STAT

Sanitized Copy Approved for Release 2009/12/07 : CIA-RDP85T01058R000405200001-5

[redacted] 25X1

520

04 OCT 1985

MEMORANDUM FOR: (See Distribution List)

FROM: [redacted] 25X1
Chief, Strategic Resources Division
Office of Global Issues

SUBJECT: Cuban Citrus Industry [redacted] 25X1
25X1

1. The attached memorandum contains an assessment on the status of the Cuban citrus industry. [redacted] all data and [redacted] have been retained. [redacted] 25X1
25X1
25X1

2. This analysis was produced by [redacted] 25X1 of the Agricultural Assessments Branch with contributions from [redacted] Cuba-Caribbean Branch, Middle America-Caribbean Division, Office of African-Latin American Analysis. [redacted] 25X1
25X1

3. Comments and questions are welcome and may be addressed to the Chief, Agricultural Assessments Branch, [redacted] 25X1

[redacted] 25X1

Attachment:
The Cuban Citrus Industry: Continuing Shortfalls in a Showpiece Diversification Effort [redacted] 25X1
GI M 85-10251, October 1985, [redacted] 25X1

NGA Review Completed [redacted] 25X1

[redacted] 25X1

[redacted] 25X1

SUBJECT: Cuban Citrus Industry [redacted] 25X1

OGI/SRD/AAB [redacted] (4 October 1985) 25X1

Distribution List:
1 - Richard Cannon, Agriculture
1 - Bobby Spiers, Agriculture
1 - Edwin Cissel, Agriculture
1 - Pat Ashburn, Agriculture
1 - Glenn Whiteman, Agriculture
1 - Byron Jackson, Commerce
1 - Kenneth Skoug, State
1 - Joseph O'Mahoney, State
1 - David Smith, State
1 - David Wigg, NSC
1 - SA/DDCI
1 - Executive Director
1 - DDI
1 - DDI/PES
1 - NIO/Econ
1 - NIO/LA
1 - CPAS/ISS
1 - D/OGI, DD/OGI
2 - C/ECD/CM [redacted] 25X1
1 - SOVA/TWAD [redacted] 25X1
1 - SOVA/ING/EP/FT [redacted] 25X1
1 - C/ALA/MCD/CU [redacted] 25X1
1 - ALA/MCD/CU (
4 - ALA/MCD/CU (
1 - ALA/NCD/MACD
1 - C/SRD
5 - C/SRD/AAB
1 - OGI/EXS/PG/C
8 - OGI/EXS/PG

[redacted] 25X1

Central Intelligence Agency

Washington D C 20505

DIRECTORATE OF INTELLIGENCE

0 4 OCT 1985

The Cuban Citrus Industry: Continuing Shortfalls in a Showpiece Diversification Effort

Overview

In 1969, ten years after the Revolution, the Havana government embarked on a 12-year experimental program to convert hundreds of thousands of acres of idle land into citrus orchards. The program had two announced goals; to diversify agriculture and to generate income. As part of the program, hundreds of secondary schools were built in the new orchards, not only to educate rural youngsters and indoctrinate them in communism, but also to provide a labor force for the fruit industry. This continuing program, intended as a showpiece, has not met expectations. The increased amount of land brought under citrus cultivation is impressive, but production and foreign earnings have consistently fallen far short of plan. Furthermore, while tens of thousands of youth have been educated and presumably indoctrinated, using them as a labor force in the orchards has created some serious agronomic problems. Because of these shortcomings, in our estimation the program is not likely to become a model for further expansion of agriculture or for other sectors of the Cuban economy. 25X1

Despite a quadrupling of citrus hectarage and output since the onset of the program and development of the unique support infrastructure, we estimate that citrus presently contributes less than one percent of total national income. Moreover, it ranks a distant second to sugar in terms of agricultural export earnings, accounting for only about two percent of total revenues compared to roughly 75 percent for sugar. 25X1

In 1981, overly optimistic Cuban production plans encouraged CEMA countries--the USSR, East Germany, Czechoslovakia, Poland and Bulgaria--to invest in a further expansion of the citrus program. In that year, Cuban plans called for output of one million tons by 1985 and 2.5 million tons by 1990 even though the previous year's production only reached 441,000 tons. Based on these projections, the CEMA countries entered into an agreement with Havana to invest $350 million in the industry over a five year period. In return, the Cubans pledged to meet these countries' major citrus import needs. Even though the funds--representing about 15% of all Cuban agricultural investment and 3% of total investment--were allocated, Havana has not been able to adequately fulfill its part of the agreement. We estimate

25X1

1985 production will be at least 400,000 tons short of the 1985 plan. 25X1

Prospects for any significant improvement in the industry during the remainder of the decade are dim. Because of obligations to CEMA, only 5 to 10 percent of Cuba's citrus exports are available for sale to hard-currency paying Western countries. Hard currency shortages--which have been particularly acute since Western creditors imposed austerity measures in 1982--will continue to limit the regime's ability to expand citrus hectarage or finance imports of key agrotechnical inputs such as pesticides and fertilizers. As a result, we believe that the dramatic growth in citrus production achieved during the 1976-83 period will slow and that output will level off at one-million-tons per year by 1990--1.5 million tons below plan. 25X1

