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5. Author(s)

1. Jerry Martin  
2.  
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## **AGRICULTURAL MARKETING IMPROVEMENT STRATEGIES PROJECT**

Sponsored by the

### **U.S. Agency for International Development**

Assisting AID Missions and Developing Country Governments  
to Improve Agricultural Marketing Systems

**Prime Contractor:** Abt Associates Inc.

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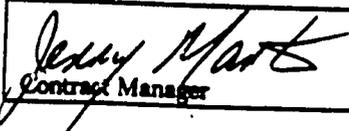
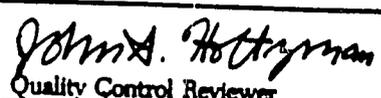
Abt Associates Inc.  
55 Wheeler Street, Cambridge, Massachusetts 02138  
Telephone • Area 617-492-7100  
TWX: 710-3201382

A Pre-Feasibility Study  
Of Malian Horticultural  
Export Crops

October 1990

Prepared by: Jerry Martin  
of Abt Associates Inc.

Prepared for: USAID/Mali

 Contract Manager	 Quality Control Reviewer	 Management Reviewer
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Agricultural Marketing Improvement Strategies Project  
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## TABLE OF CONTENTS

<b>ACKNOWLEDGEMENTS</b> . . . . .	iii
<b>INTRODUCTION</b> . . . . .	v
<b>1. THE EUROPEAN MARKET FOR MALIAN HORTICULTURAL EXPORTS</b> . . . . .	1
1.1 Growth in Horticultural Exports . . . . .	1
1.2 France . . . . .	2
1.3 The Netherlands . . . . .	2
1.4 Hungary . . . . .	4
<b>2. REGIONAL MARKETS</b> . . . . .	6
<b>3. MALIAN HORTICULTURAL EXPORTERS</b> . . . . .	9
3.1 Fruitema . . . . .	9
3.2 Private Sector Exporters . . . . .	11
3.3 Former Private Sector Fruit and Vegetable Exporters . . . . .	12
3.3.1 Causes of Failure . . . . .	12
3.3.2 Prospects for Private Sector Participation in Horticulture Exports . . . . .	13
<b>4. TRANSPORT</b> . . . . .	15
4.1 UTA . . . . .	15
4.2 Sabena . . . . .	15
4.3 Air Afrique . . . . .	15
<b>5. PRODUCTION OF HORTICULTURAL CROPS IN THE OHV ZONE</b> . . . . .	17
5.1 Kabala Cooperative . . . . .	17
5.2 Kulikoro Cooperative . . . . .	18
5.3 Baguineda Rehabilitation Project . . . . .	19
<b>6. CONCLUSIONS AND RECOMMENDATIONS</b> . . . . .	21
6.1 Potential for Horticultural Exports . . . . .	21
6.2 Constraints to Horticultural Exports . . . . .	22
6.3 Recommendations . . . . .	23
 <b>APPENDICES</b>	
A. Persons Contacted During the Study . . . . .	A-1
B. Trip Reports . . . . .	B-1
C. Scope of Work . . . . .	C-1
D. Tables . . . . .	D-1

\*Due to the proprietary nature of the information contained in the trip reports, Appendix B was only included in copies of this document sent to the Mission.

## LIST OF EXHIBITS

1.	Horticulture Exports from Mali . . . . .	3
2.	Marketing Season: Selected Horticultural Crops, Mali and Côte d'Ivoire . . . . .	8
3.	Fruitema Export Statistics . . . . .	10
4.	Exportation of Fruits and Vegetables from Mali . . . . .	16

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- Conduct diagnostic studies, using rapid appraisal methods and applied research, of marketing system organization and performance, marketing parastatal reorganization and privatization, and agribusiness opportunities in developing countries;
- Prescribe, monitor, and evaluate the impacts of agricultural marketing policy reform programs;
- Recommend pilot innovations in marketing system organization; institutional arrangements; post-harvest handling, marketing, processing and storage technology; and market information services; and
- Distill significant lessons from the experiences of USAID, other donors, developing countries, and the private sector in agricultural marketing development projects, programs, and policy reforms.

This study to determine the feasibility of undertaking a full-scale study of Malian horticultural export crops is consistent with several objectives listed above.

