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**RICE
SUBSECTOR
BASELINE
UPDATE**

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EXECUTIVE SUMMARY

1990s Progress in Liberalization Compromised by Recent Developments. Rice market liberalization and reform were significant and widely celebrated in Egypt during the 1990s. A lively free market trade emerged after 1992, when the GOE began to liberalize the rice market. Private investors rapidly established a large private milling capacity in the mid to late 1990s. Some of this very significant progress may have been undercut somewhat, however, by GOE announcements in 1998/99 and the behavior of the Holding Company for Rice and Flour Mills in 1999/2000.

The GOE, which stayed the reform course during much of the 1990s, has intervened in ways that have negatively affected market performance during the past fourteen months. First, senior GOE officials made announcements of minimum producer paddy prices and massive exports to Indonesia in late 1998, which inflated price expectations and contributed to driving up producer and export prices in 1998/99. At the beginning of the 1999/2000 marketing season, the RFM-HC helped the public sector mills obtain large bank loans to purchase paddy at high early season prices. Private commercial millers and exporters maintained only a minimal market presence early this season, while the public mills were buying large volumes of paddy at prices that opened at least one-third higher than in 1998/99. Total public sector purchases had reached about 490,000 mt by the end of November 1999.

GOE Contributes to Rice Policy and Trade Uncertainty in 1998/99. The 1998/99 rice production and marketing season was characterized by a greater-than-usual seasonal rise in paddy and milled rice prices. The GOE announced a paddy crop that was well in excess of its probable size in late 1998. Although estimates of planted area appear to have been reasonably accurate and were lower than the previous four years (at 1.225 million feddans), yield estimates appeared to have been inflated at 3.63 mt/feddan, a record high (prior to the forecast 3.74 mt/feddan of 1999). Producers and millers reported that yields were poor in many areas in 1998 and that actual paddy output may have been about 30 percent lower than MALR-announced estimates. After 3-4 months of low paddy prices following the 1998 harvest, paddy stocks began to tighten and into-mill wholesale prices rose quite sharply. According to some sources, the GOE announcements of exports to Indonesia, widely published in the media, encouraged speculative buying by traders, which further pushed up prices. In addition, the Prime Minister's reported late December 1998 declaration of a minimum producer paddy price of LE 600/mt raised producer and trader price expectations. In other words, GOE announcements exacerbated the effects of the paddy production shortfall that participants in the market were beginning to recognize by December 1998 and early 1999.

By May 1999, the Egyptian press proclaimed a national rice crisis. GASC advertised for tenders, though it never imported paddy. Several private firms, seeking to profit from the shortage and high rice prices, imported Chinese rice in June-July 1999, even though they paid duties, sales taxes and other fees of over 25 percent. By May 1999, Egyptian rice exports had virtually ceased, as paddy prices had risen to a point where Egypt was no longer a competitive exporter in regional markets. Rice price rises were stalled and dropped somewhat with the GASC announcements and the private commercial importation of Chinese rice. The GOE claims that it shook speculation out of the market, though MVE has no data on paddy stock release from private storage (into mills) and flows of milled rice onto the

domestic market. It is more likely that knowledge of private sector imports of Chinese rice dampened domestic rice prices.

The experience of 1998/99 suggests strongly that an important role for the GOE lies in generating more accurate and timely paddy area and production forecasts and estimates, as well as in providing good market information — not in making announcements that tend to destabilize the market or trying to influence prices and the market behavior of private sector participants. Industry sources feel that production estimates are politically manipulated, and they do not rely on them. The public sector is also not a good source of reliable or timely information on market prices at different levels of the marketing system. MTS/GOEIC should be commended, however, for producing detailed reports on the volume of rice exports, disaggregated by exporting firm and country of destination, at regular intervals (generally monthly).

Record 1999 Crop and a Resurgent Public Sector. The first third of the 1999/2000 rice production/marketing year has been completed. Paddy area planted and production in 1999 were record highs, probably above the MALR-announced figures of nearly 1.6 million feddans of paddy cultivated and 5.6 mmt of paddy output. In a well-functioning, private sector-led rice market, a crop of this size would ordinarily push paddy prices way down. This was not initially the case, as the Holding Company obtained finance that allowed the public sector mills to procure nearly half a million tons of paddy at prices from LE 600/mt to LE 700/mt. At paddy procurement prices of LE 650/mt or higher, Egypt can barely compete in export markets, where it is facing stiff competition directly from the U.S., Australia and China in export of medium-grain rice and indirectly from Thailand and Vietnam in long-grain rice.

In September and October 1999, the private sector feared that if paddy prices did not decline, Egypt's rice exports would fall below last year's 308,223 mt, which was a 101,000 ton drop from the 409,193 mt of 1997/98, a record export year. Paddy prices had begun to decline in November and reached more reasonable levels by mid-December 1999, though they appeared to be rising again by late January 2000. The risk appeared to be moderating of a scenario where exports fall below 200,000 mt, private sector participation is limited in milling for export and export shipping this season, and large paddy stocks accumulate by the end of the 1999/2000 season. Nevertheless, there are informal reports that the public sector mills have access to finance that will allow them to procure another half million tons of paddy. The early December merging of the Holding Company for Rice and Flour Mills into the Food Industries Holding Company adds another element of uncertainty to public sector participation in paddy buying and milling during the remainder of the 1999/2000 season. Observers note the Food Industries Holding Company has been one of the most resistant holding companies to privatization.

The impact of price and market developments from January to April/May 2000 will clearly affect producer planting decisions for the summer 2000 crop. The level and trend of producer paddy prices and retail (consumer) rice prices right before planting time are likely to be major determinants of commercially oriented producers' decisions regarding summer crops. Market developments following Ramadan early in the new year will be important to monitor. The private trade expects paddy and domestic rice prices to drop significantly, as long as the public sector mills do not buy large volumes

of paddy. As of late January 2000, the public and ESA mills remained out of the paddy market (since early December 1999), and into-mill paddy prices were rising from December 1999 lows but still within the competitive range for rice to be profitably milled and exported.

The leadership role of the Holding Company for Rice and Flour Mills (HC-RFM) remained bewildering and a source of apprehension to the private sector during the first months of the 1999/2000 season. One year the public sector mills were in the market in a significant way (1995/96, 1997/98, 1999/2000); the following year they were largely out of it (1996/97, 1998/99). Public announcements of privatization of public sector rice milling companies into ESA firms in 1998 and 1999 led market participants to believe that the GOE was finally getting out of the rice processing business. The actual behavior of the HC-RFM and its affiliated companies invalidates that expectation and has introduced considerable uncertainty into the Egyptian rice market. Egyptian commercial millers and exporters expect international rice markets to be volatile, particularly for thinly traded short- and medium-grain rice types, and they are prepared to deal with this uncertainty. Uncertainty introduced by the GOE and public participants in the market is not a welcome or predictable development, and it has left many private sector traders, millers and exporters perplexed. The HC-RFM operated in a non-transparent manner, did not provide information to the rice industry about its operations or plans, and appeared to be defending the interests of public sector and ESA mills by securing finance for them. Note, however, that the Holding Company did agree, in 1998 and 1999, to plans for six ESA mills to become privately owned through employee and management buy-outs over 10-15 year periods.

The HC-RFM grudgingly accepted the existence of larger private sector commercial mills, though it tended to underestimate their numbers and importance. At the same time, it criticized smaller scale *faraka* as illegal (they are not all registered), failing to operate in accordance with Ministry of Industry and other regulations, producing low-quality rice with a high rate of brokens (20-30 percent), competing unfairly (charging much lower rice processing fees), and generally damaging the reputation of the Egyptian rice milling industry. Most private industry sources quietly note that the one single public sector development that would most benefit the industry would be the end to HC-RFM support to the ESA mills, which is perceived as an unfair advantage. As long as the HC-RFM (or other public company or agency) continues to retain control of the ESA mills and to obtain finance for them to operate, these mills will operate as quasi-public sector companies. One positive change is that the public mills are paying the current market rates of interest of 12-14 percent, in contrast to bank loans obtained at 10 percent by the HC-RFM in 1997/98. Nevertheless, privatization at this point appears to have been a paper transaction and the ESA mills appear to be operating under continued Holding Company management. Over the course of 10-15 years, however, the ESA mills will acquire more shares and Holding Company control will diminish.

Industry Views on Policy and Regulatory Priorities. The nascent Rice Federation has not yet been legally constituted, although a number of prominent rice exporters and millers are able to express their views through the Agricultural Commodity Council (ACC), another work in progress. The ACC and its sub-councils promise to provide the industry with a formal mechanism for voicing their questions, concerns, and priorities. Until the commodity council system is fully operational and its role is well-articulated (under the tutelage of a new Minister and Ministry), the private sector's voice remains somewhat muted. The Rice Branch of the Cereals Industry Chamber of the Egyptian Federation of

Industries is viewed in many quarters as a quasi-governmental body, although its membership is now virtually entirely private.

MVE presents a composite picture of the views of commercial millers and rice exporters, who lack a clear and direct path to senior GOE policy-makers,. Their main recommendations are as follows:

Lower the Rice Tariff. Protection of over 25% percent makes rice imports prohibitively expensive in most years. This contributes to high consumer prices, particularly in the second half of the marketing year (April-August). This has an especially adverse impact on lower income households, for whom rice is an important staple. The rice crisis of the 1998/99 season could have been averted if rice imports had been subject to no or low tariffs and taxation. Given the stronger than usual seasonal rise in prices, private traders would have been able to import rice earlier than they did in the mid-summer, at which point prices were extraordinarily high and at least 34,000 mt of Chinese medium-grain rice were imported (despite the high tariff, sales tax and related charges).

The GOE Should Not Intervene in the Rice Market. GOE interventions tend to be destabilizing rather than stabilizing, as witnessed by Minister Goueli's announcements of massive rice exports to Indonesia and Prime Minister El Ganzouri's declaration of a mid-season minimum paddy price for producers in December 1998. Both announcements influenced private trader expectations and contributed to the unusually strong increase in wholesale paddy prices.

Private traders, millers and exporters also noted that the GOE, through the Holding Company and public banks, should not intervene in financing public procurement of paddy in 1999/2000 or in doing the actual procurement. Public announcements of Holding Company intentions in the press created uncertainty in the marketplace. Other announcements by PBDAC and Minister Wally (see Annex 5) also helped set expectations for high paddy prices. Paddy prices opened the season at much higher levels—36 to 57 percent higher—than in 1998/99.

Generate Reliable Forecasts and Estimates of Rice Area Planted and Production. The divergence between the MALR-announced rice production for 1998/99 and the industry's lower estimate, as well as the gap between the MALR forecast and unofficial estimates for 1999/2000, suggest that published statistics are unreliable. Private traders, millers, exporters and prospective importers need reliable information on supplies (at a minimum, production, but also stocks) to run their businesses effectively.

Consult the Industry More Closely Before Making Major Varietal Changes. Large commercial millers and exporters voiced this recommendation most strongly, stating that phasing out of Giza 171 and 172 was detrimental to the competitiveness of Egyptian rice in international markets. The short-season varieties are not as preferred as the longer-season varieties for the key export markets, particularly Turkey and Arab countries. Elimination of Giza 171 may hurt Egypt's reputation as a supplier of the tastiest short-grain rice with the best cooking properties in Arab and Mediterranean markets.

Strengthen Rice Situation and Outlook Reporting, Including Reporting of Accurate Price Information. There is a real void of useful information for the industry here. This contributes to the

sentiment of many key industry informants that they act in a non-transparent market environment. Large commercial millers and exporters report that they have far better and more accurate information about the international market than they do about the domestic market.

Devalue the Egyptian Pound. According to DEPRA analyses, the real value of the Egyptian pound has appreciated 69 percent against a trade-weighted basket of currencies since 1991. Yet over much of this period (since 1993), the nominal exchange rate to the dollar has been pegged in a narrow range of 3.38 to 3.42 LE. Clearly, the competitiveness of Egyptian rice exports is harmed by the overvalued pound.

Maintaining an overvalued currency also makes it difficult to remove or reduce the 20% tariff (plus 5% more in sales tax, plus additional import fees). The overvalued pound not only penalizes rice exporters; but it makes imports artificially cheap in local currency terms. The greater than 25% protection of the tariff, sales tax and fees is almost necessary to offset the degree of overvaluation of the currency.

MVE concurs with these recommendations and urges the GOE to consider them seriously. It is essential that the public sector respond to private sector concerns and develop a more open (transparent) and stronger working relationship with industry partners. Although a fundamental objective of the MALR is to reduce irrigation water use on rice in Delta command areas, the GOE should not lose sight of the fact that a vibrant commercial rice milling and export industry has developed in Egypt in a relatively short period (since the early 1990s). This industry employs many people, earns significant foreign exchange, and has absorbed massive capital investment. MALR decisions about promoting particular rice varieties need to take industry views (reflecting export market preferences) into account. Furthermore, the GOE should reconsider its decision not to lower the tariff on imported rice. Allowing cheaper imports to enter the Egyptian market at a low tariff rate, particularly during the later months of the marketing season when domestic consumer prices rise, would moderate seasonal price swings and benefit consumers, particularly poorer households and landless and rural workers.

An Agenda for Further Monitoring and Evaluation. MVE plans to continue monitoring the rice subsector and to produce an endline report during the 2001/2002 season. As a major and profitable field crop, rice employs many farmers, traders and mill workers, and generates a lot of revenue for farmers, traders, millers and exporters. As an important export crop, it generates significant foreign exchange—an estimated \$135.6 million in 1998. Furthermore, positive developments have taken place with respect to water savings. Area planted to short-season paddy varieties exceeded 50 percent of total area cultivated to paddy in 1998 and rose to around 70 percent in 1999. This is a remarkable achievement in that area planted to short-season varieties covered only 5 percent of total rice area in 1995. The shift to high-yielding, short-season varieties will help to conserve some water for use on the new lands in North Sinai and Toshka, with water savings on the area grown to paddy of an estimated 13 percent (as reported in a recent MIWR publication).

MVE recommends further monitoring and analysis of the following issues affecting the rice subsector:

- C continued progress in introducing short-season paddy varieties, water savings to cultivating these varieties, and changes in cropping patterns due to uptake of short-season varieties;
- C inter-annual paddy and milled rice price variations and seasonal price patterns;
- C the alternative profitability of rice and other summer field crops (and rotations not involving paddy), as well as paddy producers' price responsiveness;
- C the continued viability of Egypt as a rice exporter, given a possible second straight year of declining exports (under the high domestic price scenario); and,
- C the impacts of GOE interventions on the performance and viability of private paddy traders, millers, and milled rice traders and exporters.

As noted at several points in the paper, farm and trader surveys, carried out by MALR/CAAE, would improve understanding of producers' paddy sales and storage practices, as well as traders' inter-temporal paddy storage strategies and practices. There is no reliable information on the level of paddy stocks at different points in time, the physical location of stocks (as well as the relative proportions on farm and in trader stores), and the typical length of storage. Rice supply and use tables suggest year-end stocks were very high for several years during the 1990s (1994/95 through 1997/98), though they got drawn down to nearly zero by the end of 1998/99. It is not clear why farmers and/or traders would hold such high levels of paddy stocks from one season to another, however, even if paddy can be stored with minimal damage for 2-3 years under good conditions. The high year-end stocks calculated from available GOE statistics calls into question the underlying validity of the data used in preparing an internally consistent set of supply and use estimates.

1. INTRODUCTION

The purpose of this paper is to complete the analysis of the 1998/99 rice marketing season begun in the *Rice Subsector Baseline Study*, using a more complete set of price and trade data, and benefitting from structured informal interviews with key informants done late in the season or early in the 1999/2000 marketing season. Among other things, the report attempts to explain factors behind the spring 1999 rice crisis, as well as offer reasons for the sharp decline in rice exports as of May 1999.

The paper also provides some description and analysis of developments during the first few months of the 1999/2000 production/marketing season. This discussion should be treated with caution, given the usual lag in availability of official statistics and the difficulty in obtaining timely and accurate information about the operations of the Holding Company for Rice and Flour Mills and its affiliated companies.

Note that this report is meant to be a selective and not an exhaustive update of developments in the rice subsector. MVE hopes and recommends that periodic (quarterly or semi-annual) reports on domestic subsector and industry performance, as well as international market updates, will become a routine output of the MALR. This would benefit MALR, the Ministry of Supply and Home Trade, APRP, and various private sector clients.

The organization of the subsector update report is as follows. Chapter 2 presents data on the record 1999 paddy crop and points out divergences in MALR and MPWWR figures. Chapter 3 documents the impressive growth in cultivation of short-season, high-yielding varieties during the 1990s, as well as providing the GOE and rice industry perspectives on this growth and its implications for rice milling, trade and consumption. Chapter 4 takes an in-depth look at the performance of the rice market in Egypt during the 1998/99 season, describing the spring 1999 rice crisis and offering explanations for its occurrence. A major part of this chapter is devoted to examining into-mill wholesale paddy price and milled retail rice price increases, by presenting available empirical evidence. Chapter 5 assesses Egypt's rice export performance in 1998/99, earlier years, and the first quarter of the 1999/2000 marketing season. It analyzes this performance in light of world market trends and domestic market developments. Chapter 6 examines Egypt's competitive position in each major market during the second half of the 1990s, as well as future opportunities and threats to Egypt's market share, particularly in the Mediterranean and Black Sea markets. Chapter 7 describes progress and post-privatization problems in the operations and Holding Company management of the six ESA rice milling companies and the two remaining public sector mills. Chapter 8 details private rice industry views on GOE policies and regulations affecting the rice subsector.

Several annexes provide supplementary information on rice production, milling and consumption in Upper Egypt, production and trade statistics, recent investments in commercial rice mills, and press clippings of important GOE announcements. Annex 3 attempts a first cut at analyzing changing shares of cropped area to rice and competing summer crops, as well as rice's profitability relative to other summers crops.

2. AREA PLANTED AND HARVESTED IN 1999

Overall area planted to paddy increased by an estimated 20 percent in 1999/2000 to an estimated 1.559 million feddans from 1.225 million feddans (official figure) reported for 1998/99. While GOE restrictions on paddy cultivation were enforced in 1998, enforcement seems to have been lax in 1999. Some unofficial estimates of area cultivated to paddy in 1999 reach 2.0 million feddans, although this figure appears exaggerated.¹ Preliminary indications are that the paddy crop will be larger than the record 1997 crop of 5.42 mmt. Using the preliminary average yield estimate of 3.736 mt/feddan of MALR, the estimated paddy crop size is 5.825 million metric tons.

2.1 Distribution of Paddy Area by Governorate and Variety in 1999

Nearly half of the area cultivated to rice is found in only two governorates: Dakhalia (461,260 feddans) and Kafr El Sheikh (310,156 feddans), as shown in Table 2-1. Dakhalia alone accounts for 29.6 percent of the estimated paddy area. The estimated paddy area and yields for 1999 are shown by variety for the seven major rice-producing governorates in Table 2-2. The area planted to the long-season varieties, Giza 171 and 172, has dropped significantly to 318,072 feddans, only 21.5 percent of total area cultivated to paddy in 1999, from an annual average of 852,500 over the 1995-1997 period. Estimated area planted to Sakha 101/102, introduced in 1997 on only 5,900 feddans, rose strongly to 78,000 feddans in 1998 and nearly 420,000 feddans in 1999. In 1999, Giza 177 and Giza 178 continue to be important varieties, grown on 18.7 and 23.5 percent of the area, respectively, in the major rice-producing governorates. This is relatively unchanged from 1998.

¹ See Annex 3 for a discussion of shifts among the major three summer crops—rice, cotton and maize—during the past ten years. Focusing on the seven major rice-producing governorates (six in the Delta plus Fayoum), MALR reported paddy area for 1999, as shown in Table 2-1 was 1,476,985 feddans. By cross-checking paddy area cultivated with total summer cropped area and area allocated to competing crops over the past several years, it is possible that paddy area was under-estimated by MALR and was actually 10 percent higher than their estimate. If this were the case, paddy area in the seven major rice-producing governorates would be 1,624,684 feddans. Adding the 82,110 feddans grown (illegally) in “Other” governorates (see Table 2-1) yields nearly 1.71 million feddans of paddy area cultivated nationally in 1999. If MALR under-estimated area cultivated to paddy in Other governorates, national paddy area could have been even higher. Assuming that MALR estimated this Other area as only 50 percent of what was actually sown, national paddy area might have reached 1.788 million feddans. After performing these internal consistency checks, we think that it is unlikely that paddy area exceeded 1.8 million feddans in 1999. For this to have occurred, MALR would have had to seriously underestimate paddy area in both the major producing governorates and in areas outside those zones where rice cultivation is not allowed, and area cultivated to other crops would have had to drop precipitously.