Under these circumstances, there is little chance that Cuba will make direct inroads into the US fresh citrus market. Even so, an indirect impact is possible. Increased exports of Cuban citrus to CEMA could cause CEMA's traditional Mediterranean suppliers to divert their products to the European Community, thereby cutting into the US share of that market. 25X1

In the unlikely event that Cuba's financial situation permits additional investment in the citrus industry in the near term, Havana may eventually be in a position to compete directly with the United States in the juice/concentrate market. New investment funds could be used to further expand hectarage or to purchase agrochemicals, either of which--combined with better orchard management--would boost production above our current projection. Given the recent completion of three modern, large scale citrus processing plants, along with the refurbishment of an existing plant, Cuba could begin exporting surplus quantities of juice and other by-products to the West, perhaps by the end of the decade. 25X1

This memorandum was prepared by 25X1
of the Agricultural Assessments Branch, Strategic Resources Division, Office of Global Issues, with contributions from , Cuba-Caribbean Branch, Middle America-Caribbean Division, Office of Africa-Latin American Analysis. 25X1
Comments and questions may be directed to 25X1
Chief, Strategic Resources Division, on 25X1

GI M 85-10251 25X1

25X1

25X1

The Cuban Citrus Industry: Continuing Shortfalls in a Showpiece Diversification Effort

Introduction

Since the 1959 revolution, Havana has attempted to expand and diversify its sugar-dominated economy and boost exports to CEMA trade partners. During its first two years in power, the Castro regime took more than 15 percent of the island's cane fields out of sugar production in preparation for agricultural diversification. As a result of agrarian reforms in 1959 and 1963, large landholdings were reallocated, the bulk of arable land was organized under state control, and restrictions were levied on private land ownership. Since 1963 the state has continued to expand its holdings and now directly controls about 80 percent of the arable land.

25X1

The citrus sector was selected to serve as the centerpiece of Havana's drive to diversify traditional farm exports. Owing in large part to technical assistance from the Soviet Bloc and assured, subsidized CEMA markets for citrus, significant progress has been made. A 12 year plan launched in 1969 for massive plantings of state groves--most in areas where citrus had never been grown--resulted in an impressive expansion of the citrus sector. Prior to the revolution, citrus landholdings amounted to only 12,000 hectares, yielding an annual average of about 58,000 tons of fruit. From 1968 to 1978, according to Cuban statistics, citrus plantings more than quadrupled, increasing from 30,200 hectares to 129,500 hectares. By 1983, when many of the newer trees had begun to bear fruit, production totaled 632,000 tons and exports had reached about 380,000 tons, almost all of which was destined for the Soviet Bloc (Figure 1). Long range plans call for a further doubling of hectarage to about 250-300,000 hectares, approximately the citrus area of Florida.

25X1

Despite sizable progress, Havana has often fallen short of its announced annual goals for citrus production and exports. The shortfall is due, in our estimation, to an inability to finance either needed technological inputs or the further expansion of planted area. The financial squeeze has been particularly tight since 1982 when Havana's freewheeling import policy first came under the close scrutiny of Western official and commerical creditors attempting to roll over Cuba's hard currency debt. Hard currency shortages have especially limited the regime's ability to finance critical imports, such as Western pesticides and fertilizers, that are required to control pests and diseases and to increase yields.

