1.01	0.93	1.02	1.02	1.09	1.14	0.96
Yield	0.90	0.93	0.84	1.12	1.05	0.90	0.93	1.10	1.30	1.09	1.10
Production	0.83	0.84	0.83	1.34	1.06	0.84	0.95	1.12	1.42	1.25	1.05

ANNEX TABLE 2.6: DATA ON PLANNED AND ACHIEVED AREAS, YIELDS AND PRODUCTION OF STRATEGIC CROPS,1989-1999

Autumn Sugarbeet

	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
PLANNED											
Area (ha)	15,579	15,370	16,267	13,850	13,850	14,900	14,696	13,500	12,550	16,675	15,200
Yield (kg/ha)	38,500	38,500	38,968	37,192	39,942	39,185	38,795	42,359	47,330	47,790	45,188
Production (tons)	599,792	591,745	633,892	515,109	553,197	583,857	570,131	571,847	593,992	796,898	686,858
ACTUAL											
Area (ha)	12,133	16,977	15,492	19,611	22,681	23,051	23,629	19,375	23,700	16,412	15,494
Yield (kg/ha)	18,350	18,843	33,435	41,788	36,491	44,019	48,784	45,000	43,956	46,690	50,743
Production (tons)	222,638	319,899	517,975	819,498	827,663	1,014,681	1,152,728	871,878	1,041,765	766,275	786,208
RATIO OF ACTUAL TO PLANNED											
Area	0.78	1.10	0.95	1.42	1.64	1.55	1.61	1.44	1.89	0.98	1.02
Yield	0.48	0.49	0.86	1.12	0.91	1.12	1.26	1.06	0.93	0.98	1.12
Production	0.37	0.54	0.82	1.59	1.50	1.74	2.02	1.52	1.75	0.96	1.14

Summer/Spring Sugar Beet

	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
PLANNED											
Area (ha)	4,891	4,727	4,731	6,300	7,400	8,100	7,800	7,500	6,100	4,900	4,900
Yield (kg/ha)	38,500	38,500	38,500	40,634	41,514	40,333	40523	41,000	40,133	38,878	35,327
Production (tons)	188,304	181,990	182,144	255,994	307,204	326,697	316,079	307,500	244,811	190,502	173,102
ACTUAL											
Area (ha)	7,904	4,467	4,197	10,306	9,176	10,408	7,680	3,050	2,947	3,947	4,377
Yield (kg/ha)	20,443	22,804	32,066	52,922	44,583	42,013	32,989	33,533	28,716	28,082	34,188
Production (tons)	161,582	101,866	134,579	545,419	409,095	437,267	253,358	102,275	84,626	110,840	149,641
RATIO OF ACTUAL TO PLANNED											
Area	1.62	0.94	0.89	1.64	1.24	1.28	0.98	0.41	0.48	0.81	0.89
Yield	0.53	0.59	0.83	1.30	1.07	1.04	0.81	0.82	0.72	0.72	0.97
Production	0.86	0.56	0.74	2.13	1.33	1.34	0.80	0.33	0.35	0.58	0.86

Winter Sugar Beet

	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
PLANNED											
Area (ha)	9,822	9,903	9,680	15,050	11,638	10,504	9,504	9,000	9,150	8,425	10,400
Yield (kg/ha)	38,500	38,500	38,990	38,810	39,409	42,495	41,810	44,516	48,217	49,089	46,168
Production (tons)	378,147	381,266	377,423	584,091	458,642	446,367	397,362	400,644	441,186	413,575	480,147
ACTUAL											
Area (ha)	12,133	16977	15492	19611	22681	23051	23629	19375	23700	8304	10082
Yield (kg/ha)	18,350	18,843	33,435	41,788	36,491	44,019	48,784	45,000	43,956	39,142	39,133
Production (tons)	222,638	319,899	517,975	819,498	827,663	1,014,680	1,152,728	871,878	1,041,765	325,038	394,538
RATIO OF ACTUAL TO PLANNED											
Area	1.24	1.71	1.60	1.30	1.95	2.19	2.49	2.15	2.59	0.99	0.97
Yield	0.48	0.49	0.86	1.08	0.93	1.04	1.17	1.01	0.91	0.80	0.85
Production	0.59	0.84	1.37	1.40	1.80	2.27	2.90	2.18	2.36	0.79	0.82

Sugarbeet

	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
PLANNED											
Area (ha)	30,292	30,000	30,678	35,200	32,888	33,504	32,000	30,000	27,800	30,000	30,500
Yield (kg/ha)	38,500	38,500	38,903	38,500	40,107	40,500	40,112	42,666	46,043	46,699	43,938
Production (tons)	1,166,242	1,155,000	1,193,459	1,355,194	1,319,042	1,356,921	1,283,573	1,279,991	1,279,988	1,400,975	1,340,107
ACTUAL											
Area (ha)	32,170	38,421	35,181	49,528	54,538	56,510	54,938	41,800	50,347	28,663	29,953
Yield (kg/ha)	18,864	19,304	33,272	44,105	37,853	43,649	46,576	44,163	43,064	41,942	44,416
Production (tons)	606,858	741,664	1,170,529	2,184,415	2,064,421	2,466,628	2,558,814	1,846,031	2,168,156	1,202,153	1,330,387
RATIO OF ACTUAL TO PLANNED											
Area	1.06	1.28	1.15	1.41	1.66	1.69	1.72	1.39	1.81	0.96	0.98
Yield	0.49	0.50	0.86	1.15	0.94	1.08	1.16	1.04	0.94	0.90	1.01
Production	0.52	0.64	0.98	1.61	1.57	1.82	1.99	1.44	1.69	0.86	0.99