The study was supervised by Dennis Bilodeau of the Project Development Office of USAID/Mali. Bilodeau provided valuable guidance to the study. Charles Stathacos of Abt Associates conducted market reconnaissance for Malian fresh produce in Abidjan. Motoki Takahashi, an Abt Associates intern, prepared the tables in Appendix D. M. Moctar Traore provided valuable assistance in data collection in Mali. Paula Hirschhoff provided valuable assistance in editing the report. John Holtzman provided conceptual input to the study, based on his leadership of an AMIS study of the horticultural subsector in Senegal, and reviewed the final draft.

The study team gratefully acknowledges the cooperation of U.S. Ambassador to Mali Robert Pringle, Malaysian Ambassador to Mali Choo Siew Kioy, and representatives of the Government of Mali, Operation Haute Valle, the Mali Chambers of Commerce and Agriculture, SABENA and UTA Airlines, Continental Air Service, UNCPM, Fruitema, and Jardinma, as well as representatives of several agencies, and retailers, wholesalers, and transporters in Côte d'Ivoire. In addition, the team acknowledges with thanks the assistance provided by representatives of COLEACP in France; of the U.S. Embassy, the Ministry of Agriculture, and MONIPEX in Hungary; and of export/import agencies in France, Hungary, and Holland. Their candid and lively responses to our many questions

provided the basis for our findings and recommendations (see Appendix A for listing).

## INTRODUCTION

This report was funded through a buy-in to the Agricultural Marketing Improvement Strategies Project (AMIS) by USAID/Mali and the Haute Valle Project. AMIS is a centrally funded USAID-ST/RD project that works to improve the efficiency of agricultural marketing systems through the following approaches:

- Diagnosing marketing system constraints;
- Formulating improved policies, institutional arrangements, and management systems to upgrade the performance of agricultural marketing systems; and
- Designing, monitoring, and evaluating pilot innovations in technology, institutional arrangements, and management systems.

The purpose of the buy-in was to conduct a pre-feasibility study to determine whether a full-scale study of Malian horticultural export crops was warranted. The pre-feasibility study considered export potential (regional and European) for fruits and vegetables grown in the OHV (Operation Haute Valle) project zone. The crops examined included mangoes, French green beans, citrus crops, bobby beans, cherry tomatoes, chili peppers, and okra.

The objective was to identify the crops currently being exported; examine the principal constraints encountered by importers, exporters and producers of these crops; and assess whether demand, transport, and supply conditions indicate that an in-depth marketing study of one or more crops is needed.

The study, conducted over a period of three weeks in late July and early August 1990, consisted of the following phases:

- Informal interviews with selected importers in Western and Eastern Europe (France, the Netherlands, and Hungary) and officials from COLEACP (Comité de Liaison Europe-Afrique-Caribes-Pacifique pour la Promotion des Fruits Tropicaux et des Légumes de Contre Saison).
- Informal interviews with the principal Malian horticultural export firms, OHV cooperatives, and project officials, members of the Malian Chambers of Commerce and Agriculture, Government of Mali officials, and several export firms which had ceased to export horticultural products.
- Informal interviews with officials responsible for air cargo for Air Afrique, Sabena, and UTA airlines.
- Selective site visits to mango and vegetable producing areas in the OHV project zone.
- Review of the literature and analysis of secondary data.

Given the purpose of the study, the findings were qualitative and not exhaustive. In some cases data were unavailable or time did not permit more extensive data collection. The report notes these instances and addresses the impact on the comprehensiveness and reliability of the findings. The report contains four appendices: Appendix A is a list of individuals contacted during the study; Appendix B provides detailed trip reports on the visits to importers in Eastern and Western Europe; Appendix C contains the scope of work for a possible second phase study; and Appendix D contains tables showing the price fluctuations of commodities in selected markets of Côte d'Ivoire in 1989.

## 1. THE EUROPEAN MARKET FOR MALIAN HORTICULTURAL EXPORTS

This section examines recent trends in worldwide and European demand for horticultural products, including changing consumption patterns. It also identifies several fruits and vegetables that developing countries have successfully exported to European, Asian, and American markets. The report concludes with findings from a series of interviews with French, Dutch, and Hungarian importers and their views on Malian exports.