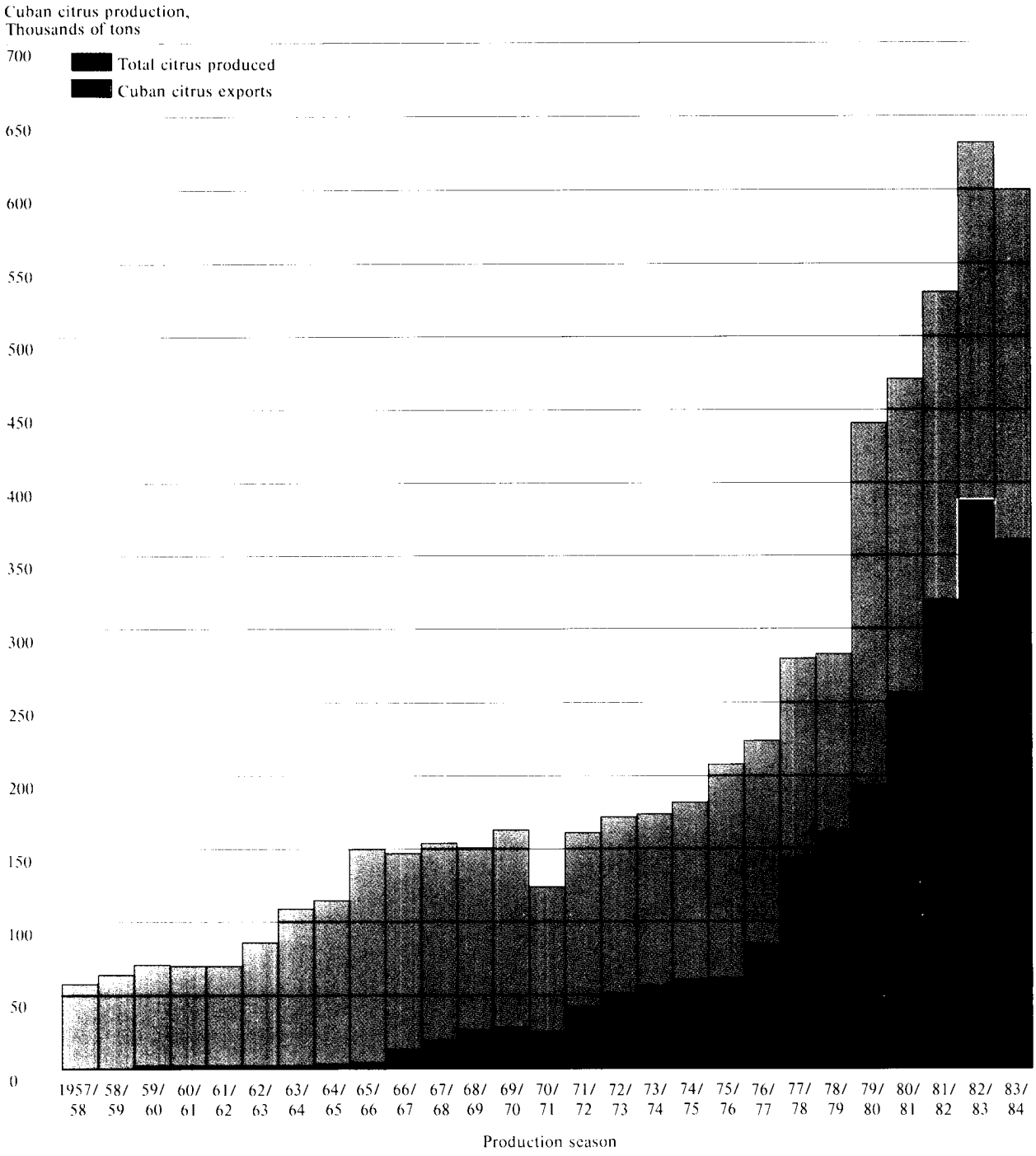
25X1

The Agricultural Setting

Climate. Citrus growing conditions on Cuba are good though not ideal. The soil is a sandy to sandy loam and provides good drainage. The soil profile--about three feet--is generally

25X1

Figure 1
Cuban Citrus Exports as a Proportion of Total Production



306883 9-85

25X1

adequate and the 6.5 average pH is ideal. These favorable characteristics closely resemble those of eastern Florida. The tropical climate, with little diurnal or seasonal temperature variation, also allows fruit to be harvested one-two months earlier than citrus produced in semi-tropical climates (e.g. Florida). [redacted] 25X1

The Cuban climate, however, also has some drawbacks. The lack of seasonal temperature variations prevents the trees from undergoing dormancy, which, in part, causes citrus to turn its expected color, and builds sugar and aroma. Much of Cuban citrus, therefore, remains green at harvest. Most precipitation occurs during the spring-summer rainy season. Because of the seasonality of precipitation and the sandy character of the soils, the orchards must be periodically watered. Finally, pests and diseases tend to be more prolific in Cuba's tropical environment, an especially important problem because of pesticide shortages. [redacted] 25X1

Infrastructure. Concurrent with the hectarage expansion of the 1970s, was the development of the infrastructure needed to maintain the new and larger groves and to handle increases in production. Secondary schools, termed ESBECs,[1] were built in hundreds of new state groves. Students attending these institutions are required to spend half of their school day helping to tend adjacent citrus plantings. [redacted] 25X1

[redacted] 25X1

[redacted] The inexperienced and 25X1 physically immature students have created some serious problems. For example, in some orchards, trees have been improperly grafted and planted, and the fruit--especially on the higher branches-- not completely harvested. In contrast to the student labor force, well qualified scientists at six experimental stations scattered over the island investigate all facets of citrus production, including variety research, breeding, pest control, cultural practices and harvesting. According to US experts, the results of these investigations are highly respected by citrus scientists worldwide. Recently, three modern large-scale citrus processing plants were completed. Along with a refurbished older plant, these facilities are enabling the Cubans to produce juices, concentrates, jams and oils both for internal consumption and planned export in the near future (Figure 2). [redacted] 25X1

The Role of Citrus in the Cuban Economy

Notwithstanding recent dramatic growth in Cuban citrus production, the sector still plays a relatively minor role in the

---

1 Escuelas Secundarias Basicas en el Campo, "Basic Secondary Schools in the Country."

[redacted] 25X1

Cuban economy. We estimate that citrus production--which utilizes no more than one percent of the agricultural lands not planted to sugar cane--contributes less than one percent to total national income. Although about 55-60 percent of the fruit is exported, citrus is still a distant second in terms of agricultural export earnings, contributing only about two percent to total export revenues as compared to approximately 75 percent for sugar.