ANNEX TABLE 2.7: DATA ON PLANNED AND ACHIEVED AREAS, YIELDS AND PRODUCTION OF STRATEGIC CROPS, 1989-1999

Irrigated Tobacco

	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
PLANNED											
Area (ha)	5,050	4,150	4,200	3,800	3,150	3,670	4,395	3,920	3,713	4,247	5,184
Yield (kg/ha)	1,819	1,907	1,892	1,898	2,179	2,283	1,909	1,911	1,947	1,944	1,978
Production (tons)	9,186	7,914	7,946	7,212	6,864	8,379	8,390	7,491	7,229	8,256	10,254
ACTUAL											
Area (ha)	3,595	2,881	3,449	4,597	3,134	3,273	4,397	5,113	4,531	4,892	5,853
Yield (kg/ha)	1,870	2,281	2,228	2,475	2,771	2,824	3,380	2,497	2,684	2,507	2,482
Production (tons)	6,721	6,571	7,683	11,379	8,684	9,242	14,861	12,766	12,163	12,266	14,525
RATIO OF ACTUAL TO PLANNED											
Area	0.71	0.69	0.82	1.21	0.99	0.89	1.00	1.30	1.22	1.15	1.13
Yield	1.03	1.20	1.18	1.30	1.27	1.24	1.77	1.31	1.38	1.29	1.25
Production	0.73	0.83	0.97	1.58	1.27	1.10	1.77	1.70	1.68	1.49	1.42

Rainfed Tobacco

	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
PLANNED											
Area (ha)	11,074	11,350	11,450	11,460	8,900	9,200	10,110	10,110	10,800	12,861	12,890
Yield (kg/ha)	813	800	792	792	860	880	873	865	861	873	872
Production (tons)	9,003	9,080	9,068	9,076	7,654	8,096	8,826	8,745	9,294	11,228	11,240
ACTUAL											
Area (ha)	10,609	9,885	10,954	13,216	8,686	8,758	9,445	9,089	10,434	10,130	10,310
Yield (kg/ha)	597	662	778	923	682	577	900	1,027	1,032	1,071	987
Production (tons)	6,329	6,542	8,518	12,196	5,924	5,056	8,500	9,338	10,768	10,849	10,175
RATIO OF ACTUAL TO PLANNED											
Area	0.96	0.87	0.96	1.15	0.98	0.95	0.93	0.90	0.97	0.79	0.80
Yield	0.73	0.83	0.98	1.17	0.79	0.66	1.03	1.19	1.20	1.23	1.13
Production	0.70	0.72	0.94	1.34	0.77	0.62	0.96	1.07	1.16	0.97	0.91

Tobacco

	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
PLANNED											
Area (ha)	16,124	15,500	15,650	15,260	12,050	12,870	14,505	14,030	14,513	17,108	18,074
Yield (kg/ha)	1,128	1,096	1,087	1,067	1,205	1,280	1,187	1,157	1,139	1,139	1,189
Production (tons)	18,189	16,994	17,015	16,289	14,518	16,475	17,216	16,236	16,524	19,484	21,494
ACTUAL											
Area (ha)	14,204	12,766	14,403	17,813	11,820	12,031	13,842	14,202	14,965	15,022	16,163
Yield (kg/ha)	919	1,027	1,125	1,323	1,236	1,188	1,688	1,556	1,532	1,539	1,528
Production (tons)	13,050	13,113	16,201	23,575	14,608	14,298	23,361	22,104	22,931	23,115	24,700
RATIO OF ACTUAL TO PLANNED											
Area	0.88	0.82	0.92	1.17	0.98	0.93	0.95	1.01	1.03	0.88	0.89
Yield	0.81	0.94	1.03	1.24	1.03	0.93	1.42	1.34	1.35	1.35	1.29
Production	0.72	0.77	0.95	1.45	1.01	0.87	1.36	1.36	1.39	1.19	1.15

ANNEX TABLE 3.1: IMPORT PARITY PRICE STRUCTURE FOR SOFT WHEAT, FLOUR AND STANDARI

IMPORT PARITY PRICE STRUCTURE TO RETAIL IN DAMASCUS	Parity	Actual	Difference between actual and parity	*Ratio of actual to parity*
Soft wheat fob ex-W.Europe US$/ton	*114.63*			
		(SP per ton)		
Soft wheat fob ex-W.Europe SP/ton	5,732			
Transport W.Europe to Latakia/Tartous	900			
CIF Latakia/Tartous	6,632			
Offloading into port silo	3			
Port storage (4weeks)	30			
Losses (0.6%)	38			
Port fees	55			
Loading onto truck	3			
Onto-truck Latakia/Tartous	6,759			
Transport to GECIT silo in Damascus (348 km)	208			
Into-GES silo Damascus*	**6,968**			
Into-GES silo Damascus*	**6,968**			
Storage cost	43			
Losses(0.6%)	42			
Ex-GES silo Damascus	7,053			
Transport from GES silo to Damascus mill	20			
Into-mill Damascus	7,073	16,500	9,427	*2.33*
Milling cost (including loading and offloading)	679			
Cost of bags	160			
(Sale of bran)	-620			
Ex-mill flour bagged (per ton of wheat)	7,292			
Ex-mill flour bagged (per ton of flour)	9,348			
Transport to bakery	20			
Into-bakery standard flour bagged**	9,732	7,200	-2,532	*0.74*

