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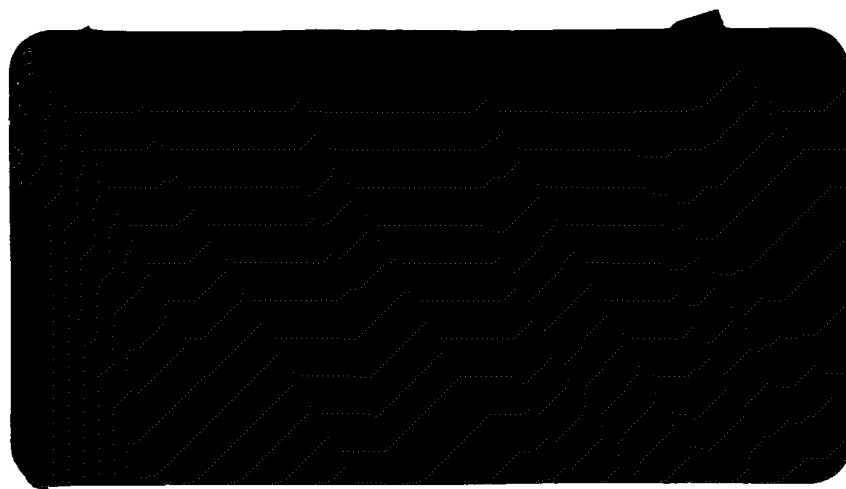
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No. 14

The Political Economy of Food Production and
Distribution in Egypt:
A Survey of Developments since 1973

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Summary

Growing concern in Egypt in recent years over the scale of food imports has resulted in the Government placing considerable stress on both raising productivity in the agricultural sector and the marketed surplus of foodgrains. To date, this policy has reaped limited rewards and the sharply declining trend in food self-sufficiency remains unmodified.

This paper surveys the problem of domestic food production shortfalls in the light of developments in the nature of government interventions in a range of market functions. Particular attention is paid to, on the one hand, demand side factors associated with a high growth rate through the last ten years and the system of food and energy subsidies set up since 1973 and, on the other hand, to the supply constraints existing in agriculture. At the same time, an attempt will be made to demonstrate that the current shift away from food crop production can largely be explained by State interventions in differential crop pricing and by parallel developments in domestic labour supply capacity in agriculture.

This paper originates from some of the preparatory work done for the ODI/Zagazig University joint research project on 'Employment and the Agricultural Labour Market in Egypt'. The more substantive work that will appear later will be based on a detailed, three-village sample survey in three Delta governorates, Sharkia, Minufia and Dakhalia. Particular focus will be placed on farm level labour use patterns and the impact of current agricultural price ratios and controls on cropping patterns and the choice of technology. This project is jointly funded by the Ford Foundation, Cairo and ODA, London.

1. Recent Food Production and Consumption Trends

Domestic food deficits and a sharply rising trend of basic food imports have become features common to the entire North African region, as also to the bulk of the economies of West Asia. While the scale of the problem is less marked than in the regions south of the Sahara, the trend in agricultural and food production, in particular, when deflated by the rate of population growth, has been universally negative. Food per caput trends in North Africa have been consistently downwards through the last decade, with an average decline of around 15 per cent.¹ In Egypt the rate of decline has been rather slacker. Nevertheless, it would appear that since 1975 the domestic food production index has fallen by around 6 per cent and the underlying trend remains downwards.

The notion of Egypt as a food deficitary economy sits uneasily alongside the characteristic drought parched, low productivity archetype that commonly figures in discussions of agricultural production in the Arab and African context. In fact, most of Egypt - some 97 per cent of its land area - is parched and the current population of around 45 million is supported on a cultivable area of less than 15.5 million hectares. Crudely put, this means that each square kilometre of workable land must theoretically support 1,365 persons. At present, it does not. However, even if the Egyptian economy is currently characterised by very high, and increasing, levels of urbanization and sluggish rates of growth for domestic agricultural output, it is not characterised by low productivity in the primary sector nor by a long-standing, quasi-structural food supply bottleneck.

The emergence of large scale food imports is a relatively recent phenomenon dating back to the early 1970s. Historically, the developed system of basin irrigation and intensive cropping has sustained high levels of land productivity, one consequence of which has been the very limited need for recourse to imported grains for domestic provisioning.² While productivity in Egyptian agriculture has displayed a consistent upward trend this has not been sufficient to match domestic demand in the last decade. Estimates of the scale of the decline in food self-sufficiency vary widely but it is generally argued that an aggregate

fall in the order of ten per cent has occurred over the last ten years.³ However, this has not led to any decline in the calorie intake across classes nor to a fall in domestic consumption levels. That this is the case is largely attributable to the role of international trade, food aid and a high rate of economic growth associated with the rapid expansion of external resources available to the economy post-1973. To these factors must be added the recent increase in foreign aid flows which currently amount to over 8 per cent of GNP.⁴ The present incapacity of the agricultural sector to provision an increasingly urbanised population - some 44 per cent of the total population can be classed as urban - is indicated in the fact that by 1981 the cost of food imports exceeded by some five times the sum of export revenues from the traditional staple, cotton and other agricultural exports. Of course, such a shift in the trading framework, reflecting a fall in the proportion of total demand for food domestically provided for, need not point to any fundamental constraint on the growth potential of the economy as a whole, at least in the short and medium term. Indeed, in the short term it clearly has not dampened the rate of economic activity.