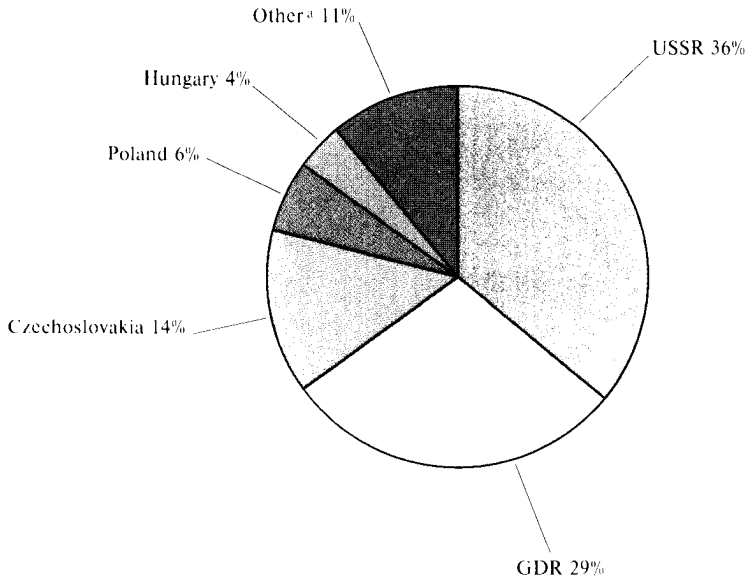
As citrus production began to leap in 1980 and 1981, overly optimistic projection figures were promulgated for the rest of the decade. Plans called for Cuba to produce one million tons of citrus by 1985 and 2.5 million by 1990, of which 1.5 million would be exported. As a result of these projections, an agreement was drawn up in 1981 between Havanna and five CEMA countries (USSR, Bulgaria, Hungary, German Democratic Republic and Czechoslovakia) in which the latter agreed to invest $350 million into the further development of the Cuban citrus industry. This was seen as a method of reducing the dependence of these countries on Western citrus exports and as a means of conserving hard currency. In return, Cuba agreed to increase its exports of citrus fruits and become the main supplier for these countries. Although citrus output and exports have increased, they have fallen considerably short of expectations.

Approximately 90-95% of current Cuban exports are delivered to CEMA countries, with the USSR and German Democratic Republic accepting the largest deliveries (Figures 3 & 4). The remaining exports go to various Western countries early in the production season as Cuban citrus matures one to two months earlier than in Mediterranean countries or the US. Later deliveries will not sell because the quality of the Cuban fruit falls considerably short of that to which Western consumers are accustomed.

Citrus Industry Trends

Hectarage. Following the rapid expansion of citrus plantings that ocurred in the 1970's, hectarage in recent years has declined somewhat. Based on Cuban government statistics, planted area reached an all time high of 129,500 hectares in 1978. The average hectarage in subsequent years has only been 122,000 hectares, 10 percent of which are private landownings (Figure 5). Approximately 5,000 hectares per year were planted during this time period, generally to replace dead or diseased trees or for limited expansion of orchards with pockets of poor soil. The proportions of citrus fruit produced and the varieties grown closely parallel those of Florida. Slightly over two-thirds of citrus consists of oranges, about one-fifth is grapefruit and the remainder of plantings are tangerines, Persian limes and some lemons (Figure 6).