Baking cost (including other ingredients)	2,294			
(Sale of second-hand bag)	-100			
Ex-bakery standard bread (per ton of flour)	11,827			
Ex-bakery standard bread (per ton of bread)	9,938			
Retail margin	570			
Retail standard bread per ton	10,508			
Retail standard bread per kg	*10.51*	*8.57*	*-1.94*	*0.82*

* Assumed main first joint marketing point at which imported soft wheat competes with that grown in Syrian s

** Based on flour with 60% soft wheat and 40% hard wheat. The hard wheat unit cost is based on the into-ba

D BREAD

Rate of Exchange (SP per US$) 50

	Parity	Actual	Difference between actual and parity	*Ratio of actual to parity*
	(SP per ton)			
IMPORT PARITY PRICE STRUCTURE TO FARM GATE AT AL HASSAKE				
Into-silo Damascus*	**6,968**			
Transport from Al Hassake to Damascus (642 km)	376			
Ex-Al Hassake silo	6,592			
Cost of storage	48			
Losses (0.6%)	40			
Into Al Hassake silo	6,504	10,800	4,296	*1.66*
Transport from farm to Al Hassake silo	6			
Farm-gate producer price	6,497			

surplus areas.
akery import parity price of Syrian hard wheat.

ANNEX TABLE 3.2: IMPORT PARITY PRICE STRUCTURE FOR SOFT WHEAT, FLOUR AND STANDARI

IMPORT PARITY PRICE STRUCTURE TO RETAIL IN DAMASCUS	Parity	Actual	Difference between actual and parity	*Ratio of actual to parity*
Soft wheat fob ex-W.Europe US$/ton	*114.63*			
		(SP per ton)		
Soft wheat fob ex-W.Europe SP/ton	5,732			
Transport W.Europe to Latakia/Tartous	900			
CIF Latakia/Tartous	6,632			
Offloading into port silo	3			
Port storage (4weeks)	30			
Losses (0.6%)	38			
Port fees	55			
Loading onto truck	3			
Onto-truck Latakia/Tartous	6,759			
Transport to GECIT silo in Damascus (348 km)	208			
Into-GES silo Damascus*	**6,968**			
Into-GES silo Damascus*	**6,968**			
Storage cost	43			
Losses(0.6%)	42			
Ex-GES silo Damascus	7,053			
Transport from GES silo to Damascus mill	20			
Into-mill Damascus	7,073	16,500	9,427	*2.33*
Milling cost (including loading and offloading)	679			
Cost of bags	160			
(Sale of bran)	-620			
Ex-mill flour bagged (per ton of wheat)	7,292			
Ex-mill flour bagged (per ton of flour)	9,348			
Transport to bakery	20			
Into-bakery standard flour bagged**	9,793	7,200	-2,593	*0.74*

Baking cost (including other ingredients)	2,294			
(Sale of second-hand bag)	-100			
Ex-bakery standard bread (per ton of flour)	11,887			
Ex-bakery standard bread (per ton of bread)	9,989			
Retail margin	570			
Retail standard bread per ton	10,559			
Retail standard bread per kg	*10.56*	*8.57*	*-1.99*	*0.81*

* Assumed main first joint marketing point at which imported soft wheat competes with that grown in Syrian s

** Based on flour with 60% soft wheat and 40% hard wheat. The hard wheat unit cost is based on the into-ba

D BREAD

Rate of Exchange (SP per US$) 50

	Parity	Actual	Difference between actual and parity	*Ratio of actual to parity*
	(SP per ton)			
IMPORT PARITY PRICE STRUCTURE TO FARM GATE AT AL HASSAKE				
Into-silo Damascus*	**6,968**			
Transport from Al Hassake to Damascus (642 km)	376			
Ex-Al Hassake silo	6,592			
Cost of storage	48			
Losses (0.6%)	40			
Into Al Hassake silo	6,504	10,800	4,296	*1.66*
Transport from farm to Al Hassake silo	6			
Farm-gate producer price	6,497			

surplus areas.
akery export parity price of Syrian hard wheat.

ANNEX TABLE 3.3: IMPORT PARITY PRICE STRUCTURE FOR HARD WHEAT, FLOUR AND STANDAR

IMPORT PARITY PRICE STRUCTURE TO RETAIL IN DAMASCUS	Parity	Actual	Difference between actual and parity	*Ratio of actual to parity*
Hard wheat fob ex-Gulf US$/ton	*131.75*			
		(SP per ton)		
Hard wheat fob ex-Gulf SP/ton	6,588			
Transport US Gulf to Latakia/Tartous	750			
CIF Latakia/Tartous	7,338			
Offloading into port silo	3			
Port storage (4weeks)	30			
Losses (0.6%)	38			
Port fees	55			
Loading onto truck	3			
Onto-truck Latakia/Tartous	7,465			
Transport to silo in Damascus (348 km)	208			
Into-silo Damascus*	**7,674**			
Into-silo Damascus*	**7,674**			
Storage cost	43			
Losses(0.6%)	46			
Ex-silo Damascus	7,763			
Transport from silo to Damascus mill	20			
Into-mill Damascus	7,783	16,500	8,717	*2.12*
Milling cost (including loading and offloading)	679			
Cost of bags	160			
(Sale of bran)	-620			
Ex-mill flour bagged (per ton of wheat)	8,002			
Ex-mill flour bagged (per ton of flour)	10,259			
Transport to bakery	20			
Into-bakery standard flour bagged**	9,732	7,200	-2,532	*0.74*