### 1.1 Growth in Horticultural Exports

A recent report from the International Food Policy Research Institute (IFPRI) notes that although the developing countries' share of world agricultural exports declined from 41 percent to 33 percent between 1963 and 1985, their share of world horticultural exports increased from 38 percent to 42 percent for fruits and from 24 percent to 28 percent for vegetables over the same period.<sup>1</sup> The study finds that the prospects for expanding exports of fruits and vegetables are promising, especially for developing countries with abundant labor because of their comparative advantage in horticultural products, which are generally labor-intensive. The demand for horticultural crops in developed countries is expected to increase slowly and steadily over the next decade. However, the opening of markets in Eastern Europe and the U.S.S.R., where per capita fruit and vegetable consumption is low (consumption of oranges and bananas is less than 14 percent of that of developed market economies), could substantially improve the horticultural trade outlook for developing countries.

European consumption of fruits and vegetables has changed substantially in the past decade. The current emphasis on health foods and the premium placed on freshness has contributed to the rise in demand for tropical fruits and vegetables. For example, mango imports for 10 European countries surveyed in a 1987 International Trade Center Report<sup>2</sup> rose 130 percent between 1982 and 1986. In France mango imports more than doubled from 2,900 tons to 6,171 tons in this period. In the Federal Republic of Germany, mango imports almost doubled between 1985 and 1986, mainly because of promotional campaigns undertaken in the major consuming areas. The market for beans, particularly bobby beans, also grew at an impressive rate in the 1980s. Bobby bean imports by Belgium and the Netherlands more than doubled to 16,616 and 26,363 tons respectively from 1982 to 1986. Markets for other fruits and vegetables such as pineapple, melon, and aubergine (eggplant) grew at similar rates throughout Western Europe.

This growing market for horticultural crops is highly competitive; over 30 developing countries are currently involved in the trade. The organization of an effective system of packaging, processing, storing, transporting, and distributing is crucial to success in this market. Since these costs account for about 70 percent of the final consumer price, comparative advantage often depends

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<sup>1</sup>IFPRI, Horticultural Exports of Developing Countries: Past Performances, Future Prospects, and Policy Issues. Research Report #80, April 1990.

<sup>2</sup>ITC, Tropical and Off-Season Fruits and Vegetables Study: 1987.

more on the efficiency of these services than on the actual cost of cultivation. An effective marketing system ensures high quality and a reliable supply, a point underscored by the comments of European importers presented in the following sections of this chapter.

## 1.2 France

France is the major importer of Malian horticultural commodities. Over the 1985-89 period, Malian mango exports to France averaged 659 tons with a range of from 395 tons in 1987 to 905 tons in 1989. (See Exhibit 1 for summary of Malian exports to Europe between 1985 and 1989.) French green bean exports over the same period averaged 245 tons but with wide swings from only 76 tons in 1987 to 433 tons in 1989. Chili pepper exports have declined from 61 tons in 1985 to only 5 tons in 1989.

The French horticultural market has very high quality standards and strong competition. French importers have had mixed experiences (see Annex B for details) with Malian exports. Their principal complaint is the exporters' failure to adhere to quality requirements, especially for French green beans. Second, wide fluctuations in supply from year to year have made French importers leery of counting on Malian French green bean availability. Malian mangoes are very well regarded and their quality seems to be quite good. However, the French consumer prefers a mango which has a reddish or golden skin when ripe. The Malian Amelie variety is green when ripe. As a result, Malian mangoes do not receive a premium price on the French market despite their high quality. This problem is exacerbated because the Malian mango season of April to July coincides with the mango season in Mexico, where the Kent, Kett, and Hayden varieties grow.

French importers believe that if Mali were to increase its export of American variety mangoes, it would be more competitive in the French market. COLEACP officials stated that although they have made this suggestion to Malian exporters in the past, they have noted no change in the composition of mango exports. In 1989 Fruitema exported 1,054 tons of mangoes of which only 86 tons were Kent or Kett varieties. Meanwhile, COLEACP reports that Burkina Faso has made a concerted effort to diversify its mango exports.

French importers see steady growth in the horticultural market and are interested in Malian produce. The principal crops are mangoes, French green beans, and chili peppers. Importers were not enthusiastic about cherry tomatoes and other less known crops. Problems of quality, timing of deliveries, and adequate supply have made the French importers very cautious.