Figure 3
Distribution of Cuban Citrus Exports, 1977-83

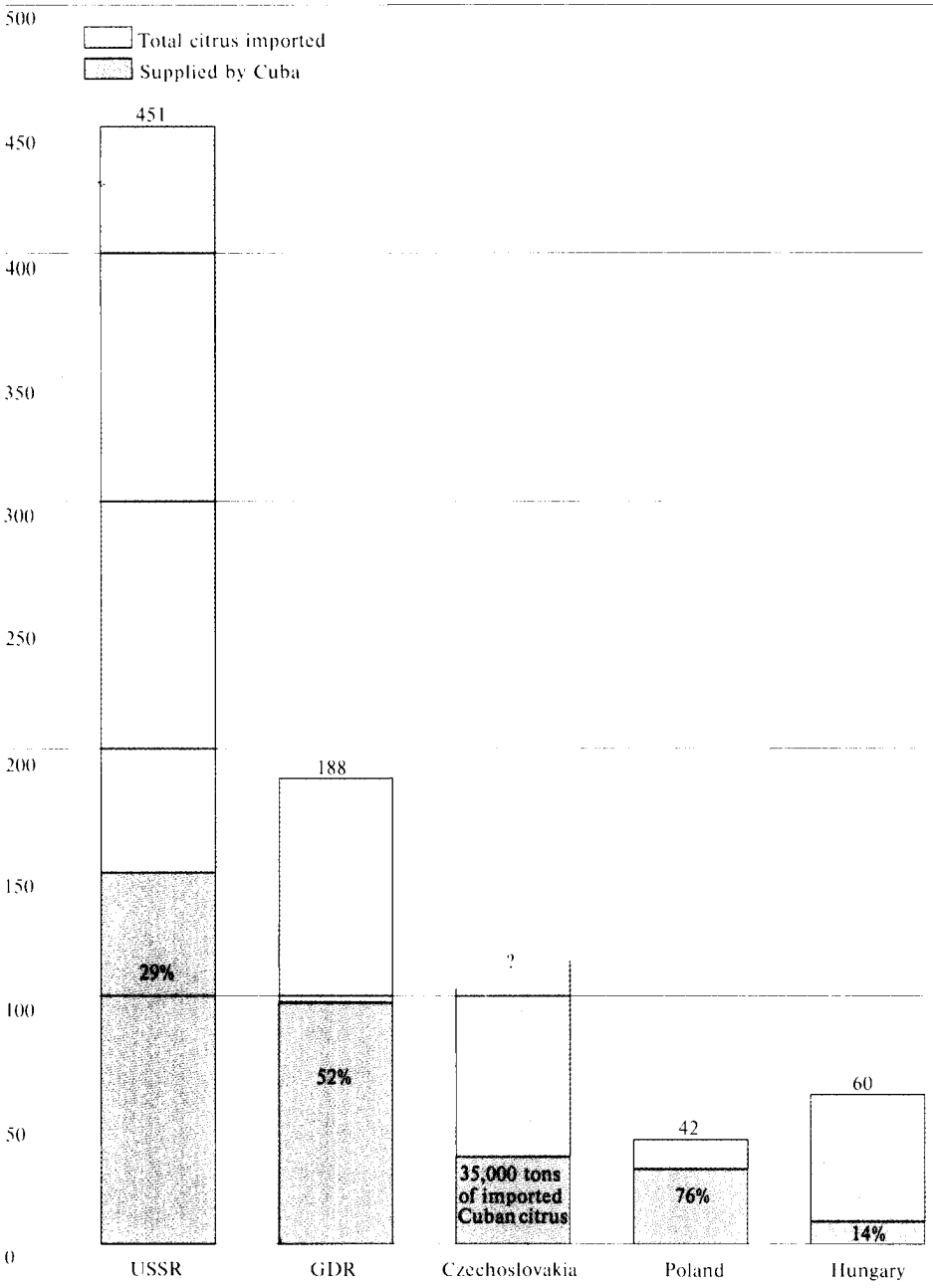


[a] Includes Bulgaria, Romania and various Western countries.

25X1

306881 9-85

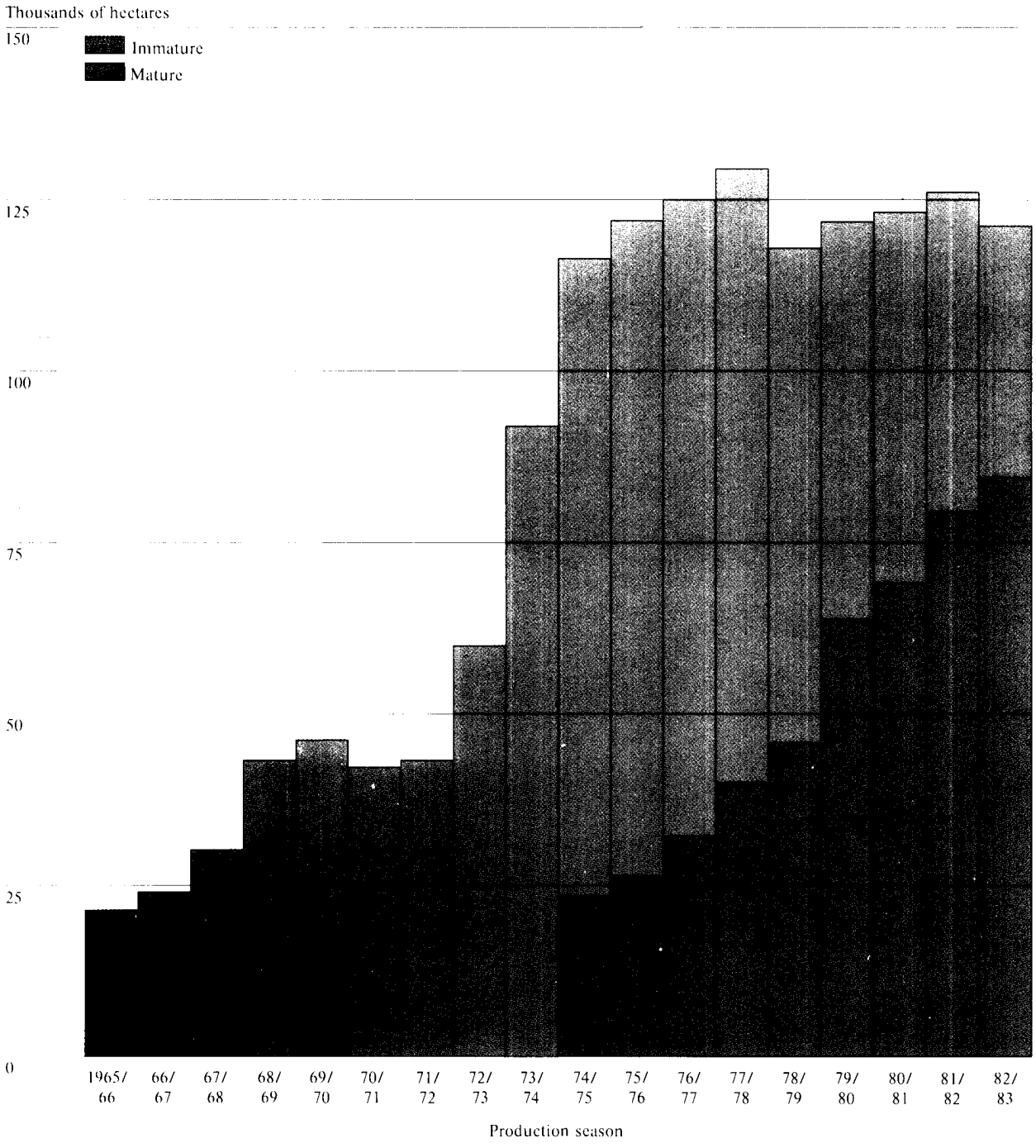
Figure 4
Percent of Imported Citrus Supplied by Cuba in 1983