Table 2-1: Preliminary Estimate of the 1999 Summer Rice Crop

Governorate	Area Planted (Feddans)	Percentage of Total Area	Projected Yield (mt/feddan)	Projected Production (mt)
Dakahlia	461,260	29.6%	3.836	1,769,393
Kafr El-Sheikh	310,156	19.9%	3.563	1,105,086
Sharkia	243,850	15.6%	3.772	919,802
Beheira	212,112	13.6%	3.904	828,085
Gharbia	153,078	9.8%	3.748	573,736
Damietta	61,318	3.9%	3.496	214,368
Fayoum	35,211	2.3%	3.211	113,063
Sub-Total	1,476,985	94.7%	3.754	5,544,602
Other	82,110	5.3%	3.416	280,488
Total Egypt	1,559,095	100.0%	3.736	5,824,779

Source: MALR/CAAES

2.2 Divergence in Various Estimates of the Paddy Crop Size

Table 2-3 shows MALR and MPWWR paddy area for the last 13 years. Note that only the MALR figures are considered as official estimates, though the MPWWR estimates are instructive in indicating the possible range in the area planted and size of the paddy crop. From 1987 to 1990, the MPWWR area estimate was 15-19 percent greater than the MALR estimate. The divergence was minimal by 1996 and 1997, but some industry experts and knowledgeable observers estimate that the paddy crop was planted on a larger area than MALR announced in 1999. As noted earlier, paddy area in 1999 might have reached 1.7 or 1.8 million feddans. If this were indeed the case, and if yields were as high as projected at 3.736 tons per feddan, the paddy crop could have been as large as 6.35-6.72 mmt.

Numerous industry sources expressed dissatisfaction with the accuracy of MALR figures, particularly in 1998 and 1999, which they consider as politically manipulated. They state that they cannot trust GOE estimates of area cultivated to paddy or paddy crop size. Poor knowledge of domestic production, stocks and prices can hurt traders, millers and exporters and impede storage decisions and forward sales. The lack of adequate public market information contributes to a climate of uncertainty surrounding rice marketing, milling and trade. Individual traders, millers and exporters operate in an environment of incomplete information, which heightens risks and makes other countries perceive Egyptian suppliers as unreliable trade partners.

A broad thrust of agricultural policy in Egypt is for area cultivated to paddy to decline, ideally to about 1.0 million feddans. Area planted to paddy is supposed to decline over time, not rise steadily, as it has during the 1990s. MALR planners intend that national rice output will be maintained on a lower

cultivated area through higher yields. MALR rice breeders and agronomists report that the short-season varieties are higher yielding than the longer-season

Table 2-2: Preliminary Projections of Area and Yield for the 1999 Summer Paddy Crop

Table 2-3: MPWWR and MALR Estimates of Paddy Area Cultivated, 1987-1999

(area in feddans)

Year	MPWWR Estimates			MALR Estimate of Area	% MPWWR Estimate > MALR Estim.
	Allowable Area	Actual Area	Percent Difference		
1987		1,146,740		981,060	16.9%
1988		966,137		837,050	15.4%
1989		1,162,223		977,144	18.9%
1990		1,217,151		1,036,345	17.4%
1991		1,222,057		1,099,659	11.1%
1992		1,315,617		1,214,527	8.3%
1993	1,052,039	1,328,263	26.3%	1,276,295	4.1%
1994	1,084,760	1,318,121	21.5%	1,377,710	-4.3%
1995	1,084,760	1,501,285	38.4%	1,400,020	7.2%
1996	1,086,530	1,418,287	30.5%	1,405,268	0.9%
1997	1,086,530	1,565,933	44.1%	1,527,519	2.5%
1998	1,086,530	1,500,000	38.1%	1,224,955	22.5%
1999	1,086,530	1,788,904	64.6%	1,559,095	14.7%

Sources: MPWWR and APRP/EPIQ, Report No. 6, June 1998.

MPWWR and Water Resources Strategic Research Activity, Report No. 8, August 1996.

Notes: 1) The "MPWWR" estimates for 1998 and 1999 are MVE estimates, based on informal industry estimates (1998) and MVE's calculation of how large area cultivated might have been in 1999 (see footnote 1, first page of this chapter).

2) The "allowable area" for 1998 and 1999 was assumed to be equal to the area allowed in 1996 and 1997.

varieties. As shown in Table 2-2, estimated 1999 yields for all the shorter-season varieties, including Giza 178, Giza 181, and Sakha 101/102, are essentially 4.0 mt/feddan or higher, while those of Giza 177 lag a bit at 3.78 tons per feddan. This contrasts sharply with an estimated 3.09 for Giza 171/172 and 3.21 for the popular *reho*, Giza 173.

While the increasing paddy yields are touted as a MALR success story, some observers regard the ever-increasing yields as unlikely and too good to be true. MALR has reported that yields have increased in every year since 1985 but one. Most observers are convinced that yields dropped in 1998 and were not anything close to the national average of 3.63 mt/feddan announced by the MALR. This being said, yields may again have attained record levels in 1999, which was an excellent growing season for rice.

MPWWR estimates of paddy area cultivated may also be subject to some manipulation, though observers think that the upward bias may be minimal. MPWWR calculates consumptive water use for different crops, and it controls irrigation water delivered by major irrigation channel to rice growing areas. Although this process is becoming more scientific and precise over time, with innovations such as telemetry, it has historically been crude and approximate. Water released from the Aswan High Dam takes about 12-14 days to come down the Nile, work its way through elaborate Delta irrigation channels, and end up in the Mediterranean. MPWWR needs to know the cropping pattern, which is now indicative rather than controlled by the GOE, in order to gauge water use requirements. Area planted to paddy, a high water-consuming crop, is an important variable in the equation for calculating the volume and timing of High Dam water releases. Since there is inevitably unaccounted for water diversion and misuse, not fully captured in the MPWWR models, MPWWR probably has an incentive to overstate, slightly, rice area planted so that releases from the High Dam balance supposed crop water use requirements.

Regardless of whichever sets of figures one chooses to believe, the accuracy and timeliness of estimates of major cultivated crop areas need to be improved. The large divergence between MALR and MPWWR figures in some years suggests that the current data collection system could be strengthened.

3. SHORT-SEASON VARIETIES

The MALR has aggressively expanded area cultivated to short-season rice varieties during the past few years in an effort to conserve water for development of new irrigated lands in Northern Sinai and Toshka.² In a MALR/ARC paper (see Abdel-Azim Tantawi, nd), the short-season varieties, which are harvested in 25-30 fewer days than the long season varieties, are reported to require 25-30 percent less water. This claim seems a bit exaggerated, as an MPWWR study (1999) shows that water savings were 13 percent in areas monitored by the Ministry and the EPIQ team in the summer of 1999 (see MPWWR and Water Policy Reform Program, December 1999).

As noted in section 2.2, yields for the short-season varieties are reported to be significantly higher than those for the older longer-season varieties. Average yields of Giza 177 and Sakha 101/102 were 29 to 40 percent higher than those of Giza 171. Furthermore, the MALR/ARC reports milling yields of 72 percent for the short-season varieties, which are very good. Last, the short-season varieties have short, round grains with low amylose content, which corresponds with desired cooking attributes: short time required for cooking; rice grains retain moisture after cooking and do not dry out or harden; ease in reheating, particularly as the interior ingredient in *mahshi* type cuisine.

3.1 Increasing Area to Short-Season Varieties

As shown in Table 3-1 and the accompanying pie charts (Figure 3-1), the area planted to short-season varieties increased from only 5.0 percent in 1995 to 52.6 percent in 1998. Preliminary data for the major rice producing governorates in 1999 (see Table 2-2) suggest that area cultivated to short-season varieties reached 70.7 percent of total area. This is a very dramatic shift in the space of four years.

3.1.1 Changes in Area Planted to Particular Varieties

Short-season, high-yielding rice varieties include Gizas 177 and 178, as well as the Sakha series (101, 102, and 103). Introduced in 1995, Gizas 177 and 178 increased from a small cultivated base of 27,400 feddans in 1995 to 463,900 feddans by 1997, or 29.9 percent of total area cultivated to paddy (see Table 3-1). In 1998, area expanded further to 563,400 feddans, or 46.0 percent of total estimated area. As shown in Table 2-2, preliminary estimates for area cultivated to Gizas 177 and 178 for 1999 are 623,468 feddans, comprising 42.2 percent of total area planted to paddy (in the seven major rice producing governorates).

Sakha 101 and 102 were introduced in 1997 and cultivated on a small area of 5,900 feddans. The ARC and MALR have pushed these newest short-season varieties hard, expanding area to 78,000 feddans in 1998 and an estimated 420,000 feddans in 1999. Area cultivated to short-duration,

² These new irrigated lands will comprise about 240,000 feddans in North Sinai and 300,000 feddans in Toshka.

Table 3-1: Area Planted and Production by Rice Variety, 1995-1998

Figure 3-1: Area Planted to Long and Short-Season Varieties, 1995-1998

high-yielding, and water-saving³ varieties has increased dramatically to 1,043,449 feddans in 1999, representing 70.6 percent of area planted to paddy in the seven major rice-producing governorates (six in the Delta plus Fayoum).

While short-season varieties have been expanded aggressively, area cultivated to long-season varieties favored by exporters (Giza 171 and 172) have declined steadily (43.8 percent) from 904,700 feddans in 1995 to 479,300 feddans in 1998. By 1998, Giza 172 had been essentially dropped from the varietal mix, being cultivated on only 13,700 feddans. By 1999, area planted to Giza 171 and 172 had further decreased another 35.2 percent from 1998 to an estimated 318,000 feddans. The MALR has canceled these varieties, because of plant diseases (blast), low and declining yields, and high water consumption per feddan cultivated. Farmers retain seed from the previous crop for planting Gizas 171, 172 and 173. Neither CASP nor the private seed companies are allowed to produce certified seed for these varieties.⁴

3.1.2 Industry Views on Short-Season Varieties

Rice millers and exporters speak favorably of Giza 177 as a Giza 171/172 replacement, as it produces an export-grade rice type. Giza 171 still commanded an LE 40-55/mt premium over Giza 177 and Giza 178 during the first few months of the 1999/2000 season, though the premium had decreased to LE 10-20/mt for Giza 171 over Giza 177 by January 2000. Giza 178 gets lower marks than Giza 177, principally because it has a longer and thinner grain which is more prone to break on milling. While Giza 177 is considered nearly as good as Giza 171⁵ as an export variety to Middle Eastern markets, Giza 178 is destined largely for local consumption and some export to Eastern Europe and the NIS markets, which are highly price sensitive but less discriminating.

The Sakha varieties are less well regarded by the rice trade, though most millers and exporters say that the jury is still out on their characteristics relative to the long season varieties and Giza 177. Early in the 1999/2000 marketing season, millers were paying over LE 50/mt more for Giza 177 than for Sakha

³ The average quantity of irrigation water saved by introducing the short-season paddy varieties is about 2,000 cubic meters per feddan. This leads to water savings of 2.09 billion cubic meters, equivalent to 3.8 percent of the annual quota allocated to Egypt (55.5 billion cubic meters).

⁴ A private seed company, Misr Hi-Tech Company, obtained registered Giza 171 seed from CASP and produced certified seed from it in 1999. Before the company could sell the certified seed, the MALR canceled the variety, leaving the private company with unsaleable seed, unrecovered production costs, and unreimbursed breeders' royalties that it had already paid to the MALR. Hi-Tech felt that this was unfair, as the MALR gave no advance notice of its intention to cancel Giza 171.

⁵ Thorough drying to 14 percent humidity or less is imperative. If Giza 177 is harvested early and not dried properly, its milling yield is lower and there is damage in milling. This was evidently part of the problem with Giza 177 in 1998/99. There was damage to many rice grains during the grain-filling stage, and high humidity in August-September 1998, coupled with early harvesting, resulted in much of the harvested grain having high moisture content.

101; by December 1999 that difference had narrowed to zero. Sakha yields were reportedly low in 1998, but are estimated to be much higher in 1999, topping 4.0 mt/feddan. There were some milling problems with the 1998 crop, leading to a higher percentage of brokens than for other varieties and some chalky grains. The rice trade's final appraisal of the much better 1999 crop will be important for the commercial success of these varieties. It is interesting to note that millers report that farmers refer to the short-season varieties as the government's rice, while the long season varieties of Gizas 171, 172 and 173 are referred to as the "people's rice." If the Sakha series continues to produce high yields and milling out-turn improves, this perception should change over time.

3.2 Geographic Pattern of Introducing Short-Season Varieties

Short-season variety introduction is targeted to particular governorates. As shown in Table 3-2, Giza 177 was grown primarily in Kafr El Sheikh (38 percent of the area grown to Giza 177) and Dakhalia (26 percent) in 1998. Giza 178 was produced predominately in Dakhalia (57 percent) and Kafr El Sheikh (32 percent). Giza 171, introduced years ago, was cultivated on an almost equal number of feddans in four governorates in 1998—in Dakhalia, Beheira, Sharkia and Gharbia. Farmers retain Giza 171 seed to plant during the following season; it is not promoted and distributed by the MALR. While area planted to Giza 171 in 1998 was only 23.5 percent of total rice area in Dakhalia (in comparison to areas planted to Giza 177, 41.5 percent, and Giza 178, 18.9 percent), Gharbia's area cultivated to Giza 171 was 83.5 percent of that governorate's total area planted to rice. Sharkia farmers also reserved 69.5 percent of their paddy area for Giza 171 in 1998, and Beheira farmers allotted 54.5 percent of their paddy area to that same variety. Rice millers and exporters confirm that the sought-after export variety, Giza 171, is produced primarily in Gharbia, Beheira and Sharkia.

Preliminary paddy crop area estimates for 1999 confirm a similar pattern, though it is less pronounced than in 1998, largely because Sakha 101/102 were expanded significantly in all the major rice producing governorates except for Fayoum and Damietta. As shown in Table 2-2, the "old varieties" of Giza 171/172 were still prominent in 1999 in Gharbia (56.7 percent of paddy area in that governorate) and Sharkia (48.1 percent of area in the governorate). Area to Giza 171/172 declined precipitously in Beheira (16.5 percent of paddy area in that governorate) and Dakhalia (12.3 percent), a striking change from 1998. The varieties that substituted for decreased area planted to the old varieties were primarily Sakha 101/102, which comprised 20.9 percent of total paddy area in Dakhalia and 58.9 percent in Beheira. Paddy area cultivated to Sakha 101/102 also expanded significantly in Sharkia (30.0 percent) and Kafr El Sheikh (26.6 percent) in 1999.

Area planted to Giza 177, as a percentage of paddy area in a particular governorate, was most prominent in Kafr El Sheikh (30.6 percent), Beheira (23.2 percent), and Dakhalia (15.6 percent). In 1999, Giza 178 was the most prominent variety in Dakhalia, planted on 45.5 percent of area cultivated to paddy in that governorate, and in Beheira, cultivated on 31.1 percent of Beheira's paddy area. Giza 178 was also grown on 25.5 percent of Damietta's paddy area. The Sakha series are being introduced more evenly across governorates in the Delta, with their greatest concentration in Beheira.

**Table 3-2: Paddy Area by Variety and Major Producing Governorate,
Summer Crop of 1998**

The shifts out of Giza 171/172 to other varieties, particularly the Sakha series, has been an impressive achievement, orchestrated by the MALR's National Campaign for Rice. ARC and the extension service can take most of the credit for these shifts. The short-season varieties are now more widely grown than Giza 171/172 within the principal six irrigation command areas where paddy is cultivated. This has saved irrigation water for alternative uses and is an appropriate adjustment as more new lands come on stream.

3.3 Distinguishing Characteristics of Egyptian Rice Varieties

Table 3-3 shows days to maturity for Egyptian rice varieties, as well as important grain quality characteristics. Three key attributes of most Egyptian rice varieties are as follows:

- C a ratio of grain length to width of less than 3.0
- C low amylose content of less than 19.0, except for Giza 172
- C a high gel consistency rate, relative to long-grain rice varieties (such as IRR 28)

A low length to width ratio implies a rounder, shorter grain, preferred by most Middle Eastern consumers. A low amylose content yields a stickier rice that stays together in *mahshi* type cuisine found in the Middle East.⁶

Note that Egyptian agricultural scientists characterize many Egyptian varieties as short-grain (less than or equal to 5.5 mm in length), although they can more correctly be typed as borderline short/medium-grain. The Giza series of 171 to 178 and the Sakha series (101 to 104) fall in the 5.3 to 5.7 mm range. Most rice industry publications refer to Egyptian rice as medium-grain rice, which competes with medium-grain U.S. rice, grown in Arkansas and California, and Australian medium-grain rice.

Long-grain rice is essentially no longer cultivated in Egypt, because it is not preferred in cooking in Egypt and the Middle East region, and Egyptian milling equipment is not designed or calibrated to mill thinner, longer grains well. Millers report that the grains of varieties such as Giza 181 and IRR 28 often shatter and turn to a chalky dust upon milling in Egypt. Giza 182, a new variety which has a relatively high length to width ratio (see Table 3-3), has also performed worse than other Egyptian varieties in tests of milling out-turn. The milling out-turn of 70.4 percent for Giza 178 is also low relative to the other prominent short-season varieties

⁶ Amylose is one of two starches found in the rice grain. *Mahshi* type cuisine involves putting fast-cooking, soft, and sticky rice inside tomatoes, peppers, grape leaves, eggplant, etc. The rice best suited for this type of cuisine is short- to medium-grain *japonica* rice, including most Egyptian varieties. According to Egyptian exporters and MALR rice specialists, long-grain rice is not suitable for *mahshi* cuisine, because it takes longer to cook and cannot be quickly reheated (using conventional ovens; this may not be true for microwave ovens). Long-grain rice also becomes harder than most short- and medium-grain when it cools, which means that it takes longer to reheat than the vegetable in which it is enclosed (leading to uneven cooking and food temperature). Some sources also think that long-grain rice requires more water to cook and reheat than Egyptian short and medium-grain varieties.

Table 3-3: Grain Quality Characteristics of the Egyptian Rice Varieties

of Giza 177 (73.3%), Sakha 101 (73.9%) and Sakha 102 (74.4%).⁷ A final reason for Egypt's not producing long-grain rice is that Egypt is not a competitive producer of long-grain rice in the world market, where Asian countries (particularly Thailand and Vietnam) and the U.S. dominate in international trade, so there is no export demand for long-grain rice grown in Egypt.

⁷ Note that these are experimental test results obtained using the Sataki rice mill at the Rice Technology and Training Center in Alexandria. Millers report that Gizas 171, 172 and 177 have the highest milling out-turn, although the RTTC test results do not bear this out. Perhaps the reason for this divergence of opinion is due to the fact that a lot of commercial mills use Chinese milling equipment which does not yield the better results of the more durable, higher quality and more expensive Sataki mills. Only the largest and best-funded commercial millers can afford to use costly Sataki or Buhler equipment.

4. PERFORMANCE OF THE RICE MARKET DURING THE 1998/99 SEASON

This section discusses the performance of the rice marketing system during the 1998/99 season and offers some interpretation of recent developments in rice marketing during 1999/2000.

4.1 The Early Part of the 1998/99 Marketing Season

The *Rice Subsector Baseline Study*, published in March 1999, covered the 1998/99 rice marketing season through the end of December 1998. The first part of the marketing season—from mid-August 1998 to late December 1998—was characterized by low wholesale paddy prices (LE 450-500/mt into-mill up to December), and by extension, producer prices. The carryover stocks from the 1997/98 marketing season were reportedly high at over 0.5 mmt of paddy. Note that the estimate from the supply and use table (Table 4-1) is over one million mt for ending stocks in 1997/98. The fact that ending stocks are calculated as greater than 1.0 mmt for four straight years, from 1994/95 through 1997/98, in the supply and use table (Table 4-1) suggest that paddy production is over-estimated, rice consumption is under-estimated, or some combination of the two (plus other, more minor factors). The public sector, which had bought 517,600 mt of paddy in 1997/98, largely dropped out of the market, as the public sector mills (most of which have become ESA mills) processed less paddy in 1998/99—about 96,000 mt. Offsetting this decline in demand for paddy was the expectation among many commercial millers and exporters that exports would rival or surpass the record 1997/98 level of 409,200 mt. Large commercial millers bought significant quantities of paddy in anticipation of strong export demand in 1998/99.

4.2 Factors Affecting High Spring 1999 Rice Prices

4.2.1 GOE Announcements Contributing to Paddy Price Rises from December 1998 Onward

By the end of 1998, paddy and white rice prices had begun to rise. Part of this price increase appears to have been triggered by GOE announcements. Prime Minister Kamal El Ganzouri announced in mid- or late December 1998 that the producer paddy price should be no lower than LE 600/mt (see August 1998 article in *Al Ahrām* with earlier announcement by Minister Youssef Wally in Annex 5).⁸ This appears to have been a GOE attempt to influence producer prices, which were low prior to December 1998 and considered as unfair by some, given producers' increasing costs.

⁸ MVE spent a lot of time trying to get written evidence that former Prime Minister El Ganzouri made the public announcement that paddy prices paid to producers should be LE 600/mt or more. MVE checked APRP/RDI's weekly news summary, *Al Ahrām*'s microfilm library, the Committee for Agriculture and Irrigation of the People's Assembly, and the Ministry of Supply and Home Trade. No one has any record of this announcement, though participants in the rice industry and noted analysts report that the former Prime Minister made such a statement, which did influence farmer and trader behavior.

A second group of GOE announcements by the Minister of Trade and Supply and the Prime Minister in December 1998 (see newspaper articles in Annex 5) concerning an anticipated large volume of rice exports to Indonesia—400,000 to 500,000 mt—also stoked domestic demand for paddy. Indonesia did enter world rice markets in a major way in 1997/98 and imported a record 5.9 mmt of white rice that year, followed by over two million tons in 1998/99. Indonesia approached the GOE in a government-to-government deal, asking Egypt to supply lower-grade medium-grain japonica rice, with a broken percentage of 25-30 percent, in volumes that were equivalent to the entire quantity of Egyptian rice exports in 1997/98. While many larger exporters and millers regarded this as an order that would never be filled, the announcement by Minister Goueli did influence the market, encouraging some traders to buy paddy in anticipation of large price run-ups. Paddy wholesale prices did rise strongly from December 1998 through February 1999.