## 1.3 The Netherlands

Dutch importers' attitudes about Malian exports vary widely. Some are strong advocates of Malian produce while others have abandoned the effort to procure supplies from Mali (see Annex B for details). On one point, however, all these importers agree: The Malian Amelie mango is the best tasting mango in the world. The Dutch, Germans, and Belgians do not prefer red and gold mangoes like the French do. Promotion campaigns sponsored by COLEACP and individual importers that have touted the Amelie mango have been successful. Despite this favorable

EXHIBIT 1

Horticulture Exports from Mali  
1985-1989 (in tons)

Country Product	France	The Netherlands	Germany	Belgium/Lux.
<u>Mangoes</u>				
1985	596	617	61	116
1986	646	623	10	55
1987	395	321	-	-
1988	753	269	1	157
1989	905	343	37 (Jan. to Sept. 1989)	143
<u>French Green Beans</u>				
1985	273	70	-	12
1986	351	55	1	33
1987	76	-	-	2
1988	94	-	-	2
1989	433	22	4 (Jan. to Sept. 1989)	4
<u>Chili Peppers</u>				
1985	61	6	-	3
1986	42	10	-	1
1987	13	1	-	-
1988	3	-	-	-
1989	5	3	1.5 (Jan. to Sept. 1989)	-

Source: COLEACP

consumer attitude, Malian mango exports to the Netherlands have fallen from 617 tons in 1985 to 343 tons in 1989. French green bean exports have been negligible with a high of 70 tons in 1985, dropping to zero in 1987 and 1988.

Dutch importers who worked with Fruitema were very pleased with the relationship, citing Fruitema's excellent packing of mangoes and attention to quality and standard sizes, which counts for a lot in the market. Another importer that had just started a small effort to import Malian mangoes was pleased with the experience but said that communications were sometimes a problem. Reliable communications are critical in a market that changes so rapidly, but the firm was sometimes unable to convey information to its Malian supplier in a timely manner. Representatives of the firm appreciated the fact that the Malian exporter had visited them, and they were looking forward to helping him improve his packing and labelling methods.

The third importer complained vigorously about the unreliability of its Malian exporter. Apparently nothing went right in this case. The supplies were less than had been requested and quality was poor. On other occasions the exporter sent large quantities of high quality mangoes when the market was saturated. In one instance, the Dutch firm chartered a plane to Mali as part of a promotional campaign. However, the exporter was unable to deliver the agreed upon quantity. Each of these cases resulted in losses and led to a dispute over payments at the end of the season.

Though French green beans and bobby beans are seldom distinguished in the statistics, the Dutch, Belgians, and Germans differentiate between the two. Each of the Dutch importers expressed strong interest in importing more fresh bobby beans. Egypt dominates the bobby bean market from September to January, but February and March represent an important window of opportunity in bobby beans for Mali. One firm estimated that the market could absorb between 20 and 30 tons a day. At this point, however, Mali has not responded to this opportunity.

Dutch importers have little interest in other products from Mali. They cite problems with uniformity of color and size with cherry tomatoes. If these problems could be solved, Mali could respond to a few peaks in demand around Christmas and Easter. Dutch importers echoed French comments about reliability of supply and adherence to quality standards. One importer familiar with Mali suggested that the only way non-Fruitema exports could be increased would be through a joint venture that tightened the ties among producers, exporters, and importers. Otherwise, small exporters lack the means (telex) and sophistication (in packing methods and quality control) to operate in this business.

#### 1.4 Hungary

A review of the Hungarian market was based on two hypotheses: 1) Eastern Europe is likely to be the greatest area of growth in horticultural imports as pent-up demand is released over the next 5 to 10 years; and 2) Quality standards are likely to be lower in Eastern Europe and thus easier for countries like Mali to meet. While both hypotheses appear to reflect reality (see Annex B for details), the implications for Mali are far from clear.

Until this year MONIMPEX, a wholly state-owned enterprise, handled all fruit and vegetable imports. Now anyone is free to import and export fruits and vegetables. Inconvertibility of currency is a serious handicap which most experts believe will not be resolved until 1992. In the meantime, firms which export can use 30% of their foreign exchange earnings for import purchases.

Oranges, lemons, grapefruit, and bananas make up 95 percent of Hungarian fruit imports. The quantity of vegetable imports is very low. One firm mentioned that it was importing some kiwifruit (this was corroborated by the Dutch firm that ships kiwifruit from New Zealand to Hungary). Consumers have very little experience with tropical fruits and are not accustomed to quality differentiation. MONIMPEX said that its policy was to buy one quality of fruit at one price for the entire country.