306882 9-85

25X1

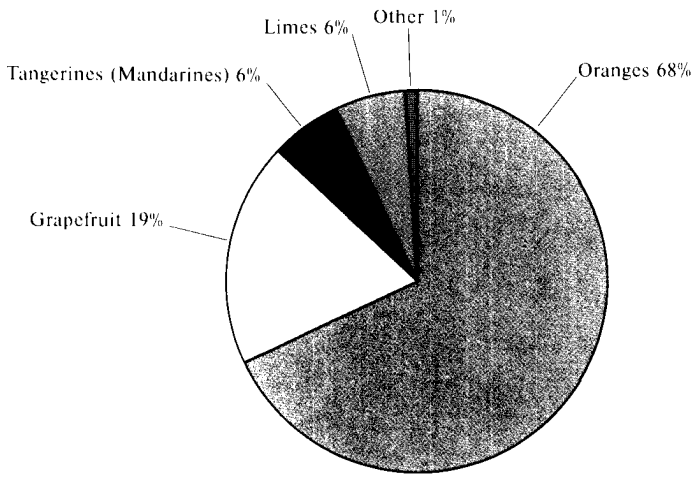
Figure 5
Cuban Citrus Hectarage



306880 9-85

25X1

Figure 6
Proportions of Cuban Citrus Fruit Produced, 1977-83



25X1

306884 9-85

25X1

25X1

25X1

25X1

25X1

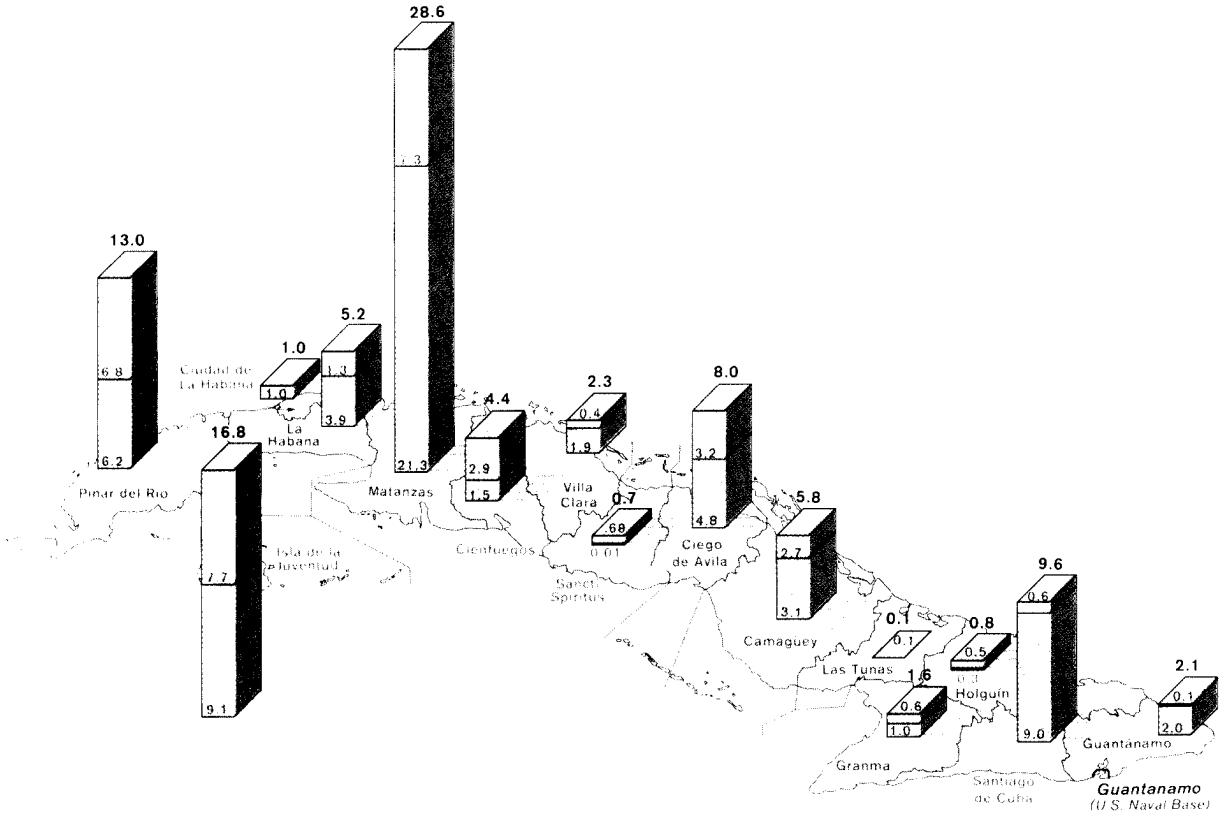
25X1

(end in-text statement)

The reduction in hectarage since 1978--about 5 percent--probably is attributable to environmental and logistics problems as well as competing investment priorities. Three large hurricanes struck the island during 1979 and 1980 damaging and destroying trees and fruit. One US expert believes the Cubans also may be stabilizing citrus hectarage because increasing fruit production in the last several years has made it very difficult to keep up with harvesting, delivery, packaging and marketing. It is only within the last two years that some of the fruit could be

25X1

Figure 7
Cuban Citrus-Producing Hectarage



13.0 Total hectarage under citrus production, per provincia

Hectarage of immature citrus groves

Hectarage of mature citrus groves

Provincia-level boundary

Note: All numbers represent a percentage of total hectarage devoted to citrus production, by provincia.