4.2.2 GOE Announced Production Figures vs. Industry Estimates

Another factor contributing to the stronger than normal seasonal paddy price rise was the poor 1998 harvest. The GOE reported paddy output of 4.45 mmt on only 1.225 million feddans, where the average yield was supposedly 3.6 tons/feddan. Virtually everyone in the rice industry questions this yield estimate, with some informants reporting 1998 paddy yields as more in the range of 2.2-2.4 mt per feddan. Private sector informants also dispute the low area estimate of 1.225 million feddans, stating paddy was probably grown on about 1.4-1.5 million feddans. With a yield of 2.2-2.4 mt/feddan on 1.4-1.5 million feddans, national output in 1998 was more likely 3.1 to 3.6 mmt, 19 to 31 percent below the MALR announced estimate.

One GOE rice researcher thinks that the total paddy crop of 1998 was close to the MALR estimate. He argues that rice consumption in rice-growing areas, particularly by producer households, increased relative to earlier years, because producer prices were so low after the harvest. Rather than sell at low prices, producers preferred to store paddy, mill it as they needed it, and consume a higher proportion of their own rice. Furthermore, because so much rice was prepared by rural consuming households, there were leftovers that were fed, in part, to livestock.

Another hypothesis about the 1998 paddy crop, advanced by a private miller, was that much of it was harvested moist (above the recommended 14 percent humidity rate). Any storage of too moist paddy led to poor milling out-turn, with a higher proportion of immature and damaged kernels. Once milled, rice with too high a moisture content does not store well. This miller also believes that physical losses of paddy and milled rice in storage, handling and transport are high.⁹

Although MVE and the industry lack independent estimates of paddy area and yield, with which to question the MALR figures, there is concern that the GOE inflates area and production figures in some years. A clear lesson from the 1998/99 rice production and marketing season is that poor information about the size of the paddy crop can exacerbate price volatility for producers, consumers and industry participants. MVE is in the process of reviewing how the MALR makes its area and production

⁹ Note that we assume paddy losses of 10% per annum, mainly in storage, during the 1990s in the supply and use Table 4-1, as well as milled rice losses of 5% in storage, handling and transport.

estimates for cotton and wheat. Given the large area planted to paddy during the summer season, and the GOE's expressed objective of lowering water use on rice, improving rice area and production forecasts would appear to be a high priority for the GOE (and for MVE).

4.2.3 Higher Paddy Prices and Alleged Hoarding of Paddy Stocks

Most public officials and some analysts attribute the strong rise in paddy prices from December 1998 on to "speculative" storage on the part of traders, both big and small.¹⁰ Most industry sources think that the rise in prices was due more to the short crop of 1998 and a lot less to the storage behavior of traders. In fact, speculative storage was insufficient in 1998/99 to prevent an unusually strong cross-seasonal price rise. More trader storage of paddy, purchased after harvest and sold later in the marketing season, would have dampened the seasonal run-up in prices and forestalled the rice "crisis" in May 1999.

Storage of paddy by traders plays an important part in smoothing inter-seasonal rice price behavior. By holding stocks for 4-10 months, private traders can release stored paddy on to the market as supplies become scarce later in the marketing year (from April through August). Paddy prices are of course higher later in the season than right after the harvest; this provides private traders with an economic incentive to store paddy. Storage of a perishable commodity has real costs—physical facility rental fees, interest on the loan to purchase the paddy that goes into storage (or the opportunity cost of traders' own working capital), and losses in storage. It is normal and desirable that traders (or farmers, millers) receive a positive return to storage; if not, they will not perform this important marketing function, and seasonal price swings will be exacerbated. Unfortunately, there appear to be quite a few GOE officials who do not understand these basic concepts of how private storage affects the inter-seasonal price behavior of a storable commodity such as rice, contributing to a more orderly, stable and predictable pattern.

It is also important to point out that the obvious fact that paddy prices drop each September as the new crop is harvested provides traders with every incentive to liquidate their stocks by July/August. Returns to paddy storage are generally positive within market years but likely to be negative across market years, as storage costs and losses mount over longer periods. The only conceivable rationale for holding paddy stocks across years (rather than within a marketing year) would be if farmers and traders anticipated a poor harvest early in the growing season (June-July). In a country where all rice production is irrigated, such as Egypt, and irrigation water deliveries are reliable, it is hard to imagine a year when private agents would know in June or July that the rice crop would be poor. The one exception would be if paddy area planted were judged to be unusually low, though no one has reliable access to national area estimates so early in the production season.

Returning to the dynamics of the 1998/99 marketing season, exports got off to a strong start following the harvest in anticipation of a second record-breaking export year. This contributed to brisk demand

¹⁰ MVE has copies of newspaper articles in its files that state that private "speculators" (traders) were responsible for the spring 1999 run-up in paddy and rice prices. A senior GASC official also expressed this view in a June 1999 interview with MVE.

for paddy. The low paddy prices from September through November 1998 were due in part to the large volume carryover stocks of the record 1997 crop. It is reported by some sources (though difficult to substantiate *ex post*) that much of the paddy milled for export in the earliest part of the 1998/99 season was year-old stocks. By the time the preferred, longer season export variety, Giza 171, was harvested, milled and ready for export (by late October/early November 1998), exports of other varieties had already reached significant levels.¹¹

There is no empirical evidence that large numbers of private traders hoarded paddy stocks during the 1998/99 marketing season. As shown in the Table 4-1 of the next section, it is possible that rice stocks were drawn down to near zero by the end of the 1998/99 marketing season, in large part because the harvest was poor. Note that commercial millers and exporters have no financial incentive to hoard milled rice stocks, because this ties up scarce working capital, and the quality of milled rice deteriorates quickly in storage. There still is a widespread belief among many public officials that private traders speculate and de-stabilize the rice market.¹² They argue that sudden price increases, perhaps spurred by changes in fundamental factors, induce speculative buying and further price rises. As evidence of this phenomenon, some public officials point to what they call a dramatic decline in domestic milled rice prices in late May and June 1999, following GASC's call for tenders on rice imports. Retail rice prices reportedly declined from LE 1.8-2.0/kilogram to LE 1.6/kg. While the GASC announcement may have shaken some speculation out of the market and contributed to a modest retail rice price decline in June 1999, the major contributors to high rice prices in the spring of 1999 were the small 1998 crop and limited paddy stocks—key fundamental factors. Note also that the importation of some 34-37,000 mt of Chinese medium-grain rice in July 1999 contributed to lower retail rice prices following the spring rice crisis.

It took exceptionally high rice prices and a much stronger than usual rise in rice prices in 1998/99 to induce large-volume imports.¹³ If the tariff on imported rice had been lowered from 20% to 10% or lower, as had been agreed by the GOE and USAID under Tranche III of APRP, rising domestic rice prices would have triggered commercial rice imports earlier, which could have dampened domestic rice price increases in the spring of 1999. Note that APRP/RDI prepared an internal memoranda urging the GOE to reduce the tariff on rice, but that the GOE was unable to implement this benchmark.¹⁴

¹¹ Note that rice exports are typically reported in the aggregate and not disaggregated by variety. In 1999, GOEIC tabulated, but did not publish (see Table 5-3), rice export data by type (*camolino*, natural, cargo, 100% broken) and grade.

¹² A counter-argument could be that GOE announcements, such as the minimum floor price announcement of Prime Minister El Ganzouri and Minister Goueli's announcement of massive rice exports to Indonesia, do more to de-stabilize the market than the behavior of any private rice traders.

¹³ Imports of rice into Egypt were below 1,000 mt of specialty rice (typically *basmati* and Uncle Ben's U.S. long-grain rice in retail boxes) for every other year during the 1990s.

¹⁴ Lawrence Kent of the RDI Unit prepared two excellent and incisive memoranda that presented a cogent case for lowering the tariff on rice. These memos were sent to the attention of Dr. Saad Nassar, who used them to convince the Ministers of Agriculture and Land Reclamation and

The lack of empirically based information about farmer, trader and miller storage behavior makes it difficult to arrive at an internally consistent set of rice supply and use estimates. As part of developing a situation and outlook reporting capacity in the MALR, it would be useful to do a survey of rice farmers' and traders' storage and sales practices.¹⁵ If a baseline were established for, say, the first quarter of 2000 (midway through the 1999/2000 marketing season), it could be periodically updated to establish a time-series. Empirically based estimates of farmer and trader storage could be prepared for MALR, The Ministry of Supply and Home Trade, The Holding Company, MEFT and private sector use.

4.2.4 GASC Call for Tenders in May 1999

GASC announced its first ever call for tenders to import 50,000 mt of long-grain rice in late May 1999. Offers to supply Asian rice fell in the \$234-254 per mt range, while American rice was quoted at \$354/mt. GASC did not accept any of the tenders, reporting that the offer prices were too high (for the quality of rice offered) and that only two of the suppliers met the required quality specifications (see 2 June 1999 *Egyptian Gazette* article in Annex 5).

Egyptian rice traders thought that GASC announced tenders in order to drive down domestic prices, which were high and rising in the spring of 1999. GASC reported that hoarding of paddy by traders underlay the rice crisis. GASC officials stated that the agency signaled that it might enter the market in order to obtain information on world market prices. An underlying, unmentioned reason for the tender announcement appears to have been to counteract speculative storage and reduce high-price sales in a period of perceived domestic rice shortage. According to the Vice-Chairman of GASC, paddy wholesale prices dropped from 1,100 LE/mt to 900 LE/mt within a week of the GASC announcement. Domestic paddy prices appear to have dropped on the expectation that the GOE would import paddy to offset the rice shortage and force down the domestic price level.

4.3 Rice Supply and Use in the 1990s

The *Rice Subsector Baseline* report presented supply and use estimates from 1975/76 to 1997/98. Table 4-1 presents a modified set of estimates for the period from 1990/91 to 1999/2000 (forecast). This set of rice supply and use estimates differs from the baseline report estimates in several respects:

- c While MALR national average paddy yields are noted, MVE adjusts these downward by 10 percent to account for what we believe is a systematic bias towards MALR overestimates of national paddy production. The paddy production figures shown in Table 4-1 are, therefore, 10 percent lower than the MALR published estimates.

Trade and Supply to support tariff reduction. Both Ministers sent letters urging reform to the Minister of Finance, who did not take any action.

¹⁵ The National Agricultural Statistics Service (NASS) of USDA publishes *Rice Stocks*, a quarterly bulletin on the levels of paddy and milled rice stocks (by type—whole kernel rice, second heads, screenings and brewers' rice) held on farms, in mills and attached warehouses, in warehouses not attached to mills, and at ports or in transit. NASS surveys cover six major producing states (Arkansas, California, Louisiana, Mississippi, Missouri, Texas).

Table 4-1: Paddy Supply and Use Estimates, 1990/91-1999/2000

- C Estimated paddy losses are assumed to be 10 percent, lower than the 15% assumed in the baseline report.
- C Average national milling yield is assumed to be 65 percent, below the 67% assumed in the baseline.

The estimates presented for 1998/99 use a paddy production guesstimate of 3.5 mmt, well below the official MALR estimate of 4.45 mmt. Using the MALR area estimate of 1.225 million feddans, this lower production figure gives a calculated national average yield of 2.86 mt/feddan, which may strike some readers as shockingly low. The 3.5 mmt paddy output estimate and the derived (or calculated) yield of 2.86 mt/feddan are based on industry and farmer reports of poor paddy yields in 1998. The official MALR estimate of an average national yield of 3.63 is considered inflated by private sources.

The combined effects of the poor paddy harvest, continued rising national average rice consumption (to 40.1 kg. per person), and strong exports of 308,200 mt led to a massive drawing down of paddy stocks in Egypt. The estimated milled rice equivalent stocks were likely to be nearly zero by the end of the 1998/99 marketing season. This contrasts sharply with ending stock estimates of over one million mt (in milled rice equivalent terms) for the previous four seasons, 1994/95 to 1997/98, which are actually 54 percent higher once converted to paddy equivalent terms (divided by 0.65).

The estimates presented in Table 4-1 need to be taken as illustrative and indicative. It should be stressed that no one in Egypt has reliable estimates of paddy storage from year to year. This is a very important variable that affects paddy and milled rice supply. Without solid, empirically based information, commodity supply and use exercises are rough approximations of reality. The estimates we present are more internally consistent than estimates arrived at by using MALR production figures (see Table 4-6a in the *Rice Subsector Baseline*), but they can certainly be improved upon. A first step in the improvement process should be strengthening MALR area and yield estimates. Periodic surveys of rice producers and traders could also be valuable in gaining a better understanding of their storage practices and quantities of paddy in storage at particular points in time.

4.4 Analysis of Seasonal Price Changes in 1998/99

As discussed at length in the *Rice Subsector Baseline*, GOE price data do not generally show a very pronounced seasonal pattern for storable commodities such as rice. This lack of apparent seasonality is counter-intuitive and does not follow what has been observed in many other countries. The careful analyst is drawn to the conclusion that official price data are not very reliable, perhaps collected from limited samples or by word-of-mouth and not through site visits. The most reliable monthly price data are collected by CAPMAS, which obtains retail prices in Cairo and Alexandria (unpublished) and in rural markets in 17 governorates.

4.4.1 Seasonal Variation in Paddy Wholesale Prices

Due to the absence of reliable wholesale price data, MVE has attempted to reconstruct, through interviews with traders and millers and consultation of Cereals Industry Chamber/Rice Branch monthly meeting notes, a wholesale paddy price series for the 1998/99 season and the beginning of the 1999/2000 marketing season. These prices are shown in Table 4-2. MVE has more confidence in the into-mill wholesale prices than the retail price series generated by GOE agencies (see section 4.6.2).¹⁶ The paddy wholesale prices, plotted by major traded variety in Figure 4-1,¹⁷ show a pronounced seasonal rise. Note that the prices of different varieties moved in tandem, with Giza 171 commanding the highest prices and Gizas 177 and 178 fetching lower prices. The premium paid for Giza 171 ranged from as little as LE 10-20/mt over the shorter season varieties (Gizas 177 and 178) in October 1998 to as high as LE 85-90/mt in December 1998.

As can be seen from the price indices, into-mill paddy prices increased 87 percent for Giza 171, 86 percent for Giza 177, and 89 percent for Giza 178 from October 1998 to June 1999. Paddy prices more than doubled from October 1998 to the end of the 1998/99 marketing year in August. Prices for July and August 1999 should be treated with caution, however, because traded volumes were very thin by that point in the marketing season. In the first two months of the 1999/2000 marketing season, nominal prices were also 36-57 percent higher than they were at the outset of the 1998/99 season. Note that early 1999/2000 paddy prices began high, dropped in November and December 1999 (10 percent for Giza 171, 18 percent for Giza 177, and 11 percent for Giza 178), and returned to higher early season levels by January 2000.

Week-to-week price data might show larger discrete jumps or drops in prices that correspond with GOE announcements or proposed (threatened) interventions (see Amr Saleh, 1999) that change farmers' and traders' perceptions overnight and lead quickly to changes in behavior. Note that the volume of into-mill transactions was greatest from mid-September 1998 through the end of December 1998, substantially lower from January through April 1999, and limited from May through July 1999, declining to very little at all in August 1999.¹⁸ In other words, the vast majority of the paddy moves from farmers to millers in the 3-4 months following the harvest. By May or June 1999, traded volume had declined greatly; the commercial rice market was very thin at that point.

¹⁶ The figures in Table 4-2 should be treated with caution. They are indicative, collected from Rice Branch, Cereals Industry Chamber meeting notes and generated from interviews with millers and exporters. They are not a substitute for scientifically collected price data, using valid sampling methods. In the absence of such data, they are better than nothing at all, however.

¹⁷ Although the paddy prices are reported as a range in Table 4-2, we plot the mean for illustrative purposes. Note that actual farmgate (or producer) prices were likely to have been 10-30 LE/mt lower, accounting for transport and handling costs and a wholesaler net margin.

¹⁸ Most commercial mills close for about a month, typically in August, to perform a complete overhaul and maintenance on their milling machinery. August is a month of virtually no activity in the rice trade and milling businesses, so it is a good month to prepare for the coming peak processing season (September-December).

**Table 4-2: The Range of Into-Mill Wholesale Paddy Prices, by Variety,
October 1998-January 2000**

Figure 4-1: Into-Mill Wholesale Paddy Prices for Three Widely Traded Varieties, 1998/99

MVE cannot stress enough the importance of good market information to inform policy-makers, producers and private traders. We also caution the GOE on making public announcements—that may not be strongly empirically based or that may reflect more wishful thinking than actual market fundamentals or realities—that are able to move markets.¹⁹ The political economy of the food system has changed significantly during the past decade. The GOE controls less of the trade and processing of rice, maize and some other commodities than it did during the 1980s. High-level pronouncements still carry a lot of weight in Egypt, but they may be counter-productive and influence the market in adverse, unintended ways.

4.4.2 Seasonal Retail Price Variation

Milled rice is typically not stored for long periods in Egypt, so price variation in retail prices should mirror paddy wholesale price variation. We present CAPMAS's monthly retail prices from January 1995 through May 1999²⁰ in Table 4-3. Note that the rural retail prices for the 17 governorates are collected bi-monthly, so there are missing observations for half the months. These prices should be treated as indicative only, in part because they are collected bi-monthly, but also because they show rather less seasonal variation than one would expect (see plot of rice prices in three governorates, Figure 4-2). Retail prices rose steadily from the spring of 1995 through the end of the 1996/97 season, a year of alleged high paddy and rice prices and hoarding. Retail prices remained high in November 1997, a surprising finding following a record paddy crop. Prices then dropped in many governorates by January 1998, particularly sharply in Giza (12 percent). This is counter-intuitive, because the month of Ramadan coincided with most of January 1998. Prices rose back up to the pre-Ramadan (November 1997) levels by March 1998 in nearly all governorates and remained flat or increased slightly to November 1998, before dropping again in January of 1999 (13 percent in Giza and 10 percent in Beheira), again overlapping in part (first half of January) with Ramadan. Retail prices dropped again by March 1999 in 12 of 17 governorates, a finding which conflicts with trends in into-mill paddy wholesale prices, before rising sharply by May 1999 (13 percent).

National average MTS minimum and maximum wholesale and retail prices for packed and unpacked rice are shown for comparative purposes in Tables 4-4a and 4-4b, with plots shown in Figures 4-3 and 4-4. Packed rice refers to rice in 25 kg. (wholesale) and 5 or 2 kg. (retail) packs. As discussed in the *Rice Subsector Baseline* report, MVE does not place much stock in these MTS prices, for which data collection has never been clearly defined.²¹ Furthermore, it is

¹⁹ An October 1999 announcement by the new Minister of Supply and Home Trade to lower the retail price of rice sold in GOE stores will probably not have much of an effect, because a low proportion of rice is sold through public stores.

²⁰ The fact that the most recent published CAPMAS retail prices were for May 1999 as of December 1999 illustrates the long lag between data collection and their dissemination.

²¹ It is not clear if different MTS offices in different governorates apply the same methods in collecting these prices. Are they gathered through field observations? Are they collected during the same period of each month, or are they an average of minimum and maximum prices collected each week of the month? These questions have never been satisfactorily answered. It is also not clear if any weighting

Table 4-3: CAPMAS Monthly Rice Retail Prices, January 1995-May 1999

of the data is done, based on market importance (relative volumes passing through governorate markets).

**Figure 4-2: CAPMAS Retail Prices for Selected Governorates from
January 1995 to May 1999**

unconventional to report minimum and maximum prices only and not to report a mean monthly price. Price ranges may be reported, but a point estimate is necessary for plotting the data and doing price analysis.

Despite these reservations about using MTS data, they are presented as a consistency check against the CAPMAS data and MVE's own estimates of paddy wholesale prices. The MTS data, particularly the packed rice series, show high median consumer prices in 1997, with prices dropping in 1998 and remaining relatively low through early 1999, but then a pronounced rise of 27.6 percent from March to June 1999 (145 to 185 piasters per kilogram). The wholesale prices for packed rice show a similar pattern, with a 48.7 percent seasonal rise in median prices from October-November 1998 to May 1999 (113 to 168 piasters per kilogram). Note that the seasonal upswing in rice prices in 1998/99 is not quite as pronounced as is it for MVE's into-mill paddy wholesale prices (see Table 4-2 and Figure 4-1).

Another MTS source of data is minimum and maximum wholesale and consumer prices for four governorates—Cairo, Giza, Alexandria and Qaloubia—shown in Annex 2. Minimum consumer prices for Giza rose 50 percent from December 1998 to July 1999, 50 percent in Cairo, 60 percent in Alexandria, and 45 percent in Qaloubia. The increase in maximum consumer prices was proportionally less—33, 13, 31 and 46 percent respectively. This perhaps reflects the fact that these maximum prices are collected in retail establishments where consumers are less price sensitive and are willing to pay for better packaging and convenience. In other words, one would expect to see less intra-annual price variability for rice sold in higher end stores and markets to consumers with higher incomes.

These same data show that the minimum wholesale prices for rice rose 75 percent in Cairo over the same period (December 1998 to July 1999), 50 percent in Alexandria, and 67 percent in Qaloubia. Both these MTS wholesale and consumer price data show plausible levels of cross-seasonal price variability, although the variability is more pronounced in the MVE into-mill paddy wholesale series. These MTS series show rather flat prices from November 1998 to March 1999 in Cairo and Giza, with the most pronounced rises in May 1999.