Furthermore, a shift away from food self-sufficiency might simply reflect short-term production failures or, equally, shifts in the utilisation of agricultural resources that better correspond to perceived comparative advantage.

While it can be argued that the scale of deficit is a direct function of the overall rate of growth in the economy and the shifts in the structure of consumption engendered by that process, the latter two factors do not provide a satisfactory explanation. Fluctuations in output levels tend to be very low, given the security of the irrigation system and favourable climatic factors. Secondly, such shifts in land allocation that have occurred have tended to be the result of movements in domestic price ratios that have not reflected international price changes. This is closely linked to the pricing structures that operate in Egyptian agriculture.

The decline in domestic food self-sufficiency that emerged in the early 1970s is unlikely to be a short-term phenomenon. Secondly, it seems that compensations on the export side (at least in terms of agricultural

exports) will not be sufficient to offset costs generated by a growing dependence on food imports.⁶ This points to a need for estimating the likely implications of increasing food imports for sectoral investment programmes and - given the nature of government interventions - for agricultural pricing and subsidy policy. For if present rates of food substitution through trade are maintained in the context of the present mix of export commodities, the burden on the balance of payments is only likely to become even greater.

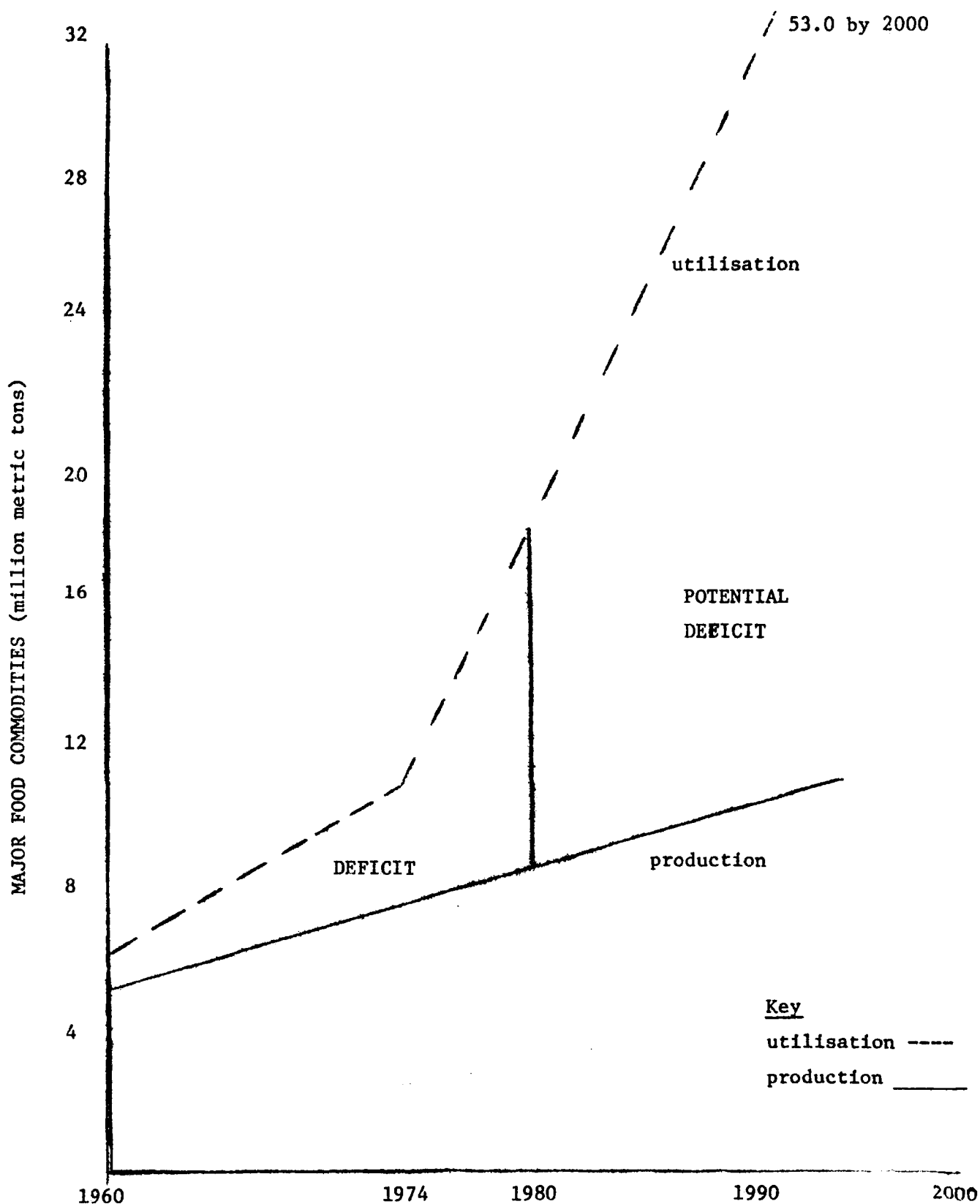
Taking the issue, at least initially, on a simple sectoral basis and leaving aside the crucial question of the distribution of food, it would seem that if current conditions are sustained the scale of deficit is likely to rise at a greatly expanded rate over the next two decades. (See figure 1). This acceleration will be the continuation of recent trends. Using a crude index of self-sufficiency, it is clear that for all major comestibles - bar rice, fruit and vegetables - there has been a significant decline in the supply relative to domestic demand over the last twenty years.⁷ While there has been some growth in the area and export volume of fruits and vegetables consequent on the relatively fast increase in world prices since the mid-1970s, the longer-term feasibility of such an export strategy looks less than secure with the prospect of EEC expansion southwards and closing markets.⁸ Likewise in the case of rice; supply has only just run ahead of domestic demand - resulting in significant cutbacks in the potentially exportable share.