25X1

706015 (A04704) 10-85

25X1

25X1

25X1

Figure 8

25X1

CUBAN CITRUS HECTARAGE

PROVINCE	HECTARAGE MATURE	HECTARAGE IMMATURE	HECTARAGE TOTAL	PERCENT OF TOTAL HECTARAGE	PLANNED HECTARAGE
Guantanano	2377	206	2,583	2.1	10
Santiago De Cuba	11,126	838	11,964	9.6	253
Granma	1,248	730	1,978	1.6	—
Holguin	326	633	959	.8	62
Las Tunas	64	41	105	.1	—
Sancti Spiritus	16	893	909	.7	225
Cienfuegos	1,915	3,621	5,536	4.4	13
Villa Clara	2,325	574	2,899	2.3	—
Camaguey	3,851	3,344	7,195	5.8	404
Ciego De Avila	5,959	4,059	10,018	8.0	590
La Habana	4,832	1,703	6,536	5.2	2
Pinar Del Rio	7,771	8,500	16,271	13.0	250
Isla De La Juventud	11,358	9,634	20,992	16.8	100
Cuidad De La Habana	1,164	20	1,184	1.0	—
Matanzas	26,555	9,056	35,611	28.6	823
	80,887	43,852	124,739	100.0	2732

25X1

diverted to the new processing plants for conversion to juice and other products. This logistics crunch will continue over the next couple of years as production continues to climb.

Austerity measures imposed by Western creditors have diverted Cuban investment priorities from citrus to export products for which Havana expects to be able to obtain hard currency (i.e., textiles, tobacco, leather goods and coffee). CEMA citrus delivery obligations and the need for costly Western inputs (e.g. pesticides) as well as inferior fruit quality prevent citrus from becoming a hard currency earner. This poor earnings prospect is a particular disappointment to Havana in light of the massive amount of funds already invested in the industry.

Yields. Cuban citrus yields are low when compared to other producing nations. The average yield of mature trees from 1975-83 was 5.4 tons per hectare compared to 25-30 tons per hectare in Florida. Futhermore the situation is improving only very slowly; between 1975 and 1980 yields increased from 4.86 to 5.65 tons per hectare. In 1983, 6.28 tons per hectare were produced. Several factors account for this poor performance. First, insects and diseases cause considerable fruit damage, decreasing quantity, marketability and storage life. In addition, insufficient nutrients and serious weed infestations hinder tree growth and productivity. Although yields may continue to increase in forthcoming years as better irrigation, cultivation and harvesting schedules are implemented, we believe it doubtful that yields will ever exceed 10 tons/hectare. Yields will be held to this level primarily by continued improper and inadequate applications of both fertilizers and pesticides (insecticides, fungicides and herbicides). Such agrochemicals are not currently available in sufficient quantity and Havana does not have the investment funds or technology needed to purchase or produce them.

Production. Despite the recent downturn in hectarage, Cuba's citrus production has continued an upward trend, principally because an ever increasing proportion of trees are attaining maturity, the stage when yields are highest. During the late 1960s and early 1970s, production ranged from about 120,000 to 160,000 tons. The very extensive plantings made from 1973 to 1976 (averaging over 23,000 hectares per year) began to mature in the late 1970s and production climbed to 441,000 tons in the 1979/80 growing season. Output continued to increase steadily and reached a record 632,000 tons in 1982/83. In the 1983/84 season production dropped to 600,000 tons due to the shortage of fertilizers and the outbreak of a severe drought (Figure 9). The drought has continued into the current production season, causing widespread water rationing and severely stressing citrus orchards. As a result we believe this season's crop will likely fall below the 1983/84 level.

Over 70 percent of current Cuban hectarage is now composed

25X1

Figure 9

Cuban Citrus Statistics

	Citrus Production (Tons)				Citrus Exports (tons)	Citrus Hectarage			Yield (Tons/ Hectare)
	Oranges (Tangerines)	Grapefruit	Lemons, Limes and Other Citrus	Total		Mature	Newly Planted	Total	
1957/58	* 51,000	* 7,000		* 58,000					
1958/59	* 57,000	* 7,000		* 64,000					
1959/60	* 57,000	* 7,000	* 7,000	* 71,000	* 1,600				
1960/61	* 49,000 (* 8,000)	* 7,000	* 6,000	* 70,000	* 2,000				
1961/62	* 49,000 (* 8,000)	* 7,000	* 6,000	* 70,000	* 2,000				
1962/63	64,000 (8,000)	7,000	7,000	86,000	* 2,000				
1963/64	86,000 (5,000)	9,000	9,000	109,000	* 2,000				
1964/65	83,000 (8,000)	12,000	12,000	115,000	3,000				
1965/66	118,000 (9,000)	11,000	12,000	150,000	4,100		5,000	21,400	
1966/67	110,000 (13,000)	13,000	11,000	147,000	12,800		4,000	24,000	
1967/68	120,000 (4,000)	15,000	15,000	154,000	19,100		6,000	30,200	
1968/69	108,000 (12,000)	13,000	18,000	151,000	25,700		14,200	43,200	
1969/70	122,000 (11,000)	17,000	13,000	163,000	28,300	18,500	3,900	46,200	4.80
1970/71	85,000 (8,000)	14,000	17,000	124,000	25,400		1 900	42,200	
1971/72	110,000 (11,000)	19,000	22,000	161,000	42,500		2,900	43,200	
1972/73	114,000 (10,000)	25,000	23,000	172,000	50,600		21,700	59,900	
1973/74	108,000 (12,000)	30,000	24,000	174,000	56,000		34,500	92,000	
1974/75	127,000 (10,000)	25,000	20,000	182,000	59,700	23,400	25,200	116,400	4.86
1975/76	129,000 (20,000)	34,000	25,000	208,000	61,200	26,400	11,300	122,000	5.12
1976/77	158,000 (11,000)	32,000	23,000	224,000	83,600	32,200	7,700	125,000	5.09
1977/78	184,000 (21,000)	52,000	23,000	280,000	143,500	40,000	7,000	129,500	5.30
1978/79	184,000 (22,000)	52,000	25,000	283,000	161,000	45,800	4,300	118,000	4.67
1979/80	296,000 (30,000)	83,000	32,000	441,000	192,700	63,800	6,500	121,800	5.65
1980/81	333,000 (26,000)	85,000	27,000	471,000	256,000	69,100	5,200	123,200	5.61
1981/82	360,000 (30,000)	110,000	30,000	530,000	319,500	79,500	5,200	126,100	5.59
1982/83	432,000 (35,000)	125,000	40,000	632,000	382,300	84,500	4,200	121,200	6.28
1983/84	#405,000 (#35,000)	#120,000	#40,000	600,000	#360,000				