Baking cost (including other ingredients)	2,294			
(Sale of second-hand bag)	-100			
Ex-bakery standard bread (per ton of flour)	11,827			
Ex-bakery standard bread (per ton of bread)	9,938			
Retail margin	570			
Retail standard bread per ton	10,508			
Retail standard bread per kg	*10.51*	*8.57*	*-1.94*	*0.82*

* Assumed main first joint marketing point at which imported hard wheat competes with that grown in Syrian surplus area

** Based on flour with 60% soft wheat and 40% hard wheat. The soft wheat unit cost is based on the into-bakery import pa

:D BREAD

Rate of Exchange (SP per US$) 50

	Parity	Actual	Difference between actual and parity	*Ratio of actual to parity*
	(SP per ton)			
IMPORT PARITY PRICE STRUCTURE TO FARM GATE AT AL HASSAKE				
Into-silo Damascus*	**7,674**			
Transport from Al Hassake to Damascus (642 km)	376			
Ex-Al Hassake silo	7,298			
Cost of storage	48			
Losses (0.6%)	44			
Into Al Hassake silo	7,206	11,800	4,594	*1.64*
Transport from farm to Al Hassake silo	6			
Farm-gate producer price	7,199			

s, and that domestic wheat would not sell at a premium over imported hard wheat in the Syrian marke
arity price of Syrian soft wheat.

ANNEX TABLE 3.4: EXPORT PARITY PRICE STRUCTURE FOR HARD WHEAT, FLOUR AND STANDARD

EXPORT PARITY PRICE STRUCTURE TO RETAIL IN DAMASCUS	Parity	Actual	Difference between actual and parity	*Ratio of actual to parity*
Hard wheat cif Jordan US$/ton+	*156.75*			
Hard wheat cif Jordan SP/ton*	7,838			
Clearing and other costs at the Jordan border	250			
Transport from Al Hassake to Jordan border (750km)	428			
Ex-silo Al Hassake*	**7,160**			
Ex-silo Al Hassake*	**7,160**			
Transport from Al Hassake to Damascus (642km)	376			
Into-silo Damascus	**7,536**			
Storage cost	43			
Losses(0.6%)	0			
Ex-silo Damascus	7,579			
Transport from silo to Damascus mill	20			
Into-mill Damascus	7,599	17,520	9,921	*2.31*
Milling cost (including loading and offloading)	679			
Cost of bags	160			
(Sale of bran)	-620			
Ex-mill flour bagged (per ton of wheat)	7,818			
Ex-mill flour bagged (per ton of flour)	10,023			
Transport to bakery	20			
Into-bakery standard flour bagged**	9,638	7,200	-2,438	*0.75*
Baking cost (including other ingredients)	2,294			
(Sale of second-hand bag)	-100			
Ex-bakery standard bread (per ton of flour)	11,732			
Ex-bakery standard bread (per ton of bread)	9,859			
Retail margin	570			
Retail standard bread per ton	10,429			

Retail standard bread per kg	*10.43*	*8.57*	*-1.86*	*0.82*

+ Assumed that Syrian hard wheat would fetch a US$10 per ton quality-based premium above the CIF Jordon p
* Assumed main last joint marketing point at which exported and domestically consumed hard wheat compete.
** Based on flour with 60% soft wheat and 40% hard wheat. The soft wheat unit cost is based on the into-bake

) BREAD

Rate of Exchange (SP per US$) 50

	Parity	Actual	Difference between actual and parity	*Ratio of actual to parity*
EXPORT PARITY PRICE STRUCTURE TO THE FARM GATE AT AL HASSAKE				
Ex-silo Al Hassake*	**7,160**			
Cost of storage	48			
Losses (0.6%)	43			
Into-Al Hassake silo	7,069	11,800	4,731	*1.67*
Transport from farm to Al Hassake silo	6			
Farm-gate producer price of soft wheat	7,062			

price of US No. 2 Hard Winter wheat.

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ery import parity price of Syrian soft wheat.

ANNEX TABLE 3.5: IMPORT PARITY PRICE STRUCTURE FOR BARLEY

Rate of Exchange (SP per US$) 50

	Parity	Official	Difference between official and parity	*Ratio of official to parity*
	(SP per ton)			
CIF Latakia/Tartous (US$113)	5,650			
Cost from CIF to onto truck (excluding government fees)	530			
Importers profit (3%)	185			
Onto-truck sale to domestic trader Latakia	6,365			
Transport from Latakia to Al Hassake via Aleppo	407			
Into trader's store Al Hassake	6,773			
Storage cost	43			
Losses(0.006)	41			
Trader's profit	150			
Ex-store imported barley price to livestock farmer	7,006			
Quality premium on domestic barley (5%)	350			
Ex-store domestic barley price to livestock farmer	7,356	7,000	-356	*0.95*
Transport from farm to store	40			
Farm-gate producer price of barley	7,316	7,500	184	*1.03*

Source: Private traders.