Table 4-4a: MTS Monthly Wholesale & Consumer Packed Rice Prices, 1997-1999

Table 4-4b: MTS Monthly Wholesale & Consumer Unpacked Rice Prices, 1997-1999

Figure 4-3a: MTS Packed Rice Prices, 1997-1999

Figure 4-3b: MTS Unpacked Rice Prices, 1997-1999

5. RICE EXPORT PERFORMANCE

Egypt's performance as a rice exporter from the 1980s through 1997/98 is described in detail in the *Rice Subsector Baseline Study* (March, 1999). This section will present final 1998/99 export data and provide a few observations on the opening months of the 1999/2000 season.

We also present some CAPMAS data on rice export quantities, total values, and unit values for 1995 to 1998. Note that the CAPMAS reporting year (January-December calendar year) does not correspond with how the export volume data are reported by MTS/GOEIC, which is by marketing year—now September 16 of one year (e.g., 1998) to September 15 of the following year (e.g., 1999).

The calculated export unit values, presented in Annex 2, show in some cases that rice shipped to countries with higher incomes and ability to pay for higher quality rice commands higher prices (unit values). For example, the average declared unit value of rice shipped to Saudi Arabia was \$559/mt in 1998. This is likely premium *camolino* rice, grade 1, milled in the mills with the most modern Japanese (Sataki) and Swiss (Buhler) machinery.²² Moderately demanding importing countries, such as Turkey, Syria, and Jordan, obtained rice exported from Egypt at average prices of \$333-343/mt (FOB) in 1998. Rice shipped to these destinations is usually *camolino*, grade 2. Lower volume importers with high incomes, such as Libya, Lebanon and Kuwait, obtained Egyptian rice at higher prices, \$371-388/mt. They probably purchase mainly *camolino*, grade 1. Lower-income, less discriminating customers such as Romania, Sudan, Ukraine, Russia, and Bulgaria, imported rice from Egypt priced (FOB) at generally less than \$300 per mt (\$306/mt on average for Romania). This rice was likely *camolino*, grades 3 to 5, or natural rice, grades 3 and lower.

Despite average unit values for exports to many foreign markets which correspond to our expectations and knowledge that certain types of rice are shipped to those destinations, there are anomalies in the some of the data. For example, the average unit value of rice exported to Spain is reported as \$186, \$432 for Palestine, and \$379/mt for Albania. MVE knows that some of the rice exported to Spain was cargo in 1998, although CAPMAS reports that only milled white rice was shipped. The main conclusion to be drawn here is that export value data are not collected with sufficient attention to detail. In particular, rice shipped as cargo often is recorded as white rice, which yields export unit values that are too low to be plausible for milled rice. Other anomalies, such as seemingly too expensive rice shipped to Palestine, cannot be explained. Some price differences may reflect the fact that the rice

²² These mills also typically have a sortex type of machine that sorts out discolored grains, immature grains, chalky grains, and impurities as a final step in the milling process. Sortex is the name of the English company that produces such a machine. A cheaper, similar type of machine is made by the Japanese. According to one commercial miller, quite a few smaller commercial mills have purchased sortex type machines that cost as much as the entire (remaining) investment in milling equipment. These smaller mills are supplying rice to large exporters who demand quality and that product specifications are met. This is a positive development, showing that smaller private mills are increasingly responsive to exporters' quality specifications and price premia paid for higher grades. The investment in sortex machines goes against the Holding Company's contention that most private mills cannot meet export market standards.

offered is milled from different paddy varieties (Giza 171-based *camolino* is more expensive than Giza 177 or 178-based *camolino*). Furthermore, customs may make recording errors, particularly in noting the correct type of export rice (*camolino*, natural, cargo or paddy).

5.1 1998/99 Marketing Season

5.1.1 Exports by Destination

Rice exports declined 24.5 percent from 408,193 mt in 1997/98 to 308,223 mt in 1998/99. Strongly rising wholesale paddy prices led to a sharp decline in export volume after March 1999.²³ As in 1997/98, Turkey remained the largest single export market for Egyptian rice, importing 66,899 mt (see Table 5-1), or 21.7 percent of total Egyptian rice exports.²⁴ Traditional Arab markets Syria and Jordan continued to be key Egypt destinations for Egyptian rice, with exporters shipping 58,161 mt to Syria and 19,735 mt to Jordan. Exports of Egyptian rice to Romania exceeded 50,000 mt for the first time (52,380 mt, slightly higher than the 49,321 mt of 1997/98). A minor market for Egyptian rice before 1995/96, Eastern European and NIS countries were the export destination for nearly as much Egyptian rice as the traditional Arab customers in 1998/99 (see Arab 1 in Table 5-1). The former countries received 86,623 mt of Egyptian rice, while the four major Arab markets (Syria, Jordan, Lebanon, Palestine) imported 93,561 mt. African countries, particularly Sudan, Kenya, South Africa, and Senegal, imported 35,973 mt of Egyptian rice, nearly 12 percent of total exports.²⁵

5.1.2 Export Market Shares by Company

The largest private exporters in 1998/99 were El Fostat and Wakalex, who shipped 54,690 mt and 49,294 mt respectively. Their combined export market share was 33.7 percent in 1998/99 and 40.1 percent in 1997/98. These two exporters have held the number one and two spots since

²³ Total export shipments increased from 283,353 mt as of 20 May 1999 to 308,223 mt as of 15 September 1999. Hence, 91.9% of export shipments for the 1998/99 marketing year had been made by mid-May 1999.

²⁴ Export volume data, broken out by exporting company and export destination, are published by MTS/GOEIC. There appears to be about a two-month lag in the publication and distribution of the export data.

²⁵ This was the first time during the 1990s that African countries took over 10% of Egyptian rice exports. This has some symbolic importance, because the GOE is trying to promote trade with COMESA countries. Nevertheless, most exporters do not think that countries such as Kenya will be good export prospects in the medium term, because rice importers want to import cheap, low-quality rice with a high proportion of brokens. Most of the rice exported from Egypt is high-quality *camolino*, grade 2 rice, not natural rice with a high proportion of brokens. This being said, the 15,575 mt of rice exported to Kenya in 1998/99 was natural rice, grades 5 and 6.

Table 5-1: Egyptian Rice Exports by Country of Destination

1995/96.²⁶ Mabrouk continued as the number three exporter, shipping 27,205 mt of rice, mainly to Eastern European markets. Mabrouk is also now the largest private commercial rice miller in Egypt, having increased processing capacity to 300 mt of paddy per day in January 1999.

Public sector companies continue to play an export role, albeit a minor one, having shipped 33,676 mt or 10.9 percent of total exports in 1998/99. The exports of public companies dropped from 89,339 mt in 1997/98, a marketing season during which public sector companies bought 517,600 mt of paddy. Purchases by the public sector companies in 1998/99 were far lower (only about 96,000 mt by one account).

As shown in Table 5-2, the top five private exporters shipped 51.5 percent of total rice exporters in 1998/99, a virtually identical proportion to 1996/97 (52.6%) and 1997/98 (51.0%). The shipped rice proportions of the second five (#6-10) and next ten (#11-20) private exporters were roughly comparable to those in 1996/97 and somewhat higher than in 1997/98. Over 60 private companies exported rice during the 1998/99 marketing season, which resulted in a workably competitive rice export business.

5.1.3 Egyptian Rice Exports by Type and Grade

Although GOEIC does not report its rice export statistics by type and grade in its periodic reports during each marketing season, it did prepare a summary table for the 1998/99 season.²⁷ MVE was able to obtain these data for the 1998/99 marketing season only. The distribution of Egyptian rice exports by type and grade is shown in Table 5-3. Three-quarters of Egyptian rice exports were as *camolino* rice, which is treated with paraffin oil. This gives natural rice a sheen or brightness that most Middle Eastern and Mediterranean customers desire. Fifty-three percent of all rice exports (and 70.7% of total *camolino* exports) were as *camolino* grade 2. Only 6.5% of Egypt's exports were as *camolino* grade 1 (and 0.2% as grade 1 natural rice), while 13.8% were as *camolino* grade 3.

In addition to *camolino*, Egypt exports natural rice (16.8%), 100% brokens (3.2%), and cargo or brown rice (4.9%). Natural rice falls predominantly into three grades, #2-4. The 100% brokens are shipped to lower-income, Sub-Saharan African countries, such as Senegal.²⁸ Exporters shipped low-grade natural rice to Kenya. Cargo is shipped to Romania, where there is no duty on importing cargo but a high duty (15%) on importing milled rice. The cargo is further processed at mills owned by

²⁶ In 1996/97, Kamitrade was the number two exporter and Wakalex was the number three exporter, based on incomplete data (149,132 mt vs. the later reported total of 166,163 mt).

²⁷ GOEIC's Alexandria office told MVE that this is the first year that it has tabulated rice exports by type and grade.

²⁸ 100% brokens are shipped by large volume exporters to African countries. They collect the brokens from a large number of mills that have sorting equipment that separates out the broken grains. No rice mills in Egypt are designed to produce 100% brokens as their primary output.

foreign investors (including one Egyptian company and another firm based in Lebanon, that exports rice from Egypt and other producing countries to Romania).

Table 5-2: Export Shares of Private and Public Rice Exporters

Table 5-3: Egyptian Rice Exports by Type and Grade, 1998/99

Rice Type	Grade	Percent Brokens	Volume Exported	Percent of Total	Percent of Subtotal
Camolino	1	< 3%	19,573.6	6.5%	8.6%
	2	< 6%	160,076.7	53.1%	70.7%
	3	< 12%	41,443.3	13.8%	18.3%
	4	< 20%	5,008.0	1.7%	2.2%
	5	< 30%	200.0	0.1%	0.1%
Subtotal			226,301.7	75.1%	100.0%
Natural	1	< 3%	612.2	0.2%	1.2%
	2	< 6%	10,084.5	3.3%	19.9%
	3	< 12%	21,775.7	7.2%	42.9%
	4	< 20%	15,828.0	5.3%	31.2%
	5	< 30%	2,330.0	0.8%	4.6%
	6	< 40%	100.0	0.0%	0.2%
Subtotal			50,730.4	16.8%	100.0%
Brokens		100%	9,522.9	3.2%	
Cargo	2		14,646.0	4.9%	
TOTAL			301,200.9	100.0%	

Source: GOEIC, MEFT.

Notes: 1) Camolino is natural rice treated with 5 liters of paraffin oil per ton.

2) Cargo is dehusked, brown rice. It is typically further dehulled & polished to produce white rice.

3) These data cover exports through 31 July 1999 and are not complete for the entire season (to 15 September 1999).

5.2 Beginning of the 1999/2000 Export Marketing Season

5.2.1 High Early Season Paddy Prices

The prospect of a very large paddy crop is good news for Egyptian rice exporters, though wholesale paddy prices remain high relative to opening 1998/99 levels. Exporters maintain that paddy prices cannot exceed LE 700/mt if they are to remain internationally competitive, and at levels over LE 650/mt margins are thin. Paddy prices ranged from about LE 630 to 720 per mt in the early 1999/2000 marketing season. As long as the public sector mills are actively buying paddy, most informants believe that prices will remain high. Once these mills' funds are exhausted, traders and exporters anticipated that paddy prices would drop. This did happen in December 1999, though into-mill prices appeared to be rising to higher levels that threatened Egypt's competitiveness as a rice exporter in January 2000. Exporters and large commercial millers bought less paddy in the first quarter of the 1999/2000 season than they did in the early 1998/99 season. A good rice production year

worldwide, particularly medium-grain rice production in the U.S. and China, is keeping international market conditions soft, as described below.

5.2.2 Rice Exports Lower than in 1998/99

Export figures from GOEIC, now part of the MEFT, for the first month of the 1999/2000 export marketing season show that 17,751 mt were shipped from mid-September to mid-October 1999, 31.6 percent less than the 25,940 mt exported during the first month of the 1998/99 season. By the end of the first quarter of the export marketing season (through 31 December 1999), rice exports still trailed the pace set by first quarter 1998/99 exports (132,216 mt vs. 119,732 mt in 1999/2000). Extrapolated over the entire season, this lower exported volume would lead to reduced exports of about 280,000 mt for 1999/2000.²⁹ This figure is consistent with exporters' informal projections for this season, which range from 200,000 to 300,000 mt.

Rice exports during the first quarter of the 1999/2000 season were destined mainly for Romania (17,098 mt or 14.2%), Syria (31,724 mt or 26.5%), and Turkey (21,704 mt or 18.1%). The three countries received 58.5 percent of Egypt's exports during the first quarter of the season. Jordan/Iraq, importing 9,795 mt, and Sudan, importing 9,469 mt, were also important customers.

Much of the rice shipped to Romania is cargo rice. GOEIC does not differentiate between milled white rice and cargo, which is semi-processed brown rice, in its export figures. According to unpublished GOEIC 1998/99 rice export data (see Table 5-3), 14,646 mt of cargo were exported from Egypt. Assuming this cargo was shipped entirely to Romania, 29% of Egypt's exports to Romania were as cargo in 1998/99.

5.2.3 Early Season Export Prices

Early season (mid-September to mid-November 1999) export prices were high relative to cheaper Asian rice. One public sector trading company exported *camolino* grade 2 to Turkey at LE 1075/mt, equivalent to \$315. Public millers quoted prices in the \$360-370 range as being necessary to recoup costs, so sales at prices below this level would appear to be subsidized. Anecdotal market intelligence from the Mediterranean region suggests that a Saudi company shipped 12,000 mt of Thai rice to Syria at \$288/mt C&F in October 1999, and that Libya imported 12,000 mt of Chinese rice at \$230-240/mt in October 1999 as well. C&F price quotes for medium-grain Chinese rice remained low at \$250/mt C&F Mediterranean ports as of late January 2000.

While private sector sources report that their export prices for *camolino* grade 2 fell in the \$300-330/mt range in 1998/99, FOB prices were higher in October 1999. One exporter quoted prices of

²⁹ Using the latest export figures, through 30 January 2000, exports this season of 132,640 mt appear to be trailing 1998/99 exports of 189,747 mt (as of the same point in the marketing season) by a wider margin. Extrapolating from these figures, exports in 1999/2000 would end up at about 215,500 mt.

\$345/mt for *camolino* milled from Giza 178, and \$350-355/mt for *camolino* milled from Giza 177.³⁰ Arkansas medium-grain rice was selling for \$340-350/mt, delivered to Mediterranean ports, and represented a competitive threat. Another exporter quoted a C&F, Syria price for rice imported from Egypt as \$350/mt.

A rice industry newsletter quoted Egypt's export prices, fob Alexandria, for the first half of October, as follows:

Table 5-4: Egypt's Early 1999/2000 Season Rice Export Prices

Grade	% Brokens	Camolino	Natural
1	3%	\$381	\$375
2	6%	\$363	\$356
3	12%	\$346	\$340

Source: London Ricebrokers' Association Newsletter, 2 October 1999

Note: These quotations are FOB prices, Alexandria. They are higher than quotes obtained by MVE.

Exporters reported that into-mill wholesale paddy prices could not exceed LE 700 mt for them to export and make some money. Taking milling costs and conversion rates, domestic transport and handling costs, and a modest profit into account, this translates into approximately LE 1200, equivalent to \$348-352/mt FOB, depending on the exchange rate used (\$1.00 = 3.41-3.45). If export prices exceed \$350/mt, Egypt's rice exports will drop significantly.

By January 2000, Egyptian rice export price quotes appeared to be below the \$350/mt FOB range. Indicative ranges of export price quotes from several exporters are shown in Table 5-5.

Table 5-5: Egypt's January 2000 Rice Export Prices

Paddy Variety	Into-Mill Wholesale Paddy Price (LE/mt)	Ex-Mill Rice Price (LE/mt)	FOB Price (\$/mt)	C&F Price (\$/mt)
Giza 171	690-750	1050-1150	\$329-358	\$374-383
Giza 177	680-730	1040-1060	\$326-332	\$351-357
Giza 178	630-660	1020-1050	\$320-329	\$345-354

Source: industry key informants, January 2000

Notes: Price quotes are for *camolino*, grade 2. First-quarter 1999/2000 export year statistics show that 68.3% of Egyptian rice exports had been *camolino*, grade 2. The official exchange rate of \$1 = 3.42 LE is used to convert prices in LE to FOB prices.

³⁰ Export prices are typically not quoted by variety of paddy input, but rather by type of milled rice output and grade, based on the percentage of brokens.

Another exporter, taking world market prices as a point of departure, states that Egyptian rice can be competitive in Mediterranean markets only if it is priced 10-15 percent below U.S. medium-grain rice. California medium-grain rice had dropped from \$518/mt in July-August 1999 to \$445/mt in November and December 1999 and \$441/mt in January 2000; this exporter anticipated that prices would drop further following completion of quota sales to Japan and the coming on stream of rice milled from a large U.S. crop, harvested from a record high area, by December 1999. Early 1999/2000 season price quotations for medium-grain Arkansas paddy were as low as \$122/mt, equal to LE 421/mt—well below Egypt's paddy prices, with Turkey having reportedly imported some U.S. paddy to mill for its domestic market. California medium-grain prices, C&F Mediterranean ports, were reportedly in the \$370-395 range as of late January 2000 (though this is over 10 percent lower than the USDA/ERS quote noted above).

Australian medium-grain rice was reportedly priced at \$365/mt C&F, Mediterranean ports, in May 1999, after the Aussie harvest. Australian exports were quoted as priced in the \$360-370/mt range in January 2000. The highest Egyptian export price on a shipment to Turkey in 1998/99 was \$385/mt, but prices generally are not greater than \$360-365/mt. Egyptian export prices are lowest after the Giza 171 is harvested in October, the peak supply period. One exporter reported buying 15,000 mt of Calrose for shipment to Turkey in 1997/98 when its price was lowest, at \$370/mt. This was a bulk shipment, whereas virtually all rice exported from Egypt is shipped in 50 and 25 kg. bags.³¹ This exporter thinks that LE 550-600/mt is a fair price for producers. At that price, exports of up to 1 mmt are possible. This level of producer prices translates into an into-mill price of no more than LE 650/mt, leading to a white rice price of LE 1000/mt. Adding some LE 70 or \$20, plus a \$5-10 profit markup yields an export price of \$325-330/mt for grade 2 *camolino*, which is internationally competitive. Add or subtract \$10/mt for each higher or lower grade.

Another large-volume exporter quoted the late September 1999 rice export price for grade 2 *camolino* as \$363/mt, FOB Alexandria. He arrived at this as follows:

1100 LE/mt - *camolino*, grade 2, ex-mill, 5% broken
 75 LE/mt - bags, inspection, transport, handling
 1175 LE/mt = \$345/mt at ER of \$1=3.4
 + \$5/mt - 1.5% finance charge as interest on loan to exporter
 \$350/mt (\$353/mt actually quoted)
 \$10 = profit margin
 \$360-363/mt - final FOB price

5.3 Recent Trends in Egyptian and World Rice Prices

Table 5-6 presents monthly prices for some types of internationally traded rice—both long-grain or *indica*, which is traded in far larger volumes than *japonica* rice, and short/medium-grain, which includes Egyptian rice. Plots of selected traded rices (in Figure 5-1) show that nominal prices for most types

³¹ This exporter also reported shipping Calrose in bags to Turkey at \$385/mt in 1997/98.

of rice were highest in 1995/96 and 1996/97. Prices declined or remained flat for all types of rice in 1997/98, with some strengthening of Asian rice prices in the second half of that marketing year. During 1998/99, prices for the main Asian traded rice declined 20-30 percent from August 1998 to April 1999 and have remained weak into the early months of the 1999/2000 marketing season.

While California medium-grain rice prices soared in 1998/99, Egyptian export prices began at very low levels (average export unit values of \$255/mt in October 1998 and \$228/mt in November 1998), rose into the low \$300s/mt for much of 1999, but did not increase too much by the end of the marketing season. There appear to be some anomalies in the CAPMAS data (see the last column of Table 5-6), and the low calculated unit values for rice exports in much of 1999 do not match miller and exporter reports of strongly rising into-mill wholesale paddy prices and higher milled rice export prices in the second half of the 1998/99 marketing season.³² California rice prices began to decline during the opening months of the 1999/2000 marketing season and stood at \$441/mt in January 2000 (the lowest level since the 1997/98 season), while Egyptian rice prices were reportedly heading in the opposite direction (though the CAPMAS unit value of \$278/mt for October 1999 in Table 5-6 is puzzlingly low). If Egyptian export prices were relatively high in late 1999, as reported by exporters, Egypt's competitiveness as a rice exporter in the remaining two-thirds of the 1999/2000 marketing season would be called into question. While both into-mill paddy prices and milled rice prices began to drop by mid-November 1999, they appeared to strengthen again by late January 2000. The overall export price outlook is uncertain for Egypt, with no clear consensus over trends during the remainder of the 1999/2000 season.