Source: FAS estimates based on FAO, Anuario Estadistico de Cuba, and Press reports.
* USDA estimate
# CIA estimate

25X1

25X1

of mature trees whose production will not vary dramatically given current practices. Citrus trees planted in a tropical environment (e.g., Cuba or Brazil) have a productive lifetime of 30-40 years before senescence, whereas plantings in a subtropical regime such as Florida will produce for at least twice that length of time. The main reason for this difference is that in a tropical environment the trees are constantly growing; they do not undergo the physiological slowing exhibited by overwintering trees in subtropical areas. 25X1

Outlook

Havana's pressing need to allocate its scarce resources to exports that generate hard currency probably will preclude any significant increase in investment in the citrus sector over the next few years even though such action would demonstrate to Moscow that Castro intended to support his rhetorical commitments to CEMA. Indeed citrus exports earned only $4 million in hard currency last year and any future payoff resulting from new citrus plantings would not be realized until at least the late 1980's when trees planted this year began to produce fruit. Even without a major investment, Cuba's crop will continue to increase during the remainder of this decade as immature trees planted in the 1970s begin to fully produce. Yearly increases, however, will tend to become smaller and the overall growth curve will plateau as the end of the decade approaches. By 1990, given no dramatic new expansion in hectarage and a slight increase in yield per hectare, yearly production will be approximately one million tons[2]--1.5 million tons short of plans adopted in the early 1980s. Some 55 to 65 percent of this production will be available for export and the bulk (85-90 percent) should continue to be shipped to CEMA countries. 25X1

It would take a sharp improvement in Havana's hard currency picture--an unlikely development in the near term--to permit significantly greater resources to be diverted to citrus. If such unexpected flexability were to develop, Havana might initiate an effort to significantly increase citrus hectarage that could rival the intensive plantings of the early 1970's. By doubling the current citrus hectarage to approximately 250,000 hectares, for example, we estimate Cuba would be able to increase the volume of exportable fruit from recent levels of less than 400,000 tons recently to well over one million tons by the mid-1990's, assuming that yields remain at about present levels. Alternatively, by providing adequate protection from pests through a major investment in pesticides, spraying equipment, and training for personnel, Cuba probably could double or even triple

---

[2] The current severe drought over most of Cuba may reduce the 1985 and 1986 production but the long term estimate should hold. 25X1

25X1

25X1

its current citrus production and exportable surplus by the early 1990s without expanding hectarage. In either event, such a program would represent a sizeable resource commitment well beyond what we presently think Havana can afford. 25X1

Implications for the US

Assuming that CEMA will continue to import at about current levels and barring a significant investment in the citrus industry, only limited amounts of Cuban citrus will remain available for export to the West during the remainder of the decade. There is little likelihood under these circumstances that the Cubans will impinge directly on US markets for fresh citrus, but they may have an indirect effect. The Mediterranean countries of Italy, Greece, Morocco, Egypt and Turkey presently export substantial amounts of their citrus to CEMA members. Continued expansion of Cuban citrus exports to CEMA could eventually force the Mediterranean producers to divert sales to other heavy EC consumers (e.g. France, Beneleaux countries, UK), cutting into the US market in this area--presently about twelve percent of its total fresh citrus exports. 25X1

If Havana initiates a new citrus planting campaign by the end of the decade or boosts yields through better pest protection, Cuba may be able to make greater inroads into the US market by the mid-1990s. Further increases in citrus exports to CEMA would exacerbate the indirect losses to US producers resulting from the diversion of Mediterranean citrus from CEMA to Western European markets. While there is an outside chance that US producers could sustain losses in the fruit market as a result of direct competition with the Cubans, unless the quality of Cuban fresh fruit improves significantly, these losses would likely be minimal. 25X1

Of greater concern to US citrus growers would be the potential large-scale production of juice/concentrate products by Cuba that could result from a future surge in citrus output. Because Cuban citrus varieties are conducive to these types of processed output, Havana may eventually become a direct competitor with the United States in this market. Although no official statistics are currently available on processed citrus products, most of them probably would be consumed domestically and/or shipped to CEMA countries in the short run. But given the recent completion of the three new processing plants and the refurbishment of another, Cuba may well try to market a portion of its juice output by the end of the decade in Western markets to acquire even a small amount of additional hard currency. 25X1

25X1