ANNEX TABLE 3.6: EXPORT PARITY PRICE STRUCTURE FOR LENTILS, 1999/2000

Rate of Exchange (SP per US$)

EXPORT PARITY PRICE STRUCTURE TO RETAIL IN DAMASCUS	Parity	Official	Difference between official and parity	*Ratio of official to parity*
	(SP per ton)			
FOB Latkia US$*	490			
FOB Latkia SP/ton	24,500			
Stacking	17			
Port fees	6			
Offloading, stevedoring, etc.	86			
Delivered on truck Latakia	24,391			
Transport from Aleppo to Latakia	300			
Processed on truck factory gate, Aleppo (1.00 tons)	24,091			
Processed on truck factory gate, Aleppo (1.00 tons)	24,091			
Transport from Aleppo to Damascus	205			
Delivered on truck Damascus	24,296			
Storage, local movement	300			
Retail Margin (15%)	3,689			
Retail price in Damascus market	28,285	32,000	3,715	*1.13*

EXPORT PARITY PRICE STRUCTURE TO FARM GATE AT AL HASSAKE
Processed on truck factory gate, Aleppo (1.00 tons)
Processed on truck factory gate, Aleppo (.833 tons)+
Loading trucks
Cleaning and processing
(Sale of byproducts from processing (13%))
Offloading from truck
Into-processing factory Aleppo, unprocessed
Transport from Al Hassake to Aleppo
Assembly trader's costs and margin
Farm-gate producer price++

* For grade 2+2
* 10% cleaning loss, 20% additional loss in splitting (sold for animal feed).
+ based on a 7.5% cleaning loss, a 3.5% moisture gain during soaking and a further 13% splitting loss.
++ Note that this is close to the price of some SP18,000 per ton that traders report to have paid farmers in 2000.

Parity	Official	Difference between official and parity	*Ratio of official to parity*
	(SP per ton)		
24,091			
20,066			
42			
1,500			
-975			
50			
19,449			
400			
250			
18,799	16,000	-2,799	*0.85*

ANNEX TABLE 3.7: EXPORT PARITY PRICE STRUCTURE FOR CHICKPEAS, 1999/2000

Rate of Exchange (SP per US$) 50

EXPORT PARITY PRICE STRUCTURE TO RETAIL IN DAMASCUS	Parity	Official	Difference between official and parity	*Ratio of official to parity*
	(SP per ton)			
*FOB Latkia US$**	*670*			
FOB Latkia SP/ton	33,500			
Stacking	17			
Port fees	6			
Offloading, stevedoring, etc.	86			
Delivered on truck Latakia	33,391			
Transport from Aleppo to Latakia	205			
Processed on truck factory gate, Aleppo	33,186			
Processed on truck factory gate, Aleppo	33,186			
Transport from Aleppo to Damascus	300			
Delivered on truck Damascus	33,486			
Storage, local movement	300			
Retail Margin	5,068			
Retail price in Damascus market	38,854	38,000	-854	*0.98*

EXPORT PARITY PRICE STRUCTURE TO FARM GATE IN ALEPPO	Parity
Processed on truck factory gate, Aleppo	33,186
Processed on truck factory gate, Aleppo (0.90 tons)'*	*29,867*
Loading trucks	45
Cleaning and processing	620
Offloading from truck	50
Into-processing factory Aleppo, unprocessed	29,152
Transport from assembly point to Aleppo	50
Assembly trader's costs and margin	250
Farm-gate producer price	28,852

* Mixed 7,8 and 9mm grade.

** 10% cleaning loss; no byproducts.

Official	Difference between official and parity	*Ratio of official to parity*
(SP per ton)		
17,800	-11,052	*0.62*

ANNEX TABLE 3.8: EXPORT PARITY PRICE STRUCTURE FOR COTTON SEED AND COTTON FIBRE

Rate of Exchange (SP per US$): 50

	Parity	Actual	Difference between actual and parity	Ratio of actual to parity
		(SP per ton)		
Cotton fibre FOB Latakia S.P+	67,650			
Export agent's comission (1%)	677			
Cotton fibre FOB Latakia net of commission	66,974			
Export costs and charges	250			
Transport from Al Hassake ginnery to Latakia	470			
Cotton fibre ex-ginnery*	66,254	86,560	20,307	1.31
Ginning cost per kg of cotton fibre produced	3,424			
Realisation from sale of cotton seed	-14,223			
Interest on working capital**	2,755			
Into-ginnery 3.33 tons of seed cotton bagged	74,297			
Into-ginnery 1.0 tons of seed cotton bagged	22,291			
Into-CMO buying centre price of seed cotton to farmer	22,291	29,290	6,999	1.31

\+ Note that this FOB price is based on a SP50 per US$ market exchange rate rather than the official SP46 per US$ at which the CMO export earnings were converted in 1999/2000.

* The figure that appears in the 'actual' column is the mean 1999/2000 ex-ginnery price at which the CMO sold to domestic mills.

** 6 months at 7.5%

Note: It has been assumed that, under a free market, private sector unit costs of ginning, transporting and exporting would be similar to those incurred by the CMO, other than for the interest on working capital which has been reduced to reflect the lower outlay on acquiring cotton from farmers stemming from the lower, export-parity producer price.