³² The explanation of this apparent contradiction may be that large commercial millers bought large stocks of paddy from traders earlier in the 1998/99 season (September-December 1998) when prices were relatively low. These stocks exceeded their early season milling requirements, but they then drew down on this (cheaper) paddy as they milled rice for export in 1999. Hence, much of the rice exported from Egypt in the second half of the marketing season (March to mid-September 1999) was probably milled from paddy bought during the first half of the marketing season. This allowed Egyptian exporters to hold prices down relative to rapidly escalating into-mill paddy prices and domestic retail prices during the second half of the marketing season. Nevertheless, a few exporters reported that they lost money on some export shipments later in the marketing season, because they were forced to purchase paddy to have custom-milled at high prices, when they had made earlier commitments to supply foreign buyers milled rice at prices below what they would have needed to charge to recover their (later higher than anticipated procurement) costs. All private informants report that millers bought very little paddy after March 1999 and exports stalled by May 1999. Probably only a handful of the largest-volume exporters continued to export rice (and sometimes incur losses in the process) in order to honor contracts. Exporters' commitment to honoring contracts is a positive development in Egypt's rice trade, even though some firms lost money in the short run.

**Table 5-6: Monthly Prices for Different Types of Internationally Traded Rice,
August 1995 to December 1999**

Figure 5-1: Prices of Selected Internationally Traded Rices, August 1995-December 1999

5.4 The Future of Egyptian Rice Exports

The marketing season for 1999/2000 could be a pivotal year for rice exports. As noted earlier, commercial millers and exporters were rather pessimistic about rice exports early in the marketing season (September-November 1999) when the public and ESA mills were buying large quantities of paddy, but their views were mixed by late January 2000. GOE officials are more optimistic, pointing to a very large crop. The private sector thinks that a significant part of this large crop may remain in storage and be carried over into 2000/01. Despite this view, quite a few private rice exporters and millers thought, in late 1999, that domestic rice prices would drop early in the year 2000, following the year end holidays and Ramadan. If public sector mills run out of funds to buy paddy or simply chooses not to re-enter the paddy market, this will contribute to a price decline. If prices decline significantly and private buyers enter the market to buy at more attractive prices, commercial milling and exports could pick up. Cheap into-mill prices could stimulate exports, assuming there are supplies of unsold paddy available on the market. This assumption may not be valid if producers, who held their paddy on the expectation of a stronger than usual paddy price rise (as occurred in 1998/99), and traders, who may have also bought large quantities of paddy speculating on a big price increase, face lower prices in 2000 than (or similar prices to those that) prevailed in the immediate post-harvest period (September-December 1999).

While forecasting what will happen in the medium term is a risky business, the long-run trend for Egyptian exports will probably be down. Population is increasing steadily at 2.0% or more, and rice is an important staple. The expenditure elasticity of demand for rice is positive (0.22 for urban and 0.27 for rural consumers at the national level) as well, meaning that rice consumption per capita will expand as incomes rise. Predictably, the demand of poor consumers (the lowest 40%) for rice in both urban (0.32) and rural (0.40) areas is more income elastic than the demand of the non-poor. Using rice as a principal starchy staple could also expand in some Egyptian households, particularly in Upper Egypt, although there is evidence that it has already expanded significantly since the 1970s. Although the rate at which rice consumption will expand in the early 21st century will likely decrease, relative to the 1980s and 1990s, aggregate domestic demand for rice will continue to expand in Egypt at a higher rate than population growth.

Reduction of area planted to paddy could also lower quantities of rice available for export. In 1998, the GOE effectively enforced area planting restrictions, and the area cultivated dropped to an estimated 1.225 million feddans. These restrictions appear not to have been enforced in 1999, when area cultivated was certainly over 1.5 million feddans and may have reached 1.8 million. If area restrictions are enforced for the summer crop of 2000 and beyond, rice output could decline significantly, and exports will drop.

Another factor that could affect demand for Egyptian rice exports is the value of the pound relative to other currencies. If the pound is not devalued, Egyptian exports will be penalized, as the current nominal exchange rate facing foreign importers is too high (i.e., they receive too few Egyptian pounds for each unit of foreign exchange). If the Egyptian pound were devalued, importers could obtain more pounds per unit of forex, and Egyptian rice would be more competitively priced on the regional and world markets.

Another factor affecting Egyptian rice exports, discussed in the next section, is the continued presence of Chinese medium-grain rice in regional markets, especially in the Black Sea but also satisfying the needs of poorer consumers in Mediterranean markets. Production levels for U.S. and Australian medium-grain rice will also affect the competitiveness of Egyptian rice in regional markets. These two rices typically command a premium over Egyptian short and medium-grain rice.³³ As their prices drop, as took place for Australian rice in the late spring of 1999 or U.S. rice in 1999/2000 relative to earlier years, Egyptian export prices will have to drop as well. U.S. rice, California medium-grain (number 1, 4% broken), appears to play the price leadership role in world markets for short- and medium-grain rice. Other rice exporters discount their rice exports with reference to U.S. medium-grain. Egyptian exporters state that rice exports must not exceed \$360-370/mt to remain competitive.

One exporter, whose export shipments have declined steadily since the mid-1990s, noted that the 1996/97 marketing year was a harbinger of things to come. Domestic prices were high, relative to world prices, and exports plummeted to 166,000 mt from 355,000 mt in 1995/96. He exported far less that year than in 1995/96 and made a strategic decision to diversify his export product mix. In some respects, 1999/2000 began by following a similar pattern. Farmer and trader storage is reportedly high, as they anticipate higher prices. Exports started slowly, though they picked up after the first couple months, and commercial millers were not buying as much paddy as in 1998/99. Carryover could be large going into 2000/01, especially if the crop is as big or bigger than estimated by MALR.

³³ Over the period August 1995 to August 1998, California medium-grain rice commanded an average premium of 21.6% over Egyptian rice in fob terms. In the July-September 1999 period, the price of California rice was 59-77% above the price of Egyptian rice, though the premium had dropped to just under 40% in November 1999-January 2000, closer to the recent historical average. In making these comparisons, MVE calculated export unit values for Egyptian rice prices, using GOE trade data. These unit values are an average across all types and grades of Egyptian rice exports, so they need to be treated with caution. They are probably somewhat lower than the actual prices for *camolino 2*, the export grade that is nearly equivalent to California medium-grain, no. 1. *Camolino 1* is the equivalent to California medium-grain, no. 1 in quality, but it is exported in such limited quantities compared to *camolino 2* (8.6% of exports in 1998/99 vs. 76.1%--see Table 5-3) that grade 2 serves as a better benchmark price for Egyptian exports. Note also that there is no published monthly export price series for Australian medium grain rice. The Leeton Ricegrowers Cooperative in New South Wales, Australia regards this information as proprietary.

Note that Egyptian medium grain rice typically is slightly more expensive (4.4% from August 1995 to August 1998) than 100% grade B, Thai long-grain rice. In the September-November 1999 period, this premium had widened to 25-36%, which is unsustainably high.

6. RECENT DEVELOPMENTS IN THE INTERNATIONAL AND REGIONAL MARKETS

6.1 General World Market Developments

Following the Asian economic crisis in 1997, world rice prices declined to exceptionally low levels in late 1997/early 1998. Prices for main traded types of rice strengthened throughout 1997/98 marketing season and re-attained pre-summer 1997 levels by April-June 1998. Prices for most types of internationally traded rice began the 1998/99 season quite strongly but softened over the course of the marketing year. By mid-season (March-April 1999), most world prices were below the levels of the height of the Asian economic crisis, with the exception of U.S. medium-grain rice, whose price was as high as it had ever been, and Egyptian rice, where exports were greatly reduced by high wholesale paddy (into-mill) prices. From 20 May 1999 to the end of the marketing season (nearly four months later), Egyptian exports were only 24,868 mt or 8.1 percent of the year's total. In other words, 91.9 percent of the rice was exported during the first two-thirds of the 1998/99 marketing season.

By the beginning of the 1999/2000 season, world rice prices were still weak, but U.S. medium-grain rice prices actually had risen further to astronomical levels of over \$500/mt on thinly traded volume (June-September 1999). Most industry observers thought this would be a short-lived phenomenon, driven by short U.S. pre-harvest stocks (due to last year's poor rice harvest in California) and fall 1999 quota sales to Japan. After these sales were completed, and once the 1999 medium-grain rice crop was harvested, milled and ready for export (by December 1999), U.S. prices dropped. By October 1999, California medium-grain rice prices had dropped ten percent from September to \$458/mt. Quotes for November and December 1999 prices were even lower (\$445/mt).³⁴ By January, Egyptian exporters reported that California rice was delivered at \$380-395/mt, C&F to Mediterranean markets. These sharply lower U.S. rice prices are putting downward pressure on Egyptian rice prices. If the world market prices, reflecting high levels of world rice production and stocks, are not transmitted to Egypt, particularly down to the producer and first handler transaction level, Egyptian exporters could be constrained by high domestic paddy prices. This could lead to a significant buildup in stocks by the end of the 1999/2000 season (> 900,000 mt of paddy, as shown in Table 4-1). Whether this scenario plays is uncertain; Egyptian paddy prices dropped with public sector mills' cessation of buying paddy on the domestic market in late November 1999, but they were rising in January 2000.

6.2 Regional Market Developments

Egypt continued to be a prominent exporter in Mediterranean regional markets in 1998/99, and 1999/2000 appears to be promising, although exports during the first quarter reached 119,7323 mt, slightly behind the 1998/99 pace (of 132,126 mt). Egypt is facing tougher competition from American

³⁴ Prices for Thai and Vietnamese long-grain rice were also soft at the start of the 1999/2000 season, as they had been since March-May 1999. Prices for most long-grain varieties were as low as they had ever been during the 1990s.

medium-grain rice in the Turkish market in 1999/2000,³⁵ though first quarter exports were at the same level as 1998/99. Egyptian exports to Turkey have vacillated a lot since 1993/94, when 72,514 mt were shipped. Exports then dropped to 17,307 mt in 1996/97, the lowest level since the early 1990s, before rising to a record 117,868 mt in 1997/98. The last four-year average was 61,206 mt. Turkey was once again a leading export destination for Egyptian rice in the first quarter of the current export market year (15 September-31 December 1999), receiving 21,704 mt, marginally lower than to Syria, which received 21,724 mt.

Syria has been the number two market during the past four years, importing an average of 58,593 mt of Egyptian rice. Syrian consumers have a strong preference for Egyptian short-grain rice, and several Egyptian exporters have established a strong commercial relationship with the Syrian Ministry of Supply. First-quarter 1999/2000 exports to Syria, 31,724 mt, were actually greater than they had been in the first quarter of the two previous years.

Exports to Jordan have fluctuated greatly during the 1990s, averaging 29,425 mt, while exports to Lebanon have been more stable at 10,236 mt per year on average since 1995/96. During the first quarter of 1999/2000, Egypt shipped 9,795 mt of rice to Jordan (and Iraq) and 4,185 mt to Lebanon.

Table 6-1 presents some data that provide insights into the characteristics of key markets for Egyptian rice, dividing the importers into several categories: Mediterranean Arab, Mediterranean non-Arab, Gulf, Black Sea (Eastern Europe and the NIS), and Africa. This breakdown is consistent with our reporting of the export data in Table 5-1. The key markets for Egyptian rice are further described below. The data appearing in Table 6-2 are averages for the 1995-1997 period (three calendar years), unless otherwise noted.

Table 6-2 highlights features of the same sets of markets that would be of interest to an Egyptian rice exporter, notably total imports, Egypt's share of those imports, and per capita rice availability. Low levels of rice consumption do not necessarily indicate an unpromising foreign market; countries that consume limited rice may be good candidates for export promotion. This depends on their income levels, the income elasticity of demand for rice (in comparison to other staple foods), and consumer tastes and preferences and any recent shifts. An understanding of these factors, and how they interplay in individual target markets, can be obtained through in-depth foreign market research, which is beyond the scope of this update. Some brief comments are offered below, however.

6.2.1 Mediterranean Arab Markets

³⁵ Turkey is also a key export market for American rice. U.S. exports to Turkey (all types of rice) were 366,300 mt in 1994/95, when Turkey was the number one destination for American rice exports. Turkey was the number two destination for U.S. rice in 1995/96 (220,600 mt) and 1996/97 (227,600 mt). U.S. exports to Turkey fell to 101,300 mt in 1997/98 and 89,300 mt in 1998/99. The U.S. export marketing season is August to July of the following year. Data are from USDA/ERS.

These countries, Syria, Jordan, Lebanon, Libya, and Palestine, are non-producers whose populations and rice consumption levels are modest. These countries depend entirely on

Table 6-1: Characteristics of Markets for Egyptian Rice

Table 6-2: Egypt's Share of Rice Imports in Major Markets and Estimated Per Capita Rice Availability

imported milled rice (i.e., they have no milling capacity), and Egypt's market share is significant, ranging from a high of 38.2 percent in Syria to 7.6 percent in Libya over the 1995-1997 period.

These markets demand high quality *camolino* rice, typically grade 2. They prefer short to medium-grain rice, especially Egyptian types that suit their cuisine. Australian and American medium-grain rice are suitable substitutes, especially when their prices are cyclically low, as they are in the 1999/2000 season. Egyptian exporters quoted C&F Mediterranean prices for Australian rice as \$360-370 for *camolino* type rice, grade 2, and \$370-395 for Calrose US medium-grain in January 2000. Egypt supplied 28.6 percent of the imports from 1995 to 1997. Turkey is reported to have milling capacity of about one million mt (of paddy) per year, near Mersin, a port on the southern coast.

As a middle income country (average GDP of \$3,160 in 1998), Turkey imports high quality *camolino* rice, again typically grade 2. Some exporters report that poorer regions of Turkey, particularly the south, will take lower grade rice (such as *camolino* or natural type, grade 3 or 4) than the more urbanized and higher income north.

Italy and Spain are two European producers of rice that also import some rice. Their exports, however, exceed their imports. Spain imported an average of 211,000 mt per year over the 1995-97 period and exported an average of 229,000 mt. Spain imported an average of 3,519 mt per year from Egypt over the same period, so Egypt is a minor supplier. Italy imported 70,500 mt per year from 1995 to 1997, with Egypt supplying only an average of 613 mt. Italy is a much larger producer than Spain, averaging 931,000 mt from 1995 to 1997, while Spain averaged 412,000 mt.

Opportunities for Egypt to ship rice to European countries are limited by tariff barriers. Several exporters referred to high "landing fees," which are in essence tariffs, of some \$100/mt. The end uses of imported Egyptian rice in Spain and Italy are unknown. Perhaps such rice is destined for the lower end of the consumer market or for an alternative end use.

Israel is a minor market for Egyptian rice, with an average of 683 mt shipped over the 1995-97 period. In the early 1990s (1991/92 to 1994/95), Egypt exported an average of 3,468 mt per year to Israel, but exports dropped precipitously following this period. In contrast, exports to Palestine, first reported in 1995/96, averaged 3,628 mt through 1998/99. It may be that exports reported as shipped to Israel before 1995/96 were largely destined for Palestinian consumers. If this were the case, Palestine would have been an important export destination for Egyptian rice throughout the 1990s.

Note that Egypt's strategy in the short run is to preserve its significant market share in the highly competitive Turkish market. This share may decline in 1999/2000, as U.S., Australian, and perhaps some Chinese rice out-compete Egyptian rice on price.

6.2.3 Gulf Arab Markets

These markets are characterized by very high incomes, no paddy production, and a strong preference for high-quality long-grain and *basmati* rice. Egyptian rice competes with Australian and American medium-grain rice for that segment of the market that prefers the short to medium-grain rice. Saudi

Arabia, with a population of close to 20 million inhabitants, imported an average of 4,255 mt per year from 1991/92 to 1995/96. This dropped off steeply to 1,563 mt per year during the past three export market seasons. The Saudis imported an average of 619,100 mt from 1995 to 1997, and most Egyptian exporters currently refer to it as an import market of about 700,000 mt. Egypt's market share is clearly insignificant and probably will not expand, given Saudi tastes and preferences. Egypt's exports to Saudi Arabia in the first quarter of 1999/2000 were 975 mt.

UAE is now a more important export destination for Egyptian rice, taking an average of 3,732 mt per year since 1996/97, and likely to import 225,000 mt overall in 1999 (December 1999, *Rice Outlook*, USDA/ERS). UAE and Omani imports of Egyptian rice reached 2,586 mt in the first quarter of the 1999/2000 export marketing year. Kuwait is a minor recipient of Egyptian rice, receiving only an average of 810 mt from 1995 to 1997. The Gulf markets, never very important markets for Egyptian rice exporters, will probably remain insignificant over the medium to long term. They will continue to be minor niche markets for high-end Egyptian commercial millers and exporters.

6.2.4 Black Sea Markets

The Black Sea markets have become key strategic markets for Egyptian rice. These markets are Eastern European countries and former Soviet republics that all have Black Sea ports. Their incomes are modest, in the lower end of the middle income range, but their populations are quite large. These countries are modest producers of rice (although Russia averaged a more significant 262,000 mt over the 1995-97 period). Their imports are generally larger than their production and exports are negligible. Per capita consumption tends to be low, as rice is not a major staple but rather a specialty or special occasion grain.

Because of income constraints, these countries import lower grade *camolino* and natural rice (typically grades 3 or lower). Romania imports a significant quantity of cargo, because of tariff barriers on imported white rice. Three Middle Eastern companies (one Egyptian and two Lebanese) have invested in rice mills in Romania to further process imported cargo. They are reportedly importing cargo medium-grain rice from China and Egypt to further process (polish and whiten) at their mills.

All the Eastern European and NIS markets for Egyptian rice (beyond those countries with Black Sea ports) imported only an average of 7,119 mt from Egypt from 1992/93 to 1994/95. This changed virtually overnight, as these countries imported 106,675 mt in 1995/96. Egyptian exports to these markets averaged 87,061 mt during the last three export marketing years. This was only slightly below the 91,684 mt exported to the traditional Arab Mediterranean clients (excluding Libya). The former COMECON country consumers are less discriminating than the Mediterranean markets. While the prized Egyptian rice varieties, especially Giza 171, 172, 173 and 177, are reserved for the more demanding Mediterranean consumers, Egyptian exporters usually ship less desired varieties, such as Giza 178 and the Sakha series, to the Black Sea markets, where consumers are more price sensitive.

Egyptian rice had captured a very high share of the Romanian import market (approximately 70 percent) by 1998/99, and important shares of the Bulgarian and Ukrainian markets. The challenge for Egypt will be to maintain large shares in these Black Sea markets in the face of a far cheaper alternative,

Chinese medium-grain rice, quoted at \$250/mt C&F in Mediterranean and Black Sea ports. Russia appears to be a market for potential export expansion, as Egypt has a very small share (2%) yet overall Russian import volume is as high as Turkey's. Russia is likely to be a much more price-conscious and quality-insensitive market than Turkey, however.

6.2.5 African Markets

These countries are generally characterized by relatively large but poor populations, whose rice purchases are greatly constrained by very low per capita incomes. They import lower grade natural rice or broken from Egypt which cannot be sold on other markets. Sudan is the most important of these markets for Egypt, having imported 17,534 mt per year from 1995/96 through 1998/99. Comparing Egyptian export data with FAO aggregate import figures, Egypt is Sudan's predominant supplier of rice, having supplied an average of 86.3 percent of Sudan's imports from 1995 to 1997.³⁶ Egyptian exporters had shipped 9,469 mt of rice to Sudan during the first quarter of 1999/2000.

Egypt is a minor supplier of other African markets. FAO reports that Kenya imported an average of only 41,000 mt of rice from 1995 to 1997. Egypt's first exports of rice to Kenya came in 1998/99 and were a surprisingly high 15,575 mt of natural type rice, grades 4 and 5. MVE was not able to learn who shipped this rice to Kenya and how Egypt would be competitive in the Kenyan market. Exports to Kenya during the first quarter of 1999/2000 were 1,249 mt.

Senegal imports massive quantities of 100% broken rice at rock bottom prices (Bangkok fob prices of \$170/mt in October 1999 and \$173/mt in November 1999), largely from Asia. One Egyptian exporter reported shipping 7,300 mt of 100% broken rice, collected in small quantities from numerous mills, to Senegal in 1998/99.³⁷

The North African countries of Tunisia and Morocco have imported very small quantities of Egyptian rice in only a few years. Tunisia imported 3,250 mt in 1993/94 from Egypt, and Morocco imported 100 mt in 1996/97 and 220 mt in 1998/99. These countries, in addition to Algeria, are big wheat consumers (bread, *cous-cous* and pasta) and minor rice importers. Their preference is for medium-grain rice, probably coming from European producers such as Spain and Italy. Rice in the North African countries is prepared occasionally, typically a few times a month, as a dish with vegetables.³⁸

³⁶ Note that Egypt's export market years are not directly comparable to calendar import years. Egypt's export market year now runs from 16 September of one year through 15 September of the following year. The standardized way to report national trade statistics is by calendar year.

³⁷ The official GOEIC statistics show that 3,300 mt of rice were shipped to Senegal. There may be a reporting period error, as the exporter noted that his shipments of 4,000 mt and 3,300 mt fell within the Egyptian export market year.

³⁸ This information, obtained from a key informant from North Africa, is sketchy and needs to be improved upon with site visits and market research.

In recent years, Egypt has also exported rice to Cote d'Ivoire, shipping 4,501 mt in 1997/98, and to South Africa, shipping a reported 4,000 mt in 1998/99.

Egypt is likely to remain a minor shipper to these countries, other than Sudan, where it has historically dominated the import market. These countries have low per capita income and will buy the cheapest source of supply, which bodes ill for Egypt. Sudan appears to have been a market where Egyptian exporters dispose of low-quality stocks. Much of the Chinese medium-grain rice imported into Egypt in the summer of 1999 was reportedly re-exported to Sudan, because many Egyptian consumers rejected it.