Table 1: Self-sufficiency Index for Major Crops (%)

	Wheat	Lentils	Maize	Sugar	Red Meat	White Meat	Dairy Products	Fish
1960	70	92	94	114	95	100	93	95
1980	25	92	77	57	75	65	62	54

Source: Ministry of Agriculture; World Bank, Report 4136-Egt, 1983

The relative decline in various food crops has not however been mirrored with any precision in the actual composition of the enhanced value of food imports - reflecting shifts in the consumption structure. This is strongly associated with the subsidy and ration system operated by the government.



Production and Utilisation of Major Food Commodities
in Egypt, 1960-80 & Projections to year 2000

Source: Presidential Mission on Agricultural Development, April 1982

The upward trend in food imports is clearly indicated by the fact that in volume terms - taking 1970/72 as 100 - by 1978/80 the index for cereals stood at 450 and that for dairy products (cheese and butter) at 1808.⁹ Even in the case of meat where domestic output declined by only 20% between 1973/1980, the volume of imports rose by over 14 times in the same period. Expressed in per capita terms, imports of basic food grains and pulses rose by just under 8 times between 1970 and 1980. Consequently, the overall trade balance for the agricultural sector - previously in surplus (c\$300m) in 1970 - had become deficitary to the tune of \$800m by 1977 and \$2.5 billion by 1980/81.¹⁰ This was accompanied by a fall in the share of agriculture in total value added from 25% in 1970 to less than 20% a decade later, with agricultural exports declining from 25% of total exports to 9% in the same period. This indicates yet again the fact that a GDP growth rate of over 9% per annum sustained since 1975 has to be explained largely by factors outside of the primary sector.

The rapid growth in food imports since the early 1970s has not, however, been engineered simply by purchases on international spot markets but has, crucially, been associated with a growing preponderance of food aid transfers and by the emergence of the United States as the major supplier. This has been closely linked to the policy re-orientations consequent upon the 'open door' strategy post-1973. Food aid has mainly been in the form of cereals supply, of wheat in particular, and has more than trebled in volume terms between 1974-1981. By the latter date nearly 79 per cent of total wheat food aid originated from the USA, allowing for nearly half of total wheat imports to be met on a concessional basis.¹¹ One result is that the real cost of declining cereal self-sufficiency is only partially reflected in the balance of payments schedule. At the same time use of the official, over-valued exchange rate under-estimates the cost of spot market purchases. This suggests that the current, high trade deficits impose a more significant burden on the economy than the present system of accounting allows for. Using these figures, however, demonstrates that wheat and flour imports constituted between 10 and 11 per cent of total merchandise imports between 1980/81 and 1982/83 in value terms, with other agricultural merchandise imports accounting for a further 14 per cent.¹² In the same period, the value of cotton and other agricultural sector commodity exports amounted to around 23.5 per cent of the value of all agricultural imports. Given the largely demand driven basis on which food imports,

in particular, has occurred, this points to the fact that reliance on relatively low cost grain imports - coupled to the current ration and subsidy systems - will tend to impose an increasing real burden on the economy if maintained on the present lines.

From the figures cited above, it must be clear that as the agricultural sector's ability to satisfy domestic demand for foodstuffs has been increasingly compromised, this has been accompanied by an inability to generate comparable growth rates for agricultural exports to those holding for imports. This has been compounded by the fact that import prices for agricultural commodities had risen by around 60 per cent when comparing the 1980/81 data with that for 1975, while export prices for cotton and other agricultural items had risen by between 38 and 48 per cent in the same period.¹³ As in the past, the major export commodity remains cotton. For Extra-Long Staple and Long Staple Cotton, Egypt retains a market share of 60% and 30% respectively in world trade. Despite this apparently strong bargaining position, Egypt has, in reality, limited market power with which to order prices for its cotton exports.¹⁴ This is further limited by the present price setting policy and its timing. Additionally, rapid expansion in domestic demand for textiles has sapped the share of total output potentially exportable. This has occurred despite the unsuitability of ELS and LS cotton for domestic consumption. Use of such long staple cotton has resulted from a reluctance to import suitable short-staple inputs as well as to expand the domestic acreage under this latter variety. Consequently, cotton exports have declined both relatively and absolutely in a period of expanding trade deficits. In absolute terms, cotton exports fell by 11 per cent between 1975 and 1980 and as a share of total exports from 44 per cent in 1970 to 14 per cent by 1980.¹⁵ In short, shifts in the structure of the agricultural export sector have not succeeded in bridging the trade deficit, when taken in purely sectoral terms. This suggests that the contemporary framework of external agricultural trade acts as a definite drag on the overall performance of the economy.