ANNEX TABLE 3.9: IMPORT PARITY PRICE STRUCTURE FOR SUGAR BEET AND REFINED SUGAR

	Parity	Actual	Difference between actual and parity	*Ratio of actual to parity*
IMPORTED REFINED SUGAR				
*CIF Latakia/Tartous US$**	*271*	*248*		
CIF Latakia/Tartous	13,551			
Bank commission	271			
Interest	143			
Import licence	124			
Handling charges & transit	55			
General fees	69			
Administrative fees	454			
Losses (2.25%)	330			
Onto-truck Latakia/Tartous	14,996			
Transport to Damascus market	208			
Into-Damascus wholesaler++	**15,204**			
Into-Damascus wholesaler++	**15,204**			
Wholesale margin (3%)	456			
Into-Damascus retailer	15,660			
Retail margin (5%)	783			*Ratio*
Retail Price Damascus (open market)**	16,443	19,000	2,557	*1.16*

Retail Price Damascus (rationed)	16,443	7,000	-9,443	*0.43*

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* The actual price refers to imports by GFTOCF in August 2000. Private importers are assumed to be able to import at
the data in Table 5 to adjust to a mean unit value for the period January 1987 to June 2000.
** The actual open market consumer price is above import parity partly because imports of refined sugar are subject to a
+ Assumed that domestically produced refined would sell at a 10% discount below the price of imported refined at the w

Rate of Exchange (SP per US$): 50

	Parity	Actual	Difference between actual and parity	*Ratio of actual to parity*
(SP per ton)				
				Ratio
Into-Damascus wholesaler++	***15,204***			
DOMESTICALLY PRODUCED SUGAR				
Into-Damascus wholesaler+	**13,683**			
Transport from sugar mill to Damascus	250			

Ex-mill gate refined sugar	13,433	34,006	20,573	*2.53*
Processing cost	8,014			
(Sale of molasses)	-1,269			
(Sale of pulp)	-2,900			
Bags (21 per ton @ SP 34 per bag)	714			
Into-mill price of beet (refined sugar equivalent)	8,874			
Into-mill price of 11.9 tons of sugar beet	*8,874*			
Into-mill price of 1.0 ton of sugar beet	746	2,150	1,404	*2.88*
Transport from farm to mill (40km)	50			
Notional sugar beet price at the farm gate	696			

5% lower cost. The parity price figure takes account of this assumption and also uses

a duty of 15% per ton plus other small government specific levies.
wholesale level due to its lower quality.

ANNEX TABLE 4.2 : ESTIMATES OF THE PROFITABILITY OF PRODUCTION IN 1999 USING OFFICIAL COSTS, OFFICIAL AND ESTIMATED PER-HECTARE YIELDS, AND OFFICIAL PRODUCER PRICES

	Irrigated soft wheat	Rainfed hard wheat	Irrigated hard wheat	Barley	Lentils	Chickpeas	Cotton	Summer Sugar
Official producer price (SP per kg)	10.80	11.80	11.80	7.50	16.00	17.80	30.75	2.25
1989-99 mean annual national yield (kg/ha)								
Highest	2,960	1,589	4,380	1,067	1,167	898	4,179	45,623
Lowest	1,109	295	1,250	94	294	396	2,725	19,081
Mean	2,245	905	2,597	569	806	637	3,292	37,883
Official yield (kg/ha)								
1997	4,000	-	3,760	900	900	850	3,200	45,000
1998	4,000	1,150	3,760	800	900	850	3,400	45,000
1999	3,560	770	3,346	625	621	650	3,400	45,000
Official 1999 cost of production (SP/ha)								
Total	40,871	11,681	41,028	6,734	16,604	16,118	97,754	107,731
Total less land rental and interest adjustment	34,675	9,911	34,808	5,709	14,289	13,627	82,605	91,316
Unit cost of production* (SP per kg)								
With highest 1989-99 yield	11.71	6.24	7.95	5.35	12.24	15.18	19.76	2.00
With lowest 1989-99 yield	31.25	33.63	27.85	60.90	48.53	34.45	30.31	4.79
With mean 1989-99 yield	15.44	10.96	13.40	10.04	17.72	21.38	25.09	2.41
Profit/loss* (SP per kg)								
With highest yield	-0.91	5.56	3.85	2.15	3.76	2.62	10.99	0.25
With lowest yield	-20.45	-21.83	-16.05	-53.40	-32.53	-16.65	0.44	-2.54
With mean yield	-4.64	0.84	-1.60	-2.54	-1.72	-3.58	5.66	-0.16
Profit/loss* (SP per ha)								
With highest yield	-2,703	8,836	16,881	2,290	4,387	2,352	45,912	11,337
With lowest yield	-22,692	-6,434	-20,060	-5,006	-9,578	-6,586	1,188	-48,383
With mean yield	-10,425	764	-4,163	-1,444	-1,387	-2,284	18,637	-6,079
Unit cost of production* (SP per kg)								

With 1997 official yield	8.67	-	9.26	6.34	15.88	16.03	25.81	2.03
With 1998 official yield	8.67	8.62	9.26	7.14	15.88	16.03	24.30	2.03
With 1999 official yield	9.74	12.87	10.40	9.13	23.01	20.97	24.30	2.03
Profit/loss* (SP per kg)								
With 1997 official yield	2.13	-	2.54	1.16	0.12	1.77	4.94	0.22
With 1998 official yield	2.13	3.18	2.54	0.36	0.12	1.77	6.45	0.22
With 1999 official yield	1.06	-1.07	1.40	-1.63	-7.01	-3.17	6.45	0.22
Profit/loss* (SP per ha)								
With 1997 official yield	8,525	-	9,560	1,041	111	1,503	15,795	9,934
With 1998 official yield	8,525	3,659	9,560	291	111	1,503	21,945	9,934
With 1999 official yield	3,773	-825	4,675	-1,022	-4,353	-2,057	21,945	9,934

* Based on the official 1999 total cost of production less land rental and interest adjustment

ANNEX TABLE 4.2 : ESTIMATES OF THE PROFITABILITY OF PRODUCTION IN 1999 USING OFFICIAL COSTS, OFFICIAL AND ESTIMATED PER-HECTARE YIELDS AND PARITY PRICES