6.3 Chinese Rice Exports

China is the largest producer of rice in the world, and its 1.2 billion inhabitants consume the vast majority of the crop. In many years, particularly during the early 1990s, China was deficit in rice and had to import large quantities to satisfy its domestic consumption requirements. Since the 1995 and 1996, when China was a net importer of rice, its net exports averaged 2.157 million mt 1997 to 1999 (where the 1999 estimate is preliminary). China's exports reached 3.734 mmt in 1998 and are projected to be 2.75 mmt in 2000 (USDA/ERS forecast). In 1999, China was on track to export 2.8 mmt (December 1999 *Rice Outlook*, USDA/ERS). Imports averaged 1,041 mt over the 1995-97 period and are mainly *japonica* rice (short- and medium-grain), though they dropped to 260,000 mt in 1998 and an estimated 200,000 mt in 1999. China produces virtually every type of rice known to man, and it exports both long- and medium-grain rice (which it calls *indica* and *japonica*). Over the past couple of years, China has exported more medium-grain rice and has become a competitive threat to Egypt, particularly in its Black Sea markets.

All rice trade in China is government-controlled. There are a handful of state grain exporting companies, and export price data are not published. Some information about Chinese rice prices can be obtained from USDA/FAS attache reports, as well as privately published newsletters.³⁹ MVE was able to obtain some information about rice prices from a private international trader, as well as Egyptian exporters. Some monthly observations for prices of Chinese rice, compared to U.S., Thai and Egyptian rice, are shown in Table 5-6. Clearly, China has been able to undersell other exporters of short- and medium-grain rice, particularly in the price sensitive Black Sea markets. The two Egyptian companies that have established mills in Romania shifted from Egyptian to Chinese cargo rice in August-October 1999, because of the steep premiums that Egyptian rice commanded in the latter months of the 1998/99 marketing year and in the early months of the 1999/2000 export marketing season.

Egypt also imported an estimated 34-37,000 mt of Chinese rice late in the 1998/99 marketing season, when domestic prices spiked. By most reports, this was not a positive experience. Even though the Chinese rice was priced at LE 1.3-1.4/kg. on the Egyptian market, cheaper than Egyptian rice priced

³⁹ One Chinese consulting group publishes a weekly newsletter on grains that reports on weekly *japonica* and *indica* export (FOB) prices. This service costs \$300/month. Two other well-known newsletters are published in the U.S. (weekly) and the U.K. (monthly) and are far less expensive. They do not focus on the Chinese market or exports, however.

at LE 1.6-2.0/kg., consumers largely rejected the lower quality Chinese rice. Importers reportedly held large stocks that they re-exported to less discriminating markets, particularly Sudan. The Chinese rice was probably old stock, milled months before shipment to Egypt, and it had been stored as milled rice. It was also rather dark and smelled badly, in addition to being characterized by too high a proportion of broken, discolored and immature grains.

Most of the Chinese rice was imported by inexperienced Egyptian traders who normally specialize in importing other foodstuffs, such as lentils and beans. The larger volume exporters report that China is capable of shipping higher-quality medium-grain (japonica) rice, but they differ in their opinions about its suitability and palatability for Egyptian consumers. Most exporters think that Chinese rice is not a good substitute for Egyptian rice in the domestic market, although they fear that the former may make deep inroads into Egypt's Black Sea markets.

The importation of lower grade and quality rice from China into Egypt was a flawed experiment in the summer of 1999. It would be interesting to do consumer panel taste tests, where Egyptian consumers would taste quality samples of competing short- and medium-grain rice varieties (Chinese, Egyptian, Australian, American). The litmus test of the acceptability of different rice types would be actual imports, in the case where tariff barriers were modest. The current 20 percent tariff, plus 5 percent sales tax and other miscellaneous entry fees, effectively prohibits rice imports into Egypt, except in years of extremely high late season domestic rice prices, such as 1998/99. As long as Egypt maintains a high level of protection, foreign competition will not be an issue in the domestic market.

7. AN UPDATE ON ESA RICE MILLS

This section will discuss briefly MVE observations on the privatization process, where public sector rice mills are operating as ESA-run (employee stakeholder associations) mills. It will provide limited information about the activities and performance of these mills as well. Note that MVE has had great difficulty, during the past several years, in obtaining timely and accurate information from the Rice and Flour Mills Holding Company (RFM-HC). Perhaps access to information will improve with the recent incorporation of the RFM-HC into the Food Industries Holding Company.

7.1 Privatization in Name, Not Yet in Fact

On paper, six of the eight public sector rice milling companies were privatized in 1998 and 1999 and now operate under Law 159. These companies were sold to the Employee Stakeholder Associations (ESAs). Gharbia and Rashid rice milling companies continue to operate as Law 203 companies.

In practice, however, the Holding Company continues to control the operations of the ESA mills. The employees do not yet own the ESA milling companies; they are buying stakes (or shares) of these companies on an installment plan over a ten to thirteen year period. Privatization can, therefore, be considered as only partial. Hence, MVE will refer to both the six ESA mills and the remaining two public sector milling companies as *public mills*, since they operate under HC control. The Chairman of the HC-RFM was chairing regular meetings of the public mill chairmen to coordinate paddy procurement, milling, and export activities up to early December 1999, when the HC-RFM was folded into the Food Industries Holding Company. How these mills will operate under the new Holding Company remains unclear as of late January 2000.

One positive development was reduction of the historical debt of the public sector mills to zero. The Holding Company paid the commercial banks some LE 600 million in accumulated debt as part of the restructuring process of those companies. One-third of the revenue from sale of public sector companies to ESAs goes to the HC. Revenue from such sales helps to finance restructuring of remaining public companies and early retirement programs.

Note, however, that the rice milling company ESAs have paid no cash upfront, and they are buying their companies on long-term installment plans. The payments are made over a period that ranges from 8 to 10 years, after a grace period that ranges from 2-3 years, depending on the financial status of the company. The installment payments bear an interest rate of 5%.

The ESAs buy 90% of the company's shares, while the other 10% are divided between the Holding Company and some or all of the Board members in their own names. The reason underlying this ownership structure is basically a legal one; i.e., the operative company law 159 stipulates that the ownership structure should comprise at least three individuals or entities.

Employment at the ESA rice mills is now about 25 percent lower than before the conversion from Law 203 status to Law 159.

7.2 Public Sector Rice Mill Procurement in 1998/99 and 1999/2000

Although the public rice mills were largely out of the rice market during the 1998/99 marketing season, purchasing only 96,000 tons of paddy,⁴⁰ they were back in the market this year (1999/2000), having bought an estimated 490,000 tons early in the season (September to early December 1999). Early season paddy purchases (first 250,000 mt) by variety, shown in Table 7-1, reveal that public sector mills bought mainly Gizas 178 and 177 at prices ranging from LE

Table 7-1: Paddy Purchases By Public Rice Mills, September-Early December 1999

Variety	Quantity (tons)	Price Range (LE/ton)	Starting Date of Purchase
Giza 178	150,000	620 – 640	15-09-1999
Giza 177	63,000	610 – 630	15-09-1999
Sakha 101	20,000	620 – 630 *	10-09-1999
Sakha 102	10,000	610 – 620 **	10-09-1999
Reho	5,000	680 – 700	20-10-1999
Giza 171	2,000	680 – 690	20-10-1999

Notes: * Sakha 101 market price is close to G. 178.

** Sakha (102) market price is close to G. 177.

610-640/mt. Smaller volumes of Giza 171 and Reho (Giza 173) were also purchased at higher prices of LE 680-700/mt. Procurement of 490,000 mt was made possible by HC-RFM provision of credit to those companies, enabling them to get the working capital required to buy paddy and export rice. The Holding Company has obtained a reported LE 1.3 billion from the public sector banks on commercial terms (at interest rates of 12-14%).

Many private sector commercial millers and exporters were out of the market or bought very small quantities, while the public sector mills purchased large volumes of paddy at what the private sector considered unsustainably high prices. Private firms cite the record large paddy crop in Egypt in 1999 and soft regional and world demand for traded rice as reasons for why public sector paddy procurement prices were too high. A number of private millers and exporters thought that domestic prices would drop significantly once the public sector stopped buying paddy. They thought that this would happen early in the new year (2000), following Ramadan and November-December purchases of medium-grain rice, particularly Calrose and Australian rice, by the Japanese under their agreement to buy foreign rice. Egyptian paddy prices did actually decline in December 1999, but they appeared to be rising back to opening levels of the 1999/2000 season (September-October 1999) by late January 2000.

⁴⁰ Of this 96,000 mt of paddy, 86,400 or 90% was reportedly destined for export markets.

7.3 Sharkia Rice Milling Company: Activities of the First ESA

The first public rice mill sold to an ESA, Sharkia Rice Milling Company, operated quasi-independently as of the 1998/99 season. It appears to be performing well below capacity, which is 660 mt of paddy per day, equivalent to 165,000 mt/annum (assuming 250 days of annual operation). In 1998/99, Sharkia bought about 18,000 mt of paddy, or 19 percent of the total procured by public sector mills. In addition, the mill had a carryover of about 28,000 mt of paddy from the 1997/98 marketing season. The company purchased paddy last season during a three-month period: September to November 1998. The average purchase price of paddy was LE 500-540/ton in 1998/99, as shown in Table 7-2.

Table 7-2: Sharkia Rice Mill Paddy Purchase Quantities and Prices, by Variety, in 1998/99

Variety	Quantity (tons)	Average Price (LE/ton)	Time of Purchase
G171, G177	5,000	500	Aug. - Sept. 1998
G171, G177, G178	13,000	540	Oct. - Nov. 1998

The company exported about 42,000 mt of rice last year (1998/99), 30% of which were direct exports and 70% of which were via other exporters, as shown in Table 7-3.

Table 7-3 : Sharkia Rice Company Exports, 1998/99

Date	Grade	Qty. (Ton)	Price (LE/ton)	Sales	
				Export	Domestic
Oct. - Nov. 1998	Camolino (2)	12,000	1000	12,000	-
Jan. - Mar. 1999	Camolino (2)	15,000	1000	15,000	-
Jan. - Mar. 1999	Natural (4), (5), (6)	5,000	950	-	5,000
Jan. - Mar. 1999	Camolino (2)	10,000	1100	10,000	-

Rice sales in both the domestic and export markets were completed in 1998/99 and the carryover of milled rice was zero by the end of the season.

Direct exports by the ESA company were destined for Syria, Lybia, and Turkey and amounted to about 10,000 mt. Meanwhile, about 30,000 mt were exported by private exporters, namely Wakalex, El Fostat, and El Waha.

The company's 1999/2000 strategy is to buy about 120,000 mt of paddy at an average price of LE 600/ton in order to fulfill both domestic and export market targets. As of early December 1999, Sharkia Rice Milling Company had bought 50,000 tons of paddy (or 42 percent of the target), mainly Giza 171 and 177 as shown in Table 7-4. This table shows significantly higher procurement prices than in 1998.

Table 7-4: Sharkia Rice Milling Company Paddy Purchases, 1999

Variety	Quantity (mt)	Price (LE/ton)	
		October 1999	November 1999
Giza 177	8,000	620-640	620
Giza 178	1,500	600-620	570
Sakha 101	1,000	600-620	570
Sakha 102	2,000	620-640	620
Giza 171	37,500	650-680	650
Total	50,000	-----	-----

As of early December 1999, Sharkia Milling Company had sold 2,500 mt of *camolino* rice as grade 2 (1,500 mt at LE 1025 /mt) and grade 3 (1,000 mt at LE 1,000/mt). Export market sales have been as follows:

- C 1,500 mt of *camolino* grade 1 to Turkey at LE 1,150/mt (\$ 337/mt)
- C 1,000 mt of *camolino* grade 2 to Jordan at LE 1,000/mt (\$ 293/mt)
- C 1,500 mt of cargo at LE 900/mt to Romania (\$ 264/mt)

Although the first ESA rice mill and the most diversified and financially stable, Sharkia still operates under the overall direction of the HC-RFM.

7.4 Holding Company Export Market Strategy and Prices

Informants in the public/ESA mills report that the HC plans to have the mills procure 960,000 mt of paddy and export about 300,000 mt of milled rice in 1999/2000. Export levels will be attained only if paddy procurement prices drop to a reasonable level of under LE 600/mt. After the public mills pulled backed from the market in late November, paddy prices did appear to be dropping. At the early public buying prices of LE 620-700/mt, the HC and public mills will have troubles exporting competitively. At those procurement prices, Egypt risks losing key traditional markets such as Syria, Jordan and Turkey. It is reported that a Saudi company shipped Thai rice to Syria at \$288/ton, C&F, in October 1999, a worrisome development. Another important Egyptian rice customer, Libya, also imported 12,000 mt of Chinese rice in October 1999 at a price somewhere between \$230-240/mt.

Note that the Holding Company announcement of public sector custom milling charges of LE 35/mt of paddy appears to apply only to producers and consumers milling for their personal consumption. Exporters, who are usually not millers (with the exception of the Mabrouk Company), are supposed to pay a higher price of LE 65/mt of paddy, which is on the very high end of what private sector commercial mills charge private clients. To obtain this milling charge, clients must have at least 1,000 mt processed. It is not clear to what extent private exporters are using this milling option. If private exporters are using this option, the public mills are charging them a rate which is below recently reported public sector milling costs (of at least LE 120/mt). Private traders have not depended upon the public sector mills to supply white rice in recent years, though some of the large ones do occasionally contract with public mills to process their paddy for export.⁴¹

7.5 The Future of ESA Mills: What Role for the Public Sector in Rice Milling in Egypt?

Through the first months of the 1999/2000 rice marketing season, the RFM-HC leadership of the ESA mills, and more importantly, the HC's ability to obtain finance for the ESA mills, set the tone for the marketing year. Procuring nearly half a million mt of paddy from traders, the public sector and ESA mills had re-asserted themselves into a market dominated by private rice traders and millers during the previous three years. Not since 1997/98 had the "public sector mills," as the private trade regards the remaining two public mills and the six ESA mills, entered the market so early with so much available finance. The most notable difference this season is that the public and ESA mills will pay market rates for their working capital from banks, whereas the bank rates were lower (about 10 percent on average) in 1997/98 constituting subsidization. Flush with funds for procurement, the public and ESA mills had bought 490,000 mt of paddy by early December 1999 at into-mill prices ranging from LE 600 to nearly 700/mt. As noted earlier in this report (see section 4.4.1), wholesale paddy prices were well above 1998/99 levels in early 1999/2000.

The very prominent market presence of the public and ESA mills raises a series of questions that can only be answered with better access to information about these mills' activities. The private sector has been skeptical about the longer-run financial viability of the ESA mills, particularly when these mills began the season paying high prices for paddy in a year of low world market prices. Some of the questions that need to be answered in order to evaluate the ESA mills' performance this season are as follows:

- C Will the ESA mills be able to sell their milled rice at a profit (given high procurement prices)?
- C What are the ESA mills' production costs at this point (now that their work forces have been cut back through early retirement programs and attrition)?

⁴¹ During the initial years of rice subsector liberalization (1992-1996), large private exporters did use public sector mills to mill much of their paddy or they purchased white rice from public mills. During the last 3-4 years, private exporters have relied mainly and increasingly on private commercial mills to supply their needs.

- C At what levels of capacity have the different ESA mills been operating? Are some operating at much higher capacity levels than others, and hence more likely to succeed in competition with private commercial mills?
- C Who are the ESA mills' customers in 1999/2000? What proportions of their milled rice will be exported directly, sold to private exporters, and sold in the domestic market, and at what price levels?
- C Are ESA mills doing any milling of paddy for private exporters (custom hire)? If so, what are the terms and conditions of these arrangements, and how prevalent is this activity for ESA mills?
- C Are ESA mills exporting directly or relying mainly on companies specialized in exporting (whether public or private sector owned)?
- C Will the Food Industries Holding Company (FIHC) be committed to allowing the ESA mills to operate more autonomously than the RFM-HC?
- C If ESA mills suffer losses on their rice milling accounts in 1999/2000, will the GOE (through the FIHC or other means) cover the losses? If the ESA mills carry losses into the 2000/01 season, will they be able to operate on the same scale as in 1999/2000?

Many other questions could be asked, though these are some of the key ones.

The RDI Unit of APRP continues to work closely with the ESA mills through a series of focused workshops on issues of stakeholders' (mainly employees) rights and responsibilities (orientation), corporate governance, and organizational development. As a follow-up to the workshops on organizational development, which will be completed in early 2000, RDI may do further work with the ESAs on finance and marketing strategies, though this would be in the context of each ESA mill's organizational development plan. A noted Egyptian expert in privatization through ESAs and post-privatization support to ESAs, Abdel-Ghani Hassan, is a key resource person in this process.⁴² The completion of the organizational development workshops has been delayed by the ESA mills, who asked to postpone any further work with RDI until the most intensive period of their paddy procurement and milling year (September-December 1999) was over.

RDI is serving the MPE/PEO in holding these workshops, although it is understood that turning around all of the ESA milling companies will be a difficult task. Working with all six ESA milling companies necessarily slows down the delivery of workshops and RDI strategic inputs; perhaps MPE should have ranked the mills and instructed RDI to work with a smaller group of priority mills, so RDI could focus its efforts on the mills with the best financial position, equipment, labor force, and long-run prospects for survival.

⁴² Abdel-Ghani Hassan is the vice-chairman of ADALA, an NGO that supports ESA companies in Egypt. He is also a member of the Board of Directors of the Agricultural Development Holding Company.

MVE is concerned that the RFM-HC appeared to be micro-managing the finance and paddy procurement practices of these companies in the first four months of the 1999/2000 marketing and milling season, after privatization. With the folding of RFM-HC into the Food Industries HC, MVE is guardedly optimistic that RDI assistance to the ESAs will strengthen their organization, management and performance in a timely manner. Some of the mills may not endure over the long term and liquidation may be a better option, however. Although their pre-1999/2000 season debt has been written off, the ESA mills face higher operating costs than private commercial mills (and smaller village mills), as well as redundant labor. Dealing with these issues may require taking hard decisions that do not please everyone. Given the heavy private sector investment in cheaper, smaller and more efficient commercial mills, perhaps only 2 or 3 of the ESA mills will be able to survive, even with significant restructuring.

8. INDUSTRY VIEWS ON POLICIES AND REGULATIONS

Rice industry sources, speaking off the record, offered policy and regulatory suggestions in several areas.

Lower the Rice Tariff. Protection of over 25% percent makes rice imports prohibitively expensive in most years. The end of the 1998/99 season was an exception, with private traders importing at least 35,000 mt of Chinese medium-grain rice. The experience with these imports was mixed. While the importing firms did not admit having trouble selling the Chinese rice, they did note that they were required to re-export some of it (quantity unknown) and several thousand tons were still in storage in Qalyoub as of late September 1999.

The GOE Should Not Intervene in the Rice Market. GOE interventions tend to be de-stabilizing rather than stabilizing, as witnessed by Minister Goueli's announcements of massive rice exports to Indonesia and Prime Minister El Ganzouri's declaration of a mid-season minimum paddy price for producers in December 1998. Other announcements by PBDAC and Minister Wally (see Annex 5) also helped set expectations for high paddy prices. Both announcements contributed to the unusually strong increase in wholesale paddy prices, although market fundamentals (shorter crop than expected) were the underlying key factor.

Private traders, millers and exporters also noted that the GOE, through the Holding Company and public banks, should not intervene in financing public procurement of paddy in 1999/2000 or in doing the actual procurement. Public announcements of GOE intentions in the press have created uncertainty in the marketplace. Paddy prices opened the season at much higher levels than in 1998/99. The private sector thinks that these prices will probably drop, given the large paddy crop, but that public sector buying of paddy will keep paddy prices higher than in 1998/99, which could hurt the competitiveness of Egyptian rice exports.

Generate Reliable Forecasts and Estimates of Rice Area Planted and Production. The divergence between the MALR announced rice production for 1998/99 and the industry's lower estimate, as well as the gap between the MALR forecast and MPWWR unofficial estimates for 1999/2000, suggest that published statistics are unreliable. Private traders, millers, exporters and prospective importers need reliable information on supplies (at a minimum, production, but also including stocks) to run their businesses effectively. Key rice industry informants say that the size of the 1999 crop is anyone's best guess at this point.

Consult the Industry More Closely Before Making Major Varietal Changes. Large commercial millers and exporters voiced this recommendation most strongly, stating that phasing out of Giza 171 and 172 was detrimental for the competitiveness of Egyptian rice in international markets. The short-season varieties are not suitable for the key export markets, particularly Turkey and Arab countries. In their interactions with an ARC official in a rice industry forum in Nasr City in March 1999, exporters felt that he was somewhat defensive about the new varieties and not very receptive to industry input.

Strengthen Rice Situation and Outlook Reporting, Including Reporting of Accurate Price Information. There is a real void of useful information for the industry here. This contributes to the

sentiment of many key industry informants that they act in a non-transparent market environment. Large commercial millers and exporters report that they have far better and more accurate information about the international market than they do about the domestic market. Clearly, S&O needs to be strengthened.

An important concomitant of accurate price reporting is information about traded volumes. In most years, paddy producers sell much of their paddy during the three months after the harvest, because they need cash. In a few unusual years, such as 1996/97 and possibly 1999/2000, farmers are alleged to hold paddy stocks for several months in anticipation of higher prices. We use the word “alleged,” because there simply are no data available on producers’ paddy storage practices.