2. External Resources and Economic Growth

One possible reason for why this trend has only recently attracted great prominence is that between 1975/1981 GDP grew at around 9.3 per cent per annum (8.1 per cent between 1970/1981). This rate of growth has since fallen back and between 1982/83 remained constant.¹⁶ Yet, even in the boom years of the 1970s, it is important to note that agricultural sector growth rates were considerably lower, averaging around 3 per cent per annum. The main motors of expansion lay outside the traditional core sectors of the economy and were closely linked to the increased availability of external resources. Oil derived revenues coupled to receipts from Suez Canal tariffs, tourism and, very importantly, remittances from migrant workers have since 1973/75 played a major part in sustaining a relatively high rate of growth.¹⁷

In one sense, these poles of growth could be commonly characterised by the fact that none engender presently a cost in terms of existing resources available for domestic use. However, in the case of out-migration this would have to be on the assumption of a labour surplus in the affected sectors, principally agriculture. At the same time, there are good reasons for viewing migration as a diminution of domestic human capital stock, at least for the more skilled section of the workforce that has migrated.¹⁸ Furthermore, these 'windfall' gains have had major economy-wide implications. Growth has tended to be concentrated in the distribution and services sectors, the main exception being the petroleum sub-sector where annual growth rates since 1974 have surpassed 30 per cent. In general, however, the productive core of the economy has expanded at a more gradual pace, especially for agriculture, and this has run alongside increased import growth rates not only for capital and intermediate goods but also for consumer durables and basic wage goods. The evolution of the trade structure over the last decade has thus led to an expanded resource gap. Continuing high rates of growth for domestic government expenditure, allied to substantial expansion in domestic credit and a relatively weak tax effort, have led to inflationary pressures. Due to the complex of price controls and multiple exchange rates, exact estimation of the rate of inflation is difficult; current analyses suggest a range of 14 to 25 per cent per annum.¹⁹

The pattern of resource flows and the structures within which these high rates of growth have occurred has meant that domestic lags in food supply have not been accompanied by a decline in domestic consumption levels. Indeed, there has been a sharp rise over the last ten years. Looking at the demand for agricultural commodities and breaking down the rate of growth in per capita consumption for these basic commodities, it would appear that between 1974 and 1980 increases averaged around 50 per cent,²⁰ (Wheat 38%: Sugar 69%: Maize 24%: Red Meat 38%: White Meat 67%: Dairy Products 41%: Fish 76%). Thus, domestic supply constraints have not had any measurable impact on domestic consumption. Indeed, for certain commodities, such as wheat, demand has been driven by the concessionary nature of imported supplies and the current systems of subsidised distribution that are followed. Alderman has estimated that consumption of wheat products, when taken in flour equivalents, grew at over 6 per cent per annum between 1972 and 1980, with the import ratio rising from 55% to over 75% in the same period.²¹ The former rate of increment can largely be attributed to a combined growth in income and the effects on demand of a real price fall for wheat products. This latter element underlines the fact that any understanding of the current conjuncture requires coming to terms with the set of government mediations that serve both to set the domestic price level for a basket of major agricultural products, and to regulate the retail price of certain essential commodities.

3. Food and Energy Subsidies and their Distributional Implications

As with most facets of the contemporary Egyptian economy pricing and food distribution bear witness to two potentially conflicting approaches to management of the economy. The first might be termed a residue of the planned economy paradigm, the second has its origins in the partial liberalisation process that has been pursued since 1973. To suppose that the latter has succeeded in supplanting the more centralised management of the economy would be quite false. Indeed, it could be argued that in a number of crucial respects the process of liberalisation has created a proliferation of measures that involve controls over prices and markets. This has resulted in an uneasy co-existence in which political constraints play a major part in retarding a more radical process of state disengagement. Consequently, the economy increasingly bears the traits of a genuine 'dualism', except that the

traditional distinction between agriculture and the 'modern' sector no longer reflects the major divide. Since the early 1970s, on the one hand a vigorous private sector, concentrated mostly in the services and construction sectors, has expanded substantially. Private sector investment grew annually at a rate exceeding 18% between 1974 and 1981, while private consumption expanded by slightly under 7 per cent per annum in the same period.²² This latter fact is partly attributable to the impact of an enlarged system of food and energy subsidies. At the same time, employment guarantee schemes and the system of certificate wages have not led to a decline in the size of the public sector.²³ Rather, the latter has come to be characterized by a low-wage, low productivity structure when compared with the private sector.²⁴ In addition, interest rates, credit lines and externally-conditioned shifts in the wage rate have combined to bias investment in the private sector towards higher levels of capital intensity.

Perhaps paradoxically, the encouragement given to the private sector post 1975 has been matched by the striking expansion of the public distribution network. A less widespread system of rationing existed beforehand but its coverage and cost was very much inferior to that currently holding. Most essential commodities, as well as energy, are subsidised and some, such as sugar, are distributed almost exclusively through the ration card system. Coverage is broad with over 90% of the population being eligible. Distribution of such low priced commodities is effected through registered outlets. With eligibility being wide, de facto quantity rationing is resorted to through quota systems.

The system of subsidies manifests itself in a variety of forms - either through allotted provisioning at relatively low prices or else through outright price deflation without rationing, as in the case of energy. The overall impact when estimated in relation to expenditure patterns is substantial. By 1979 for all urban expenditure class groups the income equivalent from food and energy subsidies amounted to around 40 per cent of total household expenditures and the proportion has probably grown since then.²⁶

Estimating the absolute values of subsidies is complicated by the fact that an accurate breakdown of the distribution of subsidised commodities between rural and urban areas is not available. However, it would appear that when measured in per capita terms and as a proportion of aggregate expenditure, expenditure on the principal subsidised items, such as wheat and flour, is greater for low income households than for higher income ones. For food items as a whole the subsidy as a percentage of aggregate expenditure averages around 23.5 to 25.5 per cent for the two lowest income groups.²⁷ (These groups cover approximately half of total households). This proportion falls to under 12.5 per cent for the higher income category. This is clearly a function of the proportion of total expenditure laid out on food items. For the poorest households this proportion varies between 38 to 48 per cent, falling to between 5 to 16 per cent for the higher income categories.²⁸ This reinforces the point that any restructuring of the subsidy system will have the most major implications for the poorer households and especially those in urban areas where the public distribution system is strongest.