	Irrigated soft wheat	Rainfed hard wheat	Irrigated hard wheat	Barley	Lentils	Chickpeas	Cotton	Summer Sugar
Parity price (SP per kg)	6.50	7.20	7.20	7.32	18.80	28.85	22.29	0.75
1989-99 mean annual national yield (kg/ha)								
Highest	2,960	1,589	4,380	1,067	1,167	898	4,179	45,623
Lowest	1,109	295	1,250	94	294	396	2,725	19,081
Mean	2,245	905	2,597	569	806	637	3,292	37,883
Official yield (kg/ha)								
1997	4,000	-	3,760	900	900	850	3,200	45,000
1998	4,000	1,150	3,760	800	900	850	3,400	45,000
1999	3,560	770	3,346	625	621	650	3,400	45,000
Official 1999 cost of production (SP/ha)								
Total	40,871	11,681	41,028	6,734	16,604	16,118	97,754	107,731
Total less land rental and interest adjustment	34,675	9,911	34,808	5,709	14,289	13,627	82,605	91,316
Unit cost of production* (SP per kg)								
With highest 1989-99 yield	11.71	6.24	7.95	5.35	12.24	15.18	19.76	2.00
With lowest 1989-99 yield	31.25	33.63	27.85	60.90	48.53	34.45	30.31	4.79
With mean 1989-99 yield	15.44	10.96	13.40	10.04	17.72	21.38	25.09	2.41
Profit/loss* (SP per kg)								
With highest yield	-5.22	0.96	-0.75	1.96	6.56	13.67	2.53	-1.26
With lowest yield	-24.76	-26.43	-20.65	-53.59	-29.73	-5.60	-8.02	-4.04
With mean yield	-8.95	-3.76	-6.20	-2.72	1.08	7.47	-2.80	-1.66
Profit/loss* (SP per ha)								
With highest yield	-15,440	1,526	-3,273	2,094	7,654	12,275	10,560	-57,293
With lowest yield	-27,466	-7,790	-25,810	-5,023	-8,754	-2,214	-21,861	-77,087
With mean yield	-20,086	-3,398	-16,112	-1,549	870	4,759	-9,212	-63,066
Unit cost of production* (SP per kg)								

With 1997 official yield	8.67	-	9.26	6.34	15.88	16.03	25.81	2.03
With 1998 official yield	8.67	8.62	9.26	7.14	15.88	16.03	24.30	2.03
With 1999 official yield	9.74	12.87	10.40	9.13	23.01	20.97	24.30	2.03
Profit/loss* (SP per kg)								
With 1997 official yield	-2.17	-	-2.06	0.97	2.92	12.82	-3.52	-1.28
With 1998 official yield	-2.17	-1.42	-2.06	0.18	2.92	12.82	-2.00	-1.28
With 1999 official yield	-3.24	-5.67	-3.20	-1.82	-4.21	7.89	-2.00	-1.28
Profit/loss* (SP per ha)								
With 1997 official yield	-8,685	-	-7,739	875	2,631	10,897	-11,272	-57,758
With 1998 official yield	-8,685	-1,632	-7,739	144	2,631	10,897	-6,814	-57,758
With 1999 official yield	-11,544	-4,368	-10,720	-1,137	-2,614	5,127	-6,814	-57,758

* Source: Table 5.2. Note that hard wheat is valued at import parity.

** Based on the official 1999 total cost of production less land rental and interest adjustment

ANNEX TABLE 5.1
ESTIMATION OF THE LOSSES INCURRED BY THE GENERAL COMPANY FOR MILLS IN 1998/99

	Price/Unit Value (SP/ton)	Quantity (tons)	Cost/Value (SP billion)	Cost/Value (US$mill.@50)	% of GDP+
Into-mill cost of wheat	18,430	2,017,349	37.18	744	4.58
Processing cost++	219	2,017,349	0.44	9	0.05
Total GCM cost (wheat)	18,649		37.62	752	4.64
GCM revenue (flour)	7,200	1,573,532	11.33	227	1.40
GCM loss (wheat)**	13,033	2,017,349	26.29	526	3.24
GCM loss (flour)**	16,709	1,573,532	26.29	526	3.24

Note: Further smaller losses are made by GECPT, GCSILOS and GCBAKERIES.

* Flour quantity is based on a 78% extraction rate for standard flour.

** These losses result from the subsidisation of producers and consumers and for the fact that the price at which the General Company for Mills buys wheat from the General Establishment for Cereals contains the finance cost of maintaining national wheat stocks.

\+ Based on estimated 1999 GDP of SP 811,640,520,000.

++ Net of byproduct realisation.

ESTIMATION OF THE SUBSIDISATION OF WHEAT PRODUCERS AND CONSUMERS OF STANDARD FLOUR AND BREAD

	Price/Unit Value (SP/ton)	Quantity (tons)	Cost/Value (SP billion)	Cost/Value (US$mill.@50)	% of GDP+
Parity Producer Price*	6,044	2,017,349	12.19	244	1.50

Official Producer Price	11,400	2,017,349	23.00	460	2.83
Subsidy to Producer	5,356	2,017,349	10.80	216	1.33
BREAD					
Parity Consumer Price*	9,560	1,872,503	17.90	358	2.21
Official Consumer Price	8,500	1,872,503	15.92	318	1.96
Subsidy to Consumer	1,060	1,872,503	1.98	40	0.24
Total Subsidy			12.79	256	1.58

+ Based on estimated 1999 GDP of SP 811,640,520,000

* based on the import parity price models for hard and soft wheat in Annex Table ??, adjusted for 1999 import prices.