Small and large paddy traders are also reported to hold stocks in anticipation of seasonal price rises. While a certain amount of inter-seasonal (intra-annual) storage is normal and desirable to smooth price variability, alleged hoarding tends to exacerbate price fluctuations in years of shorter crops. Again, there is no empirical evidence that traders store paddy in large quantities for long periods. The returns to medium-term storage (of, say, over 3-9 months) in most market years probably compensate traders modestly for the storage cost outlays and the opportunity cost of tying up capital in a perishable commodity in storage. Smaller traders in particular lack the financial resources to tie up their limited capital in medium-term storage of paddy. This may not be the consensus of GOE officials, but it has been empirically borne out in many developing countries. Clearly, good S&O reporting would include empirically derived estimates of paddy stocks held by producers, traders and millers.⁴³ Having a good idea of paddy stocks, along with crop size estimates, helps private sector participants to make better business decisions. It also allows the government to monitor developments in the rice market more closely and accurately.

Devalue the Egyptian Pound. According to DEPRA analyses, the real value of the Egyptian pound has appreciated 69 percent against a trade-weighted basket of currencies since 1991. Over much of this period (since 1993), the exchange rate to the dollar has been pegged in a very narrow range of 3.38 to 3.41 LE. Clearly, the competitiveness of Egyptian rice exports is harmed by the overvalued pound. When wholesale paddy prices rise to levels over LE 700 per ton, Egyptian rice exports become uncompetitive. This procurement price translates into a fob dollar price of \$342/mt.⁴⁴ Australian medium-grain rice has sold for only marginally more per ton, and it is considered higher quality by international traders. Chinese medium-grain rice has sold in the \$220-240 per ton range since February 1999. Although inferior in quality to Egyptian *japonica* rice, it will undersell the latter

⁴³ Producers and traders hold virtually all their stocks as paddy. Milled rice is subject to deterioration and loss. Millers also hold paddy stocks, depending upon their financial resources. They are loathe to hold milled rice stocks, because they need to turn over their capital to procure more paddy.

⁴⁴ Assuming a procurement price of LE 700/mt of paddy and a milling conversion ratio of 65% (for commercial mills), the LE cost of white rice ex-mill is 1,117/mt (this includes a LE 40/mt ton processing charge). To this add another LE 50/mt for LE 1,167 or \$342 at the official exchange rate of LE 3.41 = \$1.00.

when prices are below \$250/mt (the discount of 27% is too steep to offset on quality grounds alone).

Maintaining an overvalued currency also makes it difficult to remove or reduce the 20% tariff (plus 5% more in sales tax plus fees). The overvalued pound not only penalizes rice exporters; it makes imports artificially cheap in local currency terms. The greater than 25% protection of the tariff, sales tax and fees is almost necessary to offset the degree of overvaluation of the currency.

By way of illustration, if the pound were devalued 30% to \$1.00 = LE 4.87, the nearly 30% protection could be eliminated on rice imports and most rice imports would remain equally uncompetitive on the Egyptian rice market as they are now with the tariff and associated fees.

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ANNEXES

- 1 Rice Milling and Consumption in Upper Egypt
- 2 Selected Rice Subsector Statistics
- 3 Rice Prices and Returns versus Other Summer Field Crops
- 4 Commercial Mills Registered by the Cereals Chamber Since December 1998 (under development)
- 5 GOE Announcements and Selected Newspaper Articles on Rice

ANNEX 1

Rice Milling and Consumption in Upper Egypt

1.0 Fayoum and Beni-Suef

1.1 Paddy Area Cultivated and Production

Fayoum is an important rice-producing governorate, having cultivated an average of 12,744 feddans to paddy during the 1980s and 24,839 feddans during the 1990s, with a steady rise from 13,707 feddans in 1990 to 36,593 feddans in 1997 (see Table A1-1). This dropped sharply to 20,873 feddans in 1998. Estimated rice area in 1999 ranges from a low of 28,273 feddans, estimated by the MALR, to 46,000 feddans, unofficially reported by MPWWR. This is a substantial difference, with the MPWWR estimate being 64 percent higher.⁴⁵

Paddy production rose from an average of 28,715 mt during the 1980s to 74,209 mt during the 1990s, in large part due to a doubling of area cultivated, but also due to an increase in average yields from 2.3 mt/feddan to 3.0 mt/feddan. The greatest production through 1998 in Fayoum was 110,474 mt in 1997, equivalent to 71,808 tons of milled rice. Not all this output is consumed in Fayoum. Using CAPMAS population figures from the 1996 census, Fayoum's population in 1997 is estimated to be 2,031,669 million inhabitants.⁴⁶ If Fayoum consumed all of its own rice production, per capita consumption would be an estimated 29.8 kilograms.

MALR's initial paddy area and yield forecasts for Fayoum, produced in late September (see Table 2-1), are that area will be 35,211 feddans, yield will be 3.211 mt/feddan, and production will be an estimated 113,063 mt. If the higher MPWWR estimate of area cultivated to paddy is used, estimated production would be 147,706 mt.

According to governorate level MALR officials, the area cultivated to paddy amounts to 28,273 feddans in five districts of Fayoum in both Credit and Agrarian Reform Cooperative areas, as shown in Table A1-2. The varieties grown in Fayoum are Giza 176, Giza 177, Giza 178, Sakha 101, and Sakha 102. As shown in Table A1-2, the area cultivated to these varieties amounted to 25,233, 300, 20, 30, and 2,700 feddans respectively, representing 89.2%, 1.1%, 0.07%, 0.1%, and 9.6% of the total area planted to paddy respectively. Giza 176 is by far and away the most prominent variety. Note that the estimated area cultivated to Giza 176 in Fayoum is reposted as 35,211 feddans - all the rice area - in Table 2-2.

⁴⁵ The national estimate of MALR for area cultivated to paddy is 1.559 million feddans, while unofficial estimates range from 1.6 to 1.8 million feddans, up to 15 percent higher.

⁴⁶ Fayoum's population in 1996 was 1,989,881 inhabitants, of which 1,542,909 or 77.5 percent were rural.

Table A1-1: Paddy Area, Yield and Production in Fayoum Governorate, 1980-1999

Year	Area Cultivated	Percent Total Egypt	Estim. Yield	Percent All Egypt	Total Product.	Percent Total Egypt	Milled Rice Equivalent
1980	14637	1.5%	2.3	92.2%	33141	1.4%	21542
1981	14334	1.5%	2.2	92.6%	31088	1.4%	20207
1982	14477	1.4%	2.2	93.0%	32071	1.3%	20846
1983	12414	1.2%	2.2	92.9%	27824	1.1%	18086
1984	12515	1.3%	2.3	99.4%	28282	1.3%	18383
1985	9729	1.1%	2.4	95.9%	23341	1.0%	15172
1986	12315	1.2%	2.1	87.8%	26219	1.1%	17042
1987	12784	1.3%	2.1	84.1%	26350	1.1%	17128
1988	11685	1.4%	2.4	93.3%	27764	1.3%	18047
1989	12554	1.3%	2.5	90.6%	31066	1.2%	20193
1990	13707	1.3%	2.5	81.7%	34196	1.1%	22227
1991	14351	1.3%	2.8	90.6%	40773	1.2%	26502
1992	17973	1.5%	2.9	89.1%	51561	1.3%	33515
1993	21840	1.7%	2.9	88.6%	62863	1.5%	40861
1994	28919	2.1%	2.9	87.5%	84181	1.8%	54718
1995	30648	2.2%	3	87.7%	91908	1.9%	59740
1996	35483	2.5%	3	84.8%	104852	2.1%	68154
1997	36593	2.4%	3	86.7%	110474	2.0%	71808
1998	20873	1.7%	3.3	90.8%	68881	1.5%	44773
1999	35211	2.3%	3.2	85.9%	113063	1.9%	73.491
Mean80s	12744		2.3		28,715		18664
Mean90s	24866		3		74,299		48294

Source: MALR.

Note: The paddy to milled rice conversion factor is assumed to be 65%.

Table A1-2: Area Cultivated by Rice in Fayoum 1999/2000, by Variety

Variety	Giza 176	Giza 177	Giza 178	Sakha 101	Sakha 102	Total
Area (Feddan)	25223	300	20	30	2700	28273

Percentage	89.2	1.1	0.1	0.1	9.6	100
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Source: MALR, Agricultural Directorate, Fayoum.Governorate

Notes: Percentages do not sum exactly to 100.0, due to rounding errors.

The total reported here, 28,273 feddans, does not match with the preliminary national estimate of 35,211 feddans (see Table 2-1).

In 1999, 9.7% of the area was cultivated to Sakha 101 and 102. MPWWR estimates for the paddy area of 46,000 feddans are considered high by MALR. Note, however, the discrepancy between the MALR estimates at the national and directorate (governorate) levels.

The allowable cultivated rice area in Fayoum, as decided by MPWWR, was 17,000 feddans in 1999 in the three districts of Tamia, Etsa, and Fayoum. GOE officials estimate that 30 percent of total output will cover local consumption requirements; the rest is for domestic trade, mainly shipments to Upper Egypt or other nearby areas such as Beni-Suef.

Paddy cultivation is not allowed in Beni-Suef, but there are an estimated 600 feddans of paddy cultivated.

1.2 Estimated Rice Consumption

Fayoum residents are not considered big consumers of rice; their rice consumption does not exceed three meals a week. A local MALR official estimates per capita consumption of rice for Fayoum governorate at 33 kg./year, according to a consumption study conducted by the MALR Directorate. This seems implausibly high, as total supply at the governorate level is only equivalent to 28.4 kg. per inhabitant.

Although Beni-Suef is essentially a non-rice producing governorate, its population can be considered as consuming Fayoumi rice. Beni-Suef's estimated population in 1999 of just below two million inhabitants can be added to the estimated 2.1 million people in Fayoum. If this combined population consumed only Fayoumi rice, consumption per capita would be a more modest 14.7 kg. per capita. This estimate seems to be more consistent with the observation that most households in Fayoum consume only three rice meals per week.

1.3 Small-Scale Rice Milling

Small-scale rice mills are important assets in the post-harvest processing of the paddy crop. A survey of small-scale rice mills in Fayoum divided mills into three categories, according to the quality of milled rice output (good, fair and bad). Table A1-3 shows that the majority of the good status mills, 36 of 38, are located in Tamia District. Fayoum and Senores Districts have only one mill in each district.

The fair rice *faraka* were found in all the surveyed districts. Most of this type of rice *faraka*, 44 units, were in Atsa District, representing 61 percent of the total fair *faraka* in the Governorate, of which there were 72 in 1998. The numbers of fair *faraka* were nine, eight, six, and five in El-Fayoum, Seneras, Tamia and Ebshway Districts respectively. In 1998, eight bad quality rice *faraka* were found in Tamia.

1.4 Commercial Rice Mills

According to the Cereal's Industry Chamber, there are nine registered commercial rice mills in Upper Egypt. There are two mills in each of Fayoum, Minya, Sohag and Beni-Suef, and there is only one registered mill in Assuit. As shown in Table A1-3, MVE has interviewed the managers of two mills in Fayoum and Minya, and one each in Beni Suef, and Sohag.

Table A1-3: Registered Rice Mills in Upper Egypt, 1999

Governorate	Fayoum	Minya	Beni-Suef	Sohag	Assuit	Total
# Rice Mills	2	2	2	2	1	9
# Mills Interviewed	2	2	1	1	0	6

Source: CIC, Rice Branch, Alexandria.

One new mill in Beni-Suef, located in the industrial zone, can process over 50 mt of paddy a day and is equipped with Buhler milling equipment and a sortex machine. The mill has a packing line with German equipment. It produces high-quality rice for export. During the 1998/99 season, its first year of operation, this mill produced 2,000 mt of white rice for one exporter. This season the mill will attempt direct exports, principally to Turkey and Jordan (and perhaps some to the Gulf). The owners decided to locate the mill in Beni-Suef, because they live there and felt they could compete, even though they buy most of their paddy from Beheira, Dakhalia and Sharkeya and incur higher transport costs than Delta-based mills. They purchased Giza 178 and Giza 177 at about LE 600 - 650 per ton of paddy in September-October 1999, with the average being LE 630/mt. Paddy prices reached LE 1,000/mt late last marketing year (by spring 1999), but this mill bought little paddy at that price.

MVE interviewed two smaller commercial mills in Fayoum. The first was opened in 1998. This mill can produce 16 mt of white rice per day, processing 24-25 mt of paddy input. This mill processes Fayoumi paddy for sale on the local governorate market. The mill is equipped with Chinese milling equipment.

During 1998/99, the mill produced 1,600 tons of white rice for local traders. It purchased 2,400 mt of paddy, mainly Giza 176 and Giza 177 at prices ranging from LE 470 to 1050/ton. The other mill processes 30 ton of paddy/day, producing 20 mt of white rice. Milling equipment is Chinese (the Egyptian supplier is Techman, Cairo). This mill operates three shifts of eight hours each. The quantity of milled rice in 1998/99 amounted to 5,000 mt, compared to about 400 mt this season 1999/2000. Average paddy prices were LE 500 to 1000 and LE 590 to 610 in 1998/99 and 1999/2000 respectively. This mill purchases paddy from Fayoum, mainly the Giza 176 variety.

2.0 Minya

There are two registered commercial mills in Minya. MVE interviewed one that can process 30 mt of paddy per day. This mill became operational during the 1996/97 season. It imports paddy (mainly

Giza 171) from Sharkia and Gharbia for processing and sale on the local market. The Minya mill operates one shift of 10 hours/day for 25 days/month. It is equipped with Chinese milling equipment.

A second mill in Minya also buys paddy in the Delta, mainly in Beheira and Dakahlia, and sells the white rice on the local market. This mill produced approximately 1,000 mt of white rice during each of the past two seasons. Paddy prices ranged from LE 530 to 1000/mt in 1998/99. As of late October 1999, it had processed 110 mt of milled rice, using Giza 171 as the raw material, purchased at LE 630/mt.

3.0 Sohag

There are two registered commercial mills in Sohag, which is a surprising finding, because these mills are located far from producing areas. These are smaller operations that report milling paddy from producing governorates for the local market. The capacity of these mills is 25 mt/day and 10 mt/day of paddy.

MVE interviewed the manager of one mill that can process 10 mt of paddy per day. This mill has been operating one shift of 10 hours per day over 25 days/month. In 1996/97, it produced about 800 mt of white rice. The mill was established in 1995 and became operational during the 1996/97 season. The milled rice was sold in local markets in Sohag at relatively lower prices than other rice imported from Lower Egypt. The owner suffered losses during that season (1996/97), and the mill was closed down by the end of 1996/97. This miller sold his Chinese equipment to another miller in Mansoura.

The other mill in Akhmim of Sohag has not yet started operating. The MVE interviewer learned that the mill owner has changed his mind and will not complete the project. He has judged this investment to be unviable.

4.0 Concluding Observations

Rice consumption has become increasingly important in Upper Egypt over time, although the region does not grow paddy, other than in Fayoum governorate. Fayoum has produced only 1.5-2.0% of the total Egyptian paddy crop in recent years, however. Upper Egyptian consumers used to eat more maize and sorghum, but they have become important rice consumers during the past two decades (see *Rice Subsector Baseline Study*, chapter 4, 1999 for details). An IFPRI/FSRU household sample survey, conducted in 1999, showed that the quantity of rice consumed per capita was about half as high in Upper Egypt as it was in Lower Egypt. Two factors seem to have driven increased consumption of rice in Upper Egypt since 1980. One is the subsidized sale of rice by public companies, particularly the Rice Marketing Company of the Holding Company for Rice and Flour Mills, during the 1980s. The second is the return of many Egyptian workers from the Gulf countries, where they got used to eating high-quality imported rice.

Rice milling in Upper Egypt outside of Fayoum, a producing governorate, appears to be a questionable investment. The farther a mill is located from the Delta, the higher its into-mill paddy delivery costs and

the more trouble it will have competing with milled rice shipped in from producing areas where there are many mills.

Annex 2

Selected Rice Subsector Statistics

Table A2-1	Rice Area, Yield and Production, 1996 to 1998 Summer Season, by Governorate
Table A2-2	Targeted vs. Actual Rice Area, 1997/98 and 1998/99 Summer Seasons
Table A2-3	Minimum and Maximum Wholesale and Retail Rice Prices for Four Governorates
Table A2-4a	Egyptian Rice Exports by Destination, 1995-1998
Table A2-4b	Egyptian Rice Exports by Destination, 1995-1998
Table A2-5	Monthly Value of Egyptian Rice Exports & Calculated Unit Values, 1994-1999
Table A2-6	Calendar Year Value and Volume of Egyptian Rice Exports & Calculated Unit Values, 1993/94 - 1998/99
Table A2-7	Marketing Year Value and Volume of Egyptian Rice Exports & Calculated Unit Values, 1993/94 - 1998/99
Table A2-8	Egyptian Rice Exports & Unit Values, 1980/81 to 1997/98

Table A2-1: Rice Area, Yield and Production, 1996 to 1998 Summer Season, by Governorate

Table A2-2: Targeted vs. Actual Rice Area, 1997/98 and 1998/99 Summer Seasons

**Table A2-3: Minimum and Maximum Wholesale and Retail Rice Prices
for Four Governorates**

Table A2-4a: Egyptian Rice Exports by Destination, 1995-1998

Table A2-4b: Egyptian Rice Exports by Destination, 1995-1998

**Table A2-5: Monthly Value of Egyptian Rice Exports & Calculated Unit Values,
1994-1999**

**Table A2-6: Calendar Year Value and Volume of Egyptian Rice Exports & Calculated
Unit Values, 1993/94 - 1998/99**

**Table A2-7: Marketing Year Value and Volume of Egyptian Rice Exports & Calculated
Unit Values, 1993/94 - 1998/99**

Table A2-8: Egyptian Rice Exports & Unit Values, 1980/81 to 1997/98

ANNEX 3

Shifts in Area Cultivated to Alternative Summer Crops

There is a perception among many GOE officials and analysts that rice area has expanded significantly in recent years at the expense of the other summer crops, particularly cotton. This annex presents national area (and production) statistics that illustrate shifts among alternative summer crops since 1980. It also presents area data for summer crops grown in the seven major rice-producing governorates. As with all time-series data in Egypt, the reader should treat the statistics as illustrative and indicative. As noted in section 2.3 of this report and in several other MVE reports (see especially Morsy Fawzi et al., 1999), MALR data are open to question and rice area in particular may be subject to official under-estimation. After comparing shifts in summer cropped area, we compare relative prices and net returns.

1. Shifts in Area Cropped at the National Level

Tables A3-1 and A3-2 present national area estimates by feddans per crop and the percentage planted to a particular crop (per summer season) relative to total area cropped. Area planted to rice expanded from an average of 967,544 feddans per year during the 1980s to 1,287,794 feddans during the 1990s. During each year from 1988 to 1997, area expanded, and the percentage of total summer cropping area (excluding fruit trees) cultivated to paddy rose from 17.1% to 26.0%. In contrast, cotton area planted declined from 20.7% of total area planted to summer crops in 1988 (22.4% in 1985) to 13.6% in 1998. Although maize area cultivated increased from an average of 1,405,098 feddans during the 1980s to 1,681,174 feddans during the 1990s, the percentage of total summer area cropped was nearly the same in the 1996-1998 period (27.5-29.4%) as during the early 1980s (28.4-30.1%). Area planted to horticultural crops (excluding fruit) rose appreciably from 1992 to 1998, as these crops represented 14.9% of total summer cropped area by 1998 (vs. 9.6% in 1992). Area cultivated to other summer crops expanded from an average of 883,879 feddans during the 1980s to 1,105,552 feddans during the 1990s, although the change in percentage of total area was modest (18.1% to 19.9%). Over the entire period of analysis, 1980 to 1998, the compound annual growth rate in area planted to cotton was negative, at -2.26%, while it was positive for rice (2.51%), maize (1.51%), and horticultural crops excluding fruit (1.54%).

**Table A3-1: Total Cultivated Area to Major Annual Summer Crops in
Egypt, 1980-1999**

Table A3-2: Percentage of Area Cultivated to Major Annual Summer Crops, 1980-1998

Figure A3-1: Area Cultivated to the Major Summer Crops, 1980 to 1990

2. Shifts in Area Cultivated to Summer Crops in the Major Rice-Producing Governorates

In this section we analyze area cultivated to annual summer crops in the six major rice-producing Delta governorates plus Fayoum. It is in these governorates that paddy is an allowable choice in the crop mix.⁴⁷ Upper Egypt is excluded from this analysis, except for Fayoum Governorate, where paddy cultivation is permitted.⁴⁸ Within the Delta, area planted to stands of fruit trees represent long-range land use and cropping pattern decisions that are not subject to year-by-year decisions in response to inter-annual variations in prices, input costs, ease of cultivation, labor supply, and weather/pest considerations. The data in Table A3-3 therefore show only area cultivated to annual summer crops from 1990 to 1999.