When looking at the impact of energy subsidies, it would appear that as a proportion of expenditure there is relatively little variation across the main expenditure class groups. However, this depends on the share attributed to indirect subsidies where energy is used as an intermediate input. Taking basic energy expenditure on electricity and kerosene, it seems that for the poorest households the subsidies as a proportion of total expenditure are around 50 per cent.²⁹ For the highest category, this proportion rises to over 56 per cent, but with a shift towards electricity expenditure, as against low income use of kerosene.

If the short and longer term costs of the food and energy subsidy system are high - (something that will become clear later in the paper) - and term costs are increasingly in function of the expectation being currently longer formed, when looked at in relation to the impact on income

distribution, the subsidy structure appears to act as a counterpoise to the more inequalitarian distributional implications of the Infitah.³⁰ Due to better access and availability of outlets, the principal beneficiaries have tended to be urban consumers. However, von Braun et al's study of Sharkiya points to the fact that nearly a third of daily food energy requirements for rural consumers in the sample were provided by subsidised foodstuffs.³¹ Middle (2-4 feddans^{**}) and larger (more than 4 feddans)

*'Economic Open-Door Policy' pursued by Sadat post 1973 **1 fedan=1.04 acres

farm households benefited most and this reflects their superior capacity for on-farm retention/ consumption of food, while the smaller farmers had to purchase a higher proportion of total food requirement. Nevertheless, Korayem, Taylor and others' work suggests that removal of subsidies would have significant negative distributional implications.³² Maintaining current levels of consumption, would require substantial income hikes. For instance, the lower middle expenditure class would require a compensatory income increment equivalent to 67% of total annual food expenditure if all food subsidies were summarily removed. Price rises would thus tend to lead to demands for wage increments that could match current consumption levels. In the absence of such comparable wage increments, it is likely that the multiplier contraction for other commodities would be significant. Taylor's model estimates that this would lead to a fall in real GDP of over 5% and would not substantially reduce food imports, given the relative inelasticity of food demand.³³

The impact of the subsidy system of household disposable income and expenditure patterns, particularly for the poorer groups, has clearly been substantial. However, the real cost of maintaining this system has risen sharply over the last ten years, as can be seen from table 2.

Table 2: Cost of Subsidies, 1970-1981

Year	% of Total Public Expenditure	% Accounted for by Food Subsidies
1970/72	0.5	0.5
1975/76	13.8	10.7
1980/81	17.4	12.3

Source: G M Scobie, Food Subsidies in Egypt, Washington, IFPRI Research Report 40, 1983

The spiralling cost of subsidies - and of food subsidies, in particular, - reflects the substantial multiplier effect on domestic consumption that has resulted from the pricing structure implicit in the subsidy system. For example, rationed sugar prices remained constant in nominal terms between 1971 and 1981, those for rice actually fell slightly in nominal terms in the same period while prices for beans and lentils increased by 47% and 22% respectively.³⁴ In the same period, the urban and retail

consumer price index rose by over three and a half times. In the case of energy subsidies, domestic prices average around 20 to 21 per cent of their border price equivalents, with fuel oil prices being a mere 5% by mid-1983.³⁵ Not surprisingly, this has stimulated domestic energy consumption, so that the annual growth rate between 1975 and 1981 was in the order of 10 to 12 per cent. Amongst other things, this has had major implications for relative energy costs in agriculture and has accelerated the pace of mechanisation.³⁶

From what has been said above, it must be clear that subsidies represent an increasing real burden on public expenditure. At the same time, the availability of subsidised food has both shifted outwards the demand curve for wage goods, and promoted a wider multiplier effect. This has occurred in a context of falling domestic availability of essential subsidised food items, particularly wheat, and a relatively slack level of growth in the agricultural sector as a whole. The supply gap has been increasingly filled by food imports. The combined effects have tended to weaken, to some extent, the trends towards a more inegalitarian distribution of income that appear to have characterised the post-1973 period. Secondly, food subsidies have probably raised levels of calorie intake across all sections of the society. This is likely to have reversed the downward trend in nutritional intake that is observable between 1958/9 and 1974.³⁷

4. Resource Allocation in Egyptian Agriculture

The current Egyptian situation is interesting not only on account of the domestic food supply lag, but also on account of the manner in which parallel state interventions in the pricing of agricultural commodities at the farm-gate tend to ensure an allocation of resources away from deficitary crops. This points to the fact that while there are significant constraints to accelerating the rate of output growth in agriculture, existing price signals play a major role in determining the scale of the food supply deficit. This is somewhat ironic, given the Egyptian government's high priority on attaining food self-sufficiency.³⁸ Prior to dealing with the set of price interventions and output controls that operate in Egyptian agriculture, it is necessary to give a condensed analysis of the structure of agricultural production and the range of competing demands for the labour force in that sector. The first point

to make is that, largely on account of land reform measures embarked upon post-1952, the vast majority of farm units command a very limited cultivable area. By 1979 some 80 per cent of farms fell below 3 feddans and these units controlled over 46 per cent of the cultivable area. A further 17 per cent fall between 3-10 feddans (35 per cent of the cultivable area) and a mere 3 per cent are farm units of above 10 feddans. Nevertheless, the latter control at least 19 per cent of the cultivable area.³⁹ Intergovernorate differences in landholding size are not ~~that~~ marked, though in the most commercialised and productive areas with access to urban markets - such as Minufiya - 'dwarf' holdings predominate, with intensive vegetable cultivation being the norm.