Note: The calculations in both tables are based on a 60:40 hard wheat:soft wheat combination.

ANNEX TABLE 5.2
ESTIMATION OF THE LOSSES INCURRED BY THE COTTON MARKETING ORGANISATION IN 1998/99

	Price/Unit Value (SP/ton)	Quantity (tons)	Cost/Value (SP billion)	Cost/Value (US$mill.@50)	% of GDP+
Into-ginnery cost of seed cotton	29,200	981,122	28.65	573	3.53
Cotton fibre					
Into-ginnery cost of seed cotton	94,194	304,148	28.65	573	
CMO costs to ex-ginnery	6,179	304,148	1.88	38	0.23
Byproduct realisation**	-15,140	304,148	-4.60	-92	
Total CMO cost	85,232	304,148	25.92	518	3.19
CMO ex-ginnery domestic sales	84,180	80,689	6.79	136	0.84
CMO loss on domestic sales	1,052	80,689	0.08	2	0.01
CMO export sales (ex-ginnery)	54,743	207,840	11.38	228	1.40
CMO loss on export sales	30,489	207,840	6.34	127	0.78
Total CMO loss		288,529	6.42	128	0.79

+ Based on estimated 1999 GDP of SP 811,640,520,000

ESTIMATION OF THE SUBSIDISATION OF SEED COTTON PRODUCERS AND THE TAXATION OF DOMESTIC CONSUMERS OF COTTON FIBRE

	Price/Unit Value (SP/ton)	Quantity (tons)	Cost/Value (SP billion)	Cost/Value (US$mill.@50)	% of GDP+

SEED COTTON					
Parity producer price*	19,128	981,122	18.77	375	2.31
Official producer price**	29,200	981,122	28.65	573	3.53
Subsidy to producer	10,072	981,122	9.88	198	1.22
COTTON FIBRE					
Parity ex-ginnery price*	55,710	80,689	4.50	90	0.55
Ex-ginnery price for domestic sales	84,180	80,689	6.79	136	0.84
Taxation of domestic buyers	28,470	80,689	2.30	46	0.28

+ Based on estimated 1999 GDP of SP 811,640,520,000

* Based on the export parity price model for cotton in Annex Table ??, adjusted for 1998/99 export prices.

** After taking account of quality discounts.

ANNEX TABLE 5.3
SUGAR : ESTIMATION OF GENERAL ESTABLISHMENT FOR CONSUMPTION LOSSES IN 1999

	Price/Unit Value (SP/ton)	Quantity (tons)	Cost/Value (SP billion)	Cost/Value (US mill.$@50)	% of GDP**
Into GEC cost of Syrian sugar	34,006	94,806	3.22	64.5	0.40
GEC distribution costs	2,720	94,806	0.26	5.2	0.03
Total GEC cost of Syrian sugar	36,726	94,806	3.48	69.6	0.43
GEC revenue from Syrian sugar	7,000	93,858	0.66	13.1	0.08
GEC loss on Syrian Sugar			2.82	56.5	0.35
Into GEC cost of imported sugar	11,079	190,000	2.10	42.1	0.26
GEC distribution costs	554	190,000	0.11	2.1	0.01
Total GEC cost of imported sugar	11,633	190,000	2.21	44.2	0.27
GEC revenue from imported sugar	7,000	188,100	1.32	26.3	0.16
GEC loss on imported sugar			0.89	17.9	0.11
GEC loss on all sugar			3.72	74.4	0.46

ESTIMATION OF THE SUBSIDISATION OF SUGAR BEET PRODUCERS AND CONSUMERS OF REFINED SUGAR IN 1999

	Price/Unit Value (SP/ton)	Quantity (tons)	Cost/Value (SP billion)	Cost/Value (US$ mill.@50)	% of GDP**
SUGAR BEET					

Parity Producer Price+	485	933,176	0.45	9.1	0.06
Official Producer Price*	2,150	933,176	2.01	40.1	0.25
Subsidy to Producer	1,665	933,176	1.55	31.1	0.19
REFINED SUGAR					
Parity Consumer Price+	12,718	284,806	3.62	72.4	0.45
Official Consumer Price	7,000	284,806	1.99	39.9	0.25
Subsidy to Consumer	5,718	284,806	1.63	32.6	0.20
Total Producer and Consumer Subsidy			3.18	63.6	0.39

* After taking account of quality discounts.

** Based on estimated 1999 GDP of SP 811,640,520,000

\+ based on the parity price models for sugar in Annex Table ??, adjusted for 1999 import prices.

COMPARISON OF OFFICIAL AND PARITY PRICES TO PRODUCERS

	Soft Wheat (Import)	Hard Wheat (Import)	Hard Wheat (Export)	Barley (Import)	Lentils (Export)	Chickpeas (Export)	Cotton (Export)	Sugar (Import)
Official Producer Price	10,800	11,800	11,800	7,500	16,000	17,800	29,290	2,150
Parity Producer Price	6,497	7,199	7,062	7,316	18,799	28,852	22,291	746
Ratio Official to Parity	1.66	1.64	1.67	1.03	0.85	0.62	1.31	2.88

NOTE THAT THIS TABLE IS NOT REQUIRED FOR THE REPORT SINCE IT HAS ALREADY BEEN READ INTO THE MAIN TEXT