RDI Analysis of Shifts in Area Cropped to the Three Major Summer Crops

Krenz, Abdel Sattar and Kent (1999) examined shifts in area among summer crops in the seven major rice-producing governorates (six in the Delta and Fayoum) from 1990 to 1997. Their analysis focuses on two years, 1990 and 1997, which were chosen to represent a typical summer cropping pattern before liberalization and after liberalization. Their analysis shows that rice area expanded to 1997, while cotton area remained roughly constant (after decreasing in 1994 and 1995) and maize area also remained roughly constant from 1991 to 1996 before declining sharply (15 percent) in 1997. They observed that expansion in rice area came mainly from putting increased land under cultivation, much of it reclaimed land. Bringing new desert lands into cultivation in Sharkia and Beheira led producers to shift production of crops other than rice from the old lands to the new lands, where rice is not suited to the sandy soils. According to the authors, this allowed increased production of rice on old lands, with their heavier clay soils. They also argue that increased summer cropped area was due to more intensive cultivation of old lands and putting into cultivation idle land or land that required *amelioration*.⁴⁹

Krenz et al. conclude that “the most striking element of these data is the overall increase in the total area planted by 303,000 feddans between 1990 and 1997. This increase in area *explains* (MVE emphasis) two-thirds of the increase in rice area. Thus, only 158,000 feddans, or about a third, of the increase in rice in these governorates came from reductions in other crops.” Their reasons for this conclusion, advanced above, seem plausible although use of the word “explains” may be too strong.

⁴⁷ Paddy is also grown in significant areas of Qalubia and Menoufia, although not allowed by the MALR.

⁴⁸ Areas devoted entirely or largely to sugarcane production in Luxor and Qena are excluded from the analysis, as sugarcane planting is a multi-year cropping decision. Furthermore, the agricultural economies (and agribusiness system) in these governorates are focused on sugarcane production and processing.

⁴⁹ *Amelioration* refers to bringing back into cultivation land that had been previously used but had fallen into disuse due to high salinity, high alkaline soils, or lack of drainage.

Table A3-3: Area Planted to Summer Crops in the Seven Major Rice-Producing Governorates

Figure A3-2: Area Cropped to Rice, Cotton, Maize in the Rice Producing Governorates, 1990-1999

While the secondary data provide some clues about what was happening at the aggregate level, one wonders what was going on at the micro-level on farms in the old lands in these key governorates. It would be interesting to know what a sample of small farmers did. Did they shift largely from cotton to rice, particularly in recent years? Or was much of the expanded paddy area in these seven governorates on large (more commercially oriented) farms, many of which may have had at least part of their fields on reclaimed land? The secondary data don't allow us to answer these questions⁵⁰. Some type of sample survey, or a series of well-structured informal interviews with farmers, is necessary to get at these issues through probing inquiry. Unfortunately, the recall period is rather long (a decade), so a sample survey designed to obtain quantitative information may be inappropriate. Note that APRP/RDI is planning to do a survey of Delta farmers in 2000 in order to understand better factors driving recent apparent shifts in summer cropping patterns (as well as addressing broader crop rotation choice issues).

MVE Analysis of Shifts in Area Cropped to the Three Major Summer Crops

Our analysis, using the same MALR/CAAE data, includes preliminary 1999 estimates of area cropped to rice and cotton in the seven major rice-producing governorates. The cropping pattern in 1998 was unusual, as paddy area dropped 20 percent from 1997 to 1998. This major shift made 1998 an anomalous summer season. The preliminary 1999 data show the trends of the 1990s, with rice replacing cotton, reasserting themselves.

From our analysis, it is clear that the expansion in rice area paralleled or coincided with the increase in summer cropped area in the seven governorates, though the causal mechanism linking one to another is likely to have been complex. From 1990 to 1996 total summer cropped area rose by 370,086 feddans and area cultivated to paddy increased by 333,712 feddans. In 1997, as total summer cropped area dropped 113,600 feddans in the seven governorates, paddy area continued to rise, increasing another 127,700 feddans. This apparent substitution of paddy for cotton and maize (whose combined area was a decade-low 1,185,229 feddans in 1997, or only 80 percent of rice area) was reversed in 1998 but appears to have re-emerged in 1999.⁵¹

Area cultivated to the three major summer crops—rice, cotton and maize—represented 84 percent of total summer cropped area in 1990 and 1991; this had expanded slightly to 86.0-86.5 percent by

⁵⁰ Census data, collected at ten-year intervals, may provide enough detail on cropping patterns for different-size holdings to allow for accurate snapshots that would show changes over time.

⁵¹ Note that the sum of cotton and maize area was 33.8% greater than rice area in 1990. This fell progressively, so this sum was only 94.5% of paddy area in 1994, from which point it fluctuated around 100% (cotton + maize area = paddy area) until 1997, when it fell to 80.0%. Preliminary MVE estimates suggest that the 1999 ratio once again was below 1:1 at 82.6%. That is, cotton plus maize area was only equal to 82.6% of paddy area in the seven major rice-producing governorates.

1996-1998.⁵² Despite this relatively constant share of summer cropped area, there were significant shifts within area devoted to the three major field crops. Paddy area rose from 36.1 of total summer area in 1990 to 48.1 percent in 1997. In absolute terms, the expansion in rice area from 1990 to 1997 was dramatic—a 45.2 percent rise. Cotton area declined from 680,084 feddans in 1990 to 532,519 feddans in 1995 before returning to 681,662 feddans in 1996 and then dropping to 589,090 feddans in 1998 and 545,089 feddans in 1999. In relative terms, cotton area declined at the expense of paddy, from 24.1 percent of summer cropped area in 1990 to 20.6 percent in 1998 and probably under 18 percent in 1999.⁵³ Maize area stayed roughly constant during the 1990s in the seven governorates, though it decreased slightly in proportional terms. Among the three major field crops, area cultivated to rice increased from 42.8 percent in 1990 to 55.6 percent in 1997. Preliminary estimates for 1999 are that the distribution of area cropped to the three major field crops are as follows: rice at 49.7 percent, cotton at 18.3 percent, and maize at 22.4 percent. It appears as if paddy has substituted for cotton in the seven principal rice-producing governorates, especially since 1996. Over the entire nine year period, the (compound) annual growth rates for rice, cotton and maize produced in the seven major rice-producing governorates were 3.3%, -1.1% and -1.1% respectively.

Beyond the three major field crops, it can be observed that area planted as *darawa*, maize intended as green fodder, varied between 39,726 and 66,045 feddans during the period 1990-1997 before reaching a high of 75,348 feddans in 1998. This finding illustrates the importance of livestock in intensive, irrigated agriculture; this maize is harvested green to provide livestock with feed during the summer growing season. Area planted to sorghum, 71,631 feddans in 1998—another high for the 1990s—is also allocated to livestock feed. Area cultivated to oilseeds remained above 50,000 feddans per summer season from 1990 to 1995 (with the exception of 1994), but it dropped to 25,454 feddans by 1998.

One surprising finding is that total summer cropped area dropped 10.8 percent from 3.197 million feddans in 1996 to 2.853 million feddans in 1998. The reason for this decline is not clear. Krenz et al. (1999) noted that the expansion in area planted to summer crops in the seven governorates (from 2.827 million feddans in 1990 to 3.197 million feddans in 1996) was due largely to land reclamation. How total summer cropped area would decline markedly in two years is a mystery, though loss of agricultural land to non-agricultural uses is a possibility.⁵⁴ It will be interesting to see if 1999 data show a continuation of this apparent trend.

⁵² In 1999, area to the three major summer crops may have been over 90% of total area in the seven rice-producing governorates (preliminary MVE estimate).

⁵³ The 1999 estimate of total summer cropped area is not yet available, so the MVE guesstimate of 18% should be treated with caution.

⁵⁴ Considering the agricultural land in the Old Lands that goes out of production each year, due to building or urbanization, makes the picture more complex. Over the past decade, some old land was permanently taken out of production as new land was reclaimed or as idle and depreciated land was put into production. Krenz et al. (1999) and MVE (in this annex) look at net increases in total summer cropped area. If, say, 30,000 feddans go out of production each year in the Old Lands, the actual addition of new land is greater than what appears as a net increase in summer cropped area.

3. Changes in Relative Prices

Table A3-4 shows annual producer prices through 1998, as reported by the MALR/CAAE.⁵⁵ These price data are less reliable than the area and production estimates of MALR, but they are the only available producer time-series at our disposal. Note that producer prices were fixed during the 1980s and up through the early 1990s for all three major summer field crops. The GOE controlled the domestic market for rice through two major mechanisms, price policy and compulsory procurement. Prior to 1993, the GOE received paddy at a fixed administered price through PBDAC branches throughout the country. This system began to be relaxed in 1993 by removing the compulsory procurement policy and announcing an indicative price for paddy that was not binding. Open market sales of paddy became progressively larger during the 1990s as the share of public rice mills declined.

After 1993, paddy prices fluctuated in response to market conditions. Up through the mid-1990s, the rice market was segmented in that the public mills bought paddy at one fixed procurement price, while localized informal trade and the emerging private sector, longer-distance trade was subject to regional forces of supply and demand (though influenced by procurement prices). By the second half of the 1990s, rice trade became liberalized, with the public mills buying paddy at a range of prices, depending on the variety, private sector competition, and regional forces of supply and demand.

Note that the simple ratio of the rice to maize price rose during the period under investigation from 0.66 in 1980 to 1.25 in 1998. The rice price was slightly below the maize price (in LE/mt) in the early agricultural sector reform years of 1987 to 1991; beginning in 1992, the rice price became higher than the maize price, and the divergence gradually widened. Comparing gross returns to rice and cotton production per feddan, using Giza 75 prices and yields in the calculation, shows that the ratio of cotton returns to rice returns has been roughly constant over the 1988 to 1998 period. This seems to go against the conventional wisdom that rice production is much more profitable and has become so since the rice subsector was liberalized. Gross returns are, of course, a crude approximation for net returns (or profitability), but the results are nevertheless interesting.

4. Factors Affecting Producer Response

It is also important to note that many rice producers in the Delta grow rice primarily to feed their families. CAPMAS data show much higher rice consumption per capita for rural households in Lower Egypt in 1995/96 (47.8 kg.) and 1990/91 (46.0 kg.) than in other regions (rural or urban) of Egypt. Average rice consumption in rural areas of the Delta was estimated to be nearly as high as consumption of wheat products (wheat grain and flour, plus macaroni) in rural areas of Lower Egypt (63.3 kg. in

⁵⁵ These prices are deflated using the 1986/87 wholesale price index in Table A3-5.

1995/96). To the extent that rice is an important staple among small farmers in the Delta, sales of paddy are driven more by the size of the paddy harvest (and any marketed surplus above household needs) than by purely commercial considerations. Hence, paddy production may be somewhat less price responsive than many analysts would think assume.

Table A3-4: Nominal Farm Gate Prices for the Major Summer Crops, 1980-98

Table A3-5: Real Farm Gate Prices for the Major Summer Crops, 1980-98

Figure A3-3: Real Farm Gate Prices for Cotton, Rice and Maize, 1980-98

In contrast, cotton prices, shown for the benchmark Giza 75 variety, were announced most years (until 1998) during the growing season. The Giza 75 price was not always announced to farmers before planting, so their price expectations were probably based more (in most years) on the price paid to growers during the preceding marketing season. As for maize, its trade has not been controlled by the GOE. Most maize, probably at least 80 percent, is used for animal feed in Egypt. Hence, the demand for maize is a derived demand, based in large part on the demand for livestock products, particularly milk and meat. Whatever the source of demand for maize, the GOE does not set prices, except for the small volumes purchased by GASC to grind and mix with wheat flour.

5. Comparative Net Returns to Summer Crops and Annual Rotations Having Different Summer Crops

Net returns per hectare cultivated to each major summer crop are shown in Table A3-6. These returns are calculated by the MALR based on illustrative crop budgets. They are not obtained from actual sample survey data. Nominal returns rise, of course, over time, and we calculate constant returns using a producer price index (prices paid to producers), where 1986-87 is the base year.

Comparing relative nominal returns to cotton, rice and maize, one can see that net returns to cotton production were significantly higher than returns to rice production during all of the years of the 1990s except 1994 and 1998. Net returns to cotton were 33 to 150 percent higher than returns to rice during most of the 1990s. Returns to cotton were highest in 1995-1997, years of high guaranteed producer prices. In 1998, the relative profitability of the two crops was reversed and net returns to rice were 54 percent higher. It will be interesting to see if this represents a shift that will continue into 1999 and beyond.

While net returns to the three summer crops were all about equal in 1990, returns to maize declined *in nominal terms* to 1995 and lagged returns to cotton and rice during the entire decade.⁵⁶ Only in 1998 were net returns to maize greater than net returns to cotton. Maize returns were below returns to rice, ranging from 49 to 86 percent those of rice from 1991 to 1998.

Figure A3-3 shows real net revenue earned per feddan from the three major summer field crops over the 1980-1998 period, using the wholesale producer price index as a deflator. The significantly higher profitability of cotton during much of the 1990s is graphically revealed, as well as rice's steady increase in real returns and relatively constant real returns to maize production.

⁵⁶ The net returns are for the maize production enterprise alone. If returns were calculated across the range of feed plus livestock enterprises on the same farm, the result may be different. That is, small farmers who grow maize to feed their own livestock think about returns to maize somewhat differently than small farmers who grow maize to sell to other livestock producers.

Table A3-6: Average Total Cost, Total Revenue and Net Revenue for the Major Summer Crops, 1980-1998

Figure A3-4: Real Net Revenue for the Major Summer Crops

6. Addendum: 1999 Summer Cropping Season and into the 21st Century

Preliminary estimates of area cultivated to the three main summer crops are available for 1999. Cotton area declined 18.2 percent relative to 1998, which in turn was 14.3 percent below the recent high area of 920,911 feddans in 1996. Hence, cotton area dropped 28.9 percent from 1996, the first year of APRP, to 1999, when it registered a mere 645,417 feddans, the lowest level in the 1990s and indeed during the entire 20th century.⁵⁷ Even during the height of World War II, area planted to cotton was higher (705,000 feddans in 1942/43 and 712,812 feddans in 1943/44).

In comparing area planted to cotton relative to the two other major summer field crops, rice and maize, cotton was grown on only 18.0 percent of the area planted to the three field crops in 1999. This percentage has declined steadily since 1980, when cotton was cultivated on 34.1 percent of the land allocated to the three major summer field crops. Some observers think that this represents a structural shift in the cropping pattern, where cotton is unlikely to retain its former prominence. Although MVE does not expect cotton area cultivated to drop below 650,000 feddans, producers may continue to cultivate less than 700,000 feddans to cotton per summer growing season during the first years of the 21st century.

Maize area decreased slightly, 2.9 percent or by about 50,000 feddans, to 1.65 million feddans from 1998 to 1999. As in the case of cotton, the highest reported area cultivated to maize in the 1990s was in 1996, and the 1999 area was 6.8 percent below that level. Yet the maize area decline has been modest during the first three years of APRP. Maize remains the most widely cultivated summer field crop at the national level, grown on over 45 percent of the area devoted to the three major summer field crops since 1991. This highlights the importance of livestock enterprises in Egyptian farming systems, as maize is grown largely as feed.

Rice area, reported by MALR as 1.56 million feddans in 1999, topped the previous record high of 1.53 million feddans in 1997. Unofficial estimates for the 1999 crop range as high as 1.8 million feddans. Area cultivated to rice in 1998 had plunged 21.0 percent relative to 1997, largely due to more vigorous enforcement of area restrictions. There was little paddy grown in Qalubeya and Menoufia in 1998, unlike 1997 and 1999, and rice area also fell sharply in Fayoum that year. The 1998 summer growing season appears to have been an anomaly, however, and most observers anticipate that paddy will be grown on at least 1.5 million feddans in future years, despite the GOE's stated objective to lower rice area to about 1.0 million feddans.

In 1999, rice occupied its highest proportion of total summer cropped area, reaching 42.7 percent. This ratio has increased steadily since 1988, when it was only 23.0 percent (and cotton was 27.8 percent), exceeding 30 percent for the first time in 1991 and rising to 42.5 percent in 1997. In the early 21st century, it will be interesting to see if rice area continues to expand, remains at roughly the same level, or declines in accordance with the GOE plan to reduce area planted and save water for the new lands. Needless to say, area grown to paddy and its proportion relative to the other summer

⁵⁷ Cotton area and production statistics are reported for the entire 20th century in *The Egyptian Cotton Gazette*, published semi-annually by ALCOTEXA.

field crops are important proxy measures for the success of MALR and APRP efforts to promote short-season rice varieties and reduce both area planted to paddy and irrigation water used in its cultivation.

Annex 4

Commercial Mills Registered by the Cereals Chamber Since December 1998

This annex briefly summarizes new mill registrations by the Rice Branch of the Cereals Industry Chamber since December 1998. None of the 33 newly registered mills has the capacity to process more than 40 mt of paddy/day. Two have that capacity. Three can process 30 mt/day, and eight can process 20-25 mt of paddy per day. The remaining twenty mills are able to process less than 20/mt of paddy per day. The total capacity of these mills is 503.5 mt/day of paddy or 100,700 mt per year (assuming 200 days of annual operation). The mean capacity of these mills is 15.3 mt/day.

For the 27 mills that reported numbers of workers, they noted that 91 jobs had been created to run these mills, or an average of 3.4 workers per mill. Assuming this mean for all 33 mills, 111 jobs were created (calculated by extrapolation).

Table A4-1 summarizes the numbers of mills and key characteristics by governorate. Although there are indications that there is excess industry capacity, private individuals continue to invest in rice mills, mainly with Chinese equipment.

Note also that two established rice milling companies, the Mabrouk and Karkorah groups, have invested in new milling capacity in Borg el Arab. Mabrouk added a new mill in January 1999 that can process 150 mt per day. Karkorah added its second mill with 85-90 mt/day capacity.

Table A4-1: Rice Mills Registered from December 1998 through November 1999

ANNEX 5

SELECTED NEWSPAPER ARTICLES

Newspaper: *Al Ahram* Date: 29 August 1998

Subject: Minister Youssef Wally would like paddy prices to be LE 600/mt.

Newspaper: *Al Akhbar* Date: 28 October 1998

Subject: Fall 1998 retail rice prices are low.

Newspaper: *Al Wafd* Date: 14 December 1998

Subject: Minister Goueli and Ramalan, Indonesian Minister of Trade and Industry, sign an agreement to export 400,000 mt of rice to Indonesia.

Newspaper: *Al Akhbar* Date: 17 December 1998

Subject: Prime Minister El-Ganzouri negotiates with Indonesian Minister of Trade over export of 400,000 mt of Egyptian rice.

Newspaper: *Al Arabi*

Date: 18 January 1999

Subject: People's Assembly criticizes Minister Goueli for announcing exports to Indonesia, which would not be possible without a large subsidy.

Source: Cereals Industry Chamber, Rice Branch

Date: 7 August 1999

Subject: ARC's A.A. Tantawi and Moh. Kamal Ghoneim Address Rice Branch before opening of 1999/2000 season. Tantawi calls for a minimum price of LE 600/mt for farmers.

Ghoneim gives reasons for problems in the rice milling industry in recent years and calls for GOE intervention in buying paddy and an export subsidy when domestic prices exceed the world prices.

Source: Cereals Industry Chamber, Rice Branch

Date: 4 September 1999

Subject: Moussa Kassab tells the Rice Branch about their successful lobbying efforts. He reports that Dr. Youssef Wally asked Minister Atef Ebeid (in a formal letter) to give his opinion about the participation of public mills in paddy buying and MPE provision of finance to achieve market stabilization. Wally also asked Minister Goueli to give his opinion on the participation of GASC in buying part of the paddy crop at LE 600/mt. Wally also wrote Hassan Khedr asking him for his opinion on PBDAC's buying paddy on behalf of the mills for LE 600/mt. PBDAC has allocated LE 700 million to buy paddy.

Newspaper: *Al Akhbar*

Date: 26 August 1999

Subject: PBDAC announces availability of LE 700 million for paddy procurement

Newspaper: *Al Wafd*

Date: 5 October 1999

Subject: Minister Goueli announces that Agricultural Commodity Council will address speculation in rice prices

Newspaper: *Al Ahrām*

Date: 3 October 1999

Subject: Holding Company for Rice and Flour Mills invites paddy producers to mill at eight government mills at LE 35/mt

Newspaper: *Al Ahram* Date: 9 December 1999

Subject: Rice and Flour Milling Holding Company will be merged into Food Industries Holding Company

Newspaper: *Al Ahram* Date: 19 December 1999

Subject: Minister Youssef Boutros Ghali will work to promote rice and citrus exports

Newspaper: *Al Akhbar* Date: 30 November 1999

Subject: Instructions to public sector banks to finance rice purchases

Newspaper: *Al Wafd* Date: 20 October 1999

Subject: One Policy to Determine Rice Prices

Translation: The Commodity Council for Agricultural Crops has decided to re-evaluate the production volume and the availability of rice for the last season in the Egyptian market. Dr. Ossama Kheir El-Din, Chief of the Commodity Council, emphasized that, despite the mass-production, data concerning rice production are not clear and indefinite. He pointed out that some of the rice producers are storing paddy and keeping rice off the market. He also added that the responsibility for wasting 40% of the rice crop lies with milling rice machinery. The Commodity Council members, who are also rice exporters, have made an agreement to coordinate and unify their positions in international tenders.

A workshop will be held in Alexandria next Friday for the council members to create an image for the rice industry and exporting rice. There has been a rise in the rice prices during the last period to LE 700/ton for paddy rice and to LE 1200/ton for white rice.

Newspaper: *Egyptian Gazette*

Date: 2 June 1999

Subject: GASC rice tender cancelled

Newspaper: *Al Alam Al Yaum*

Date: 16 May1999

Subject: The private sector asks for return of cooperative system for marketing and establishing public union for rice. Increasing rice prices threaten to decrease Egyptian rice exports in international markets.