The fragmentation of production units, while allowing for a diminution in the size of the agricultural landless labour force, has run parallel with the continuing decline in the land/man ratio. Between 1970 and 1980/81, this ratio has fallen from 0.18 feddan per person to 0.15 and the area constraints on Egyptian agriculture have only very partially been weakened by reclamation of 'new lands'. Since the 1960s some 1.1 million acres have been brought into production but only a third of this area has so far managed to cover variable costs of production.⁴⁰ At the same time, something in the order of 50,000 acres a year - approximately 0.75% of the total cultivated area - are lost to agricultural production through urban encroachment. Much of this land is additionally of the best quality.

The major constraint in Egyptian agriculture thus remains land, rather than input based constraints. Any discussion of possible future productivity gains has to concentrate on the question of the intensity of production. At present, assured irrigation and the prevailing rotations maintain a cropping intensity of around 190%.⁴¹ Land productivity is already high and growth rates have been impressive over the last couple of decades. Yields for most major crops have continued to rise significantly through the 1970s, save for wheat and sorghum. In the case of wheat the introduction of higher yielding varieties was not well sustained as the straw yield was inferior to domestic varieties. By the late 1970s straw - largely on account of current pricing policy - was generally deemed to be a superior good. In general, however, domestic yields are as much as 75 per cent above average world levels for

field crops.

Table 3: Yields for Major Field Crops, 1950-1982 (1950/54=100)

Year	Wheat	Cotton (lint)	Rice	Maize	Sugar-cane	Sorghum
1955/59	116	104	133	98	109	107
1960/64	129	120	140	118	112	121
1965/69	128	134	132	167	113	142
1970/74	157	151	140	172	107	145
1975/79	164	163	141	177	99	133
1980/82	167	208	150	191	99	133

Sources: H A El-Tobgy, Contemporary Egyptian Agriculture, Cairo 1976, pp91ff: Ministry of Agriculture, ARE

This means that while considerable scope for raising land productivity still exists, major yield increment projections for the medium term have to be based on a set of very favourable assumptions. Thus, despite the fact that actual yields ~~are estimated to be around 60 per cent of their potential yields for major food crops~~ and around a third of their potential level for vegetables, World Bank projections to 1990 indicate that crop self-sufficiency for all major food crops and livestock products will continue to decline quite sharply. This conclusion is derived even with assumptions of a 2.5 per cent output growth rate and the net addition of 486,000 feddans of new land at 70 per cent old land productivity levels.⁴² Moreover, the recent government sponsored mechanisation programmes while substituting the use of mechanical energy for draught, animal energy, have not yet had any major impact on productivity levels. Indeed, experience so far with such complementary inputs does not point to higher yields, or cropping intensity, being associated with tractor or thresher adoption.⁴³ In fact, one of the major arguments mustered in favour of mechanisation is not the gain in 'timeliness' associated with machine use but the potential evening-out of the labour supply input. The current debate concerning the choice of technology in agriculture appears now to acknowledge that machinery adoption should be seen largely as cost-saving rather than yield-raising, given the mainly exogenously determined rise in rural wage rates over the last decade. In the longer term, however,

mechanisation could emerge as a possible means for delinking output growth from the need to intensify labour use.

If the current state of food deficits is neither a phenomenon of long standing, nor a function of low productivity in agriculture, then much of the explanation needs to be sought with regard to the present structure of domestic price ratios. While between 1970-1981 the inter-sectoral terms of trade have moved consistently in favour of agriculture,⁴⁴ respective returns from agricultural commodities have been radically shifted. This has led to a substantial fall in the area now devoted to field crops and to the major food staples in particular. This has run counter to the supposed goals of government intervention and has manifested itself most strikingly in the substitution of fruit, vegetables and fodder crops, mostly birseem, for basic grains. This substitution has been most pronounced for those crops, such as rice, beans, lentils and wheat, where either the domestic price level is depressed or else where forced deliveries are important. In the case of wheat, for example, procurement has actually fallen substantially in the last decade but the domestic price remains below 45 per cent of the border price level. At the same time, concessional wheat imports have further depressed the rate of return in domestic wheat production.⁴⁵

The nature of government interventions in the agricultural products market has led not only to a continuing implicit taxation of the agricultural sector, but also to the effective operation of a dualistic pricing structure in Egyptian agriculture. Thus, controlled prices for most basic food and industrial crops have risen by some three and a half times between 1970 and 1981, while uncontrolled prices for fruit and vegetables have increased by nearly four times and for birseem by nearly six times.⁴⁶ Not surprisingly, this has resulted in a shift into live-stock associated farm production, with particular concentration on fodder production. This has been consolidated, in a multiplier effect, through shifts in the domestic consumption preference structure consequent upon the largely exogenously determined growth path realised since the early 1970s.

Table 4: Area Under Major Crops 1960-1981

	<u>1960/63</u>	<u>1970/73</u>	<u>1978/81</u>		<u>Output</u>	
					<u>Value Shares</u>	
					<u>1960</u>	<u>1979</u>
Birseem	23.8%	25.9%	25%	Animal Products	22%	29%
Vegetables	4.8%	7.1%	9.3%	Vegetables	7%	14%
Fruit	1.4%	2.3%	3.2%	Fruit	4%	6%
Field Crops (Wheat)	70% (13.5%)	64.7% (11.9%)	62.5% (12.4%)	Field Crops	67%	51%
Total Crop Area	100 (100)	100 (105)	100 (108)	Total	100	100

Source: ARE Ministry of Agriculture & World Bank, 1983 (b)

What has been occurring over the last two decades and has been accelerated since 1973, is a shift out of the production of crops with relatively high social returns into those with relatively high private returns. The traditional mechanism for regulating output-mix through quotas and controlled prices has actually stimulated this process. At present, realignment of price parities domestically, coupled to a hike in producer prices - would involve major alterations to the currently preferred taxation structure and would require reappraisal of the weight to be attached to cotton production and exports in state revenue strategy.⁴⁷ Such a reappraisal in turn becomes progressively more complex and the adjustment costs more pronounced, given the large and relatively recent expansion of pledged expenditures through subsidies.

Historically, criticism has been levied against price and quota controls on the grounds that they violate basic conditions for optimal resource allocation through the widening disjuncture from shadow prices and from the range of 'distorted' signals that are transmitted to producers.⁴⁸ Further, implicit taxation of rural producers for the supposed financing of industrial sector investment was argued to have depressed the rate of economic return to farmers. Cuddihy estimated, on the basis of 1974/75 data, that transfers away from agricultural producers summed to £1200m at parallel exchange rates while transfers to consumers and the state were respectively £1021m and £179m. Price interventions by the State

were argued to have resulted in a longer-run net tax on the agricultural sector amounting to around 30 per cent of value added.⁴⁹ Since the mid-1970s, producer price increases for most controlled commodities have occurred (the meat price was in any case above border prices) and with the growth of input subsidies the most recent estimate suggests that the implicit tax on agriculture declined to around 14 per cent between 1977 and 1980.⁵⁰ By the latter date domestic prices for nitrogen and feed mix inputs varied between 23 and 40 per cent of their international equivalents.

5. The Contemporary Structure of the Agricultural Labour Market

In the face of the range of government interventions and the resulting price structure, Egyptian agricultural producers have clearly shifted resources into crops and activities where private returns are highest. The disjuncture between the rate of increment for controlled crop prices and those which are, more or less, 'free-market' crop prices has, moreover, been consolidated by important modifications in the structure of the agricultural labour market. The largely supply-side determined rise in real wages for agricultural labour has, amongst other effects, strengthened the move into animal-associated farm activity. With sharply rising wages, stimulated by the growth in migrant work opportunities in neighbouring Gulf states and increased non-farm employment at home,⁵¹ agricultural producers have tended, where feasible, to restrict the proportion of hired labour to family labour inputs. Looking at the trend in non-labour incomes, it can be seen that this was negative through the 1970s. However, the factor share appropriated by labour has been differentially represented. Table 5 demonstrates that the impact of a rising real wage rate for labour has fallen least sharply on fodder crops and on birseem, in particular. This suggests that area response is closely related to the patterns of optimal labour-mix that can currently be sustained at the farm level. As all farm size classes have recourse to hired labour inputs - in Sharkiya, for example, labour utilisation on farms of less than one feddan includes a hired component of around 35 per cent of total labour time⁵² - the share of costs appropriated by labour enters significantly into the accounting strategy of the great majority of farm enterprises. In this regard, fodder cropping not only

Table 5: Labour Share as % of Gross Income

<u>Food Crops</u>	<u>1970</u>	<u>1981</u>
Wheat	46.6	59.4
Rice	62.5	74
Beans	33.9	44.8
Lentils	34.6	51.9
Barley	30	66.9
Sesame	30.6	49
<u>Average for Food Crops</u>	<u>39.5</u>	<u>56.7</u>
 <u>Industrial Crops</u>		
Cotton	51.4	62.1
Sugarcane	58.7	70.9
<u>Ave. for Industrial Crops</u>	<u>55</u>	<u>67.1</u>
 <u>Export Crops</u>		
Onions	61.4	75.6
Groundnuts	44.9	52.3
<u>Ave. for Export Crops</u>	<u>54.7</u>	<u>65.8</u>
 <u>Fodder Crops</u>		
Birseem	22.9	25
Maize	54.4	56
Sorghum	54.5	68.8
<u>Ave. for Fodder Crops</u>	<u>42.2</u>	<u>48.2</u>
 <u>Fruits and Vegetables</u>		
Oranges	34.2	57
Tomatoes	21.4	38.8
Nile Potatoes	63.1	65.7
<u>Ave. for Fruit and Veg.</u>	<u>37</u>	<u>53.7</u>

Source: Calculated from: World Bank, Issues of Trade Strategy and Investment Planning, ARE, January, 1983, Washington, pp 152/3

has the advantage of a favourable price relative to food crops and a buoyant domestic market (including intra-household exchange), but is also labour conserving in terms of hired labour inputs. This can be seen most clearly when taking account of the full range of livestock associated activities practiced on-farm, of which birseem cultivation is only one component. With the growing adoption of machinery for major agricultural tasks, animal energy has been displaced by machines, allowing in so doing for a lower ratio of draught animals to total livestock endowments. Thus increasing concentration on animal husbandry cannot simply be explained by favourable domestic, producer prices but is also closely related to the parallel phenomenon of labour disposition. On small farms in particular, where an effective labour surplus is retained on-farm due to wide seasonal fluctuations in utilisation and constraints on female labour market participation, a proportion of this available labour power is devoted to livestock work. The outputs of this - meat, milk, dairy products - have both boosted on-farm calorie intake and have allowed for a higher proportion of total marketed surplus. At the same time, livestock work relies heavily on female and child labour. Fitch and Soleiman⁵³ have estimated that while woman and child labour accounts for around 6 per cent of labour inputs for crops, in the case of livestock the proportion varies between 40 and 43 per cent of total labour inputs for farms of less than 5 feddans. The results of a village survey for Sharkiya record even higher levels of female and child labour use with possibly as much as 75 per cent of total family labour inputs originating from these categories.⁵⁴

This labour profile is both reflective of, and in turn structures, conditions in both the labour and agricultural product markets. Relatively

high prices for animal products have stimulated the shift away from traditional food crops while, at the same time, depressing the size of the actual available labour force. Family labour, particularly female labour, continues to be absorbed on-farm. In turn, seasonal tightness in the labour market is made more pronounced. With wage rates high relative to farm income, yet low in relation to the wage offered in other sectors, the squeeze on agricultural producers is repounded to by further concentration on crops that require lower hired labour inputs. This acts as an additional disincentive to raising the proportion of the cultivated area devoted to crops, such as food staples and cotton which require a higher volume of seasonal, hired labour inputs. To this extent, developments in both the structure of domestic agricultural prices, as also with regard to the evolution of the wage rate in agriculture, have tended to widen the gap between domestic food supply capacity and demand.

Table 6 Wage Differentials by Sector, 1960-74/78 (Agricultural Wages=100)

Year	Construction	Services	Industry
1960/63	509	540	497
1964/68	355	432	379
1969/73	351	439	397
1974/78	354	326	310

Source: Hansen and Radnan, 1982; Fitch and Aly, 1982.

6. Conclusion

The argument presented in this paper has attempted to define the parameters within which the problem of food deficits has to be analysed. In general, it can be said that there is no structural feature that has determined this condition but that a series of related government interventions, linked to the inflow of 'external resources', have resulted in major shifts in the cropping pattern and in the differential rate of return across crops and farm activities. At the same time, high rates of growth in the economy as a whole have only been partially replicated in the agricultural sector. While the entire commodity sector grew at over 7.5 per cent per annum between 1974 and 1981, agriculture's growth rate was around 3 per cent. Despite the fact that since 1973 total spending on agriculture has grown faster than the total government budget, the share of total investment for agriculture has fallen back substantially over the last two decades. In the mid-1960s, agriculture appropriated around 25 per cent of total investment, by 1979 this had declined to less than 8 per cent.⁵⁵ The high rate of investment in the 1960s can, of course, be partly explained by the Aswan Dam project. However, there can be little doubt that in the last ten years government has moved away from direct investment to reliance on input and output price management as a means for securing current goals. Furthermore, the present composition of the limited public investment remains heavily biased towards land reclamation with this accounting for nearly 30 per cent of total investment in agriculture. By contrast a mere 2.4 per cent has been allotted to agriculturéal services. This suggests that major barriers to accelerating output growth, such as drainage and more efficient use of water resources, are unlikely to be overcome, at least in the medium term. Compensations for domestic supply shortfalls through productivity gains are unlikely to be significant. If current policies are sustained the avowed aim of regaining a state of food self-sufficiency will recede even further while, at the same time, the agricultural trade deficit is likely to grow to massive proportions.

Most critiques of the present mix of policies pursued by the Egyptian State at present have focused on the distorting effects of price interventions and trade controls. At the same time, there has been consistent and strong

pressure on the government to reduce drastically the provision and scale of subsidies presently on offer. Such reduction is obviously most pressing in terms of energy prices, but the longer term projections regarding food production and demand have reinforced the line of argument that favours price increases and reduced access to subsidies. As in the rest of North Africa and with the memory of the 1977 food riots, such adjustments are, however, likely to encounter major political barriers. Tentative measures to raise the price of baladi bread have quickly been reversed in the face of opposition.⁵⁶ This suggests that upward price adjustment is likely to be a slow process.

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Yet while the existence of the subsidy system incurs expanded expenditures by the State and serves to augment the imported food requirement, it is important to note that these subsidies have had significant income implications for the poorer groups in Egyptian society. In particular, urban consumers have benefited but in recent years the expansion of the distribution system in the countryside, has had a more equalizing effect. It is principally on account of the food subsidy systems that food intake levels, when measured in calorific terms, have risen, even at the base of society. This has been one feature that has modified the general trend towards a more inegalitarian distribution of income since Infitah. However, this modification has at the same time allowed for a widening disjuncture between public and private sector wage rates to emerge. Particularly for public sector employees, the food subsidy enters as a crucial wage supplement. Given the current gap between domestic supply and demand for food this may well be an unnecessarily costly way of maintaining sufficient levels of purchasing power for basic wage goods. A more efficient response might be to raise wage levels in the public sector, linking this to a rationalised recruitment policy and productivity increments, while at the same time restricting access to food subsidies to those in need. A more selective grading is clearly feasible but it is by no means clear that wage based solutions will not lead to a sharp increase in the inflation rate. At the same time, such shifts would have to be closely linked to restructuring of the price system. The realignment of domestic price parities and, in particular, the raising of producer prices for food crops, could undoubtedly increase the area and marketed surplus

for these commodities. This would require a movement away from live-stock husbandry and a diminished area under fodder crops. However, this would run the risk of throttling off the basis on which recent income increments for agricultural households have been achieved.

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