For the time being the Hungarian (and by implication Eastern European) market does not offer good opportunities to Malian exporters. In the short-term, Hungary will likely expand imports of established, know fruits (oranges, lemons, grapefruit and bananas) before diversifying into exotics. Depending on their success in converting to a market driven economy, it is quite conceivable that products such as mangoes will begin to find a market in the next five years. If Mali were to establish solid trading relationships with some of the Dutch firms which are just beginning to explore opportunities in the East, then prospects could be bright.

## 2. REGIONAL MARKETS

None of the exporters, cooperatives, or Malian Government officials contacted in the course of this study knew of any organized efforts to export horticultural produce to neighboring countries. Certainly, there are no systematic regional export activities. Anecdotal evidence indicates that okra (gumbo) is very much in demand in Senegal and that some women traders carry it to Senegal on the train. However, information on the quantity leaving the country in this fashion was unavailable. Likewise, Côte d'Ivoire is reportedly a potential market for Malian mangoes.

Given the high perishability of the crops in question and the difficult overland transport conditions, most regional trade probably occurs in border areas with Guinea, Côte d'Ivoire, and Burkina Faso. Determining the magnitude of this trade is beyond the scope of this study. However, the absence of large-scale, Bamako-based traders engaged in regional horticultural trade suggests that limited demand and/or transport problems severely constrain this market.

Côte d'Ivoire is the most promising potential regional market because demand and transport are probably more favorable than with Mali's other neighbors. There is evidence that mangoes are exported to Côte d'Ivoire from Burkina Faso and Cameroon.

Information received from the Ministry of Agriculture and Commerce revealed that there is very little recorded trade from Mali to Ivory Coast, and that most horticulture imports come through the informal sector. Côte d'Ivoire is largely self-sufficient in fruits and vegetables.

The country produces two groups of mango varieties, Americaine and Antillaise. The Antillaise varieties, Amelie, Julie, and Gouverneur, account for 60-70 percent of Côte d'Ivoire production. The balance of production is in the Americaine varieties, which are Kent, Keitt, Valencice, Palmer, Smith, Zill, and Brooks. Mango imports become significant when local production declines.

Mango imports from Mali include Kent, Keitt, and Brooks varieties which begin to arrive in June and taper off in September. Malian mangos shipped in rough cardboard cartons weighing 60-70 kg and selling for 6,000-8,000 fcfa per carton were observed in Abidjan's Adjamé market in August 1990. Importers reported that approximately 100 mt per week were arriving from Mali and Burkina Faso, although total volume was unknown.

Limes imported from Mali arrive between September and November. Their quality is very good. Limes are produced locally in the Katiola, Korhogo, and Sassandra regions. Imported limes tend to be significant only during periods when local production declines.

The two kinds of onions in demand in Côte d'Ivoire are large onions and shallots. Large onions are not produced locally but are shipped from the Netherlands and Niger in plastic mesh bags. Niger onions are highly regarded. There was no evidence of imports of large onions from Mali. Shallots are produced in Côte d'Ivoire from mid-March through July.

Côte d'Ivoire imports potatoes from France, Mali, Morocco, and the Netherlands. Malian potatoes, which are large and of good quality, are found in the market in Abidjan between February and April. One importer reported that approximately one 30-ton shipment per week arrives from Mali and that wholesalers purchase one to three tons for resale to retailers at 150 fcfa per kilo.

No information was received on garlic and no imports were recorded for fresh tomatoes, okra, and chili peppers, all of which are produced locally (in the regions of Kotobi, Man, and Korhogo) in sufficient quantities to satisfy local demand. However, during periods of slack production, dried okra and peppers are imported from Mali.

A reddish-purple mango variety known as Camerounais, averaging between 1 and 1.5 kilos each, is being sold retail at 300 CFA/kg in Abidjan. Some mangoes called Arrete are yellow-green and smaller than the Camerounais. These reportedly come from Burkina Faso and probably are the Amelie variety grown in Mali. (Exhibit 2 illustrates seasons for selected horticulture crops in Mali and Côte d'Ivoire and shows possible windows of opportunity for Malian exports.)

A number of other countries have been suggested as regional markets for Malian horticultural produce, especially mangoes. Possibilities are Gabon, Nigeria, Morocco, and Saudi Arabia (if Saudi Arabia can be considered a regional market). Except for Saudi Arabia where Fruitema has periodically shipped small quantities of mangoes, there is no evidence of exports to these other countries. At this point, the possibility of exporting to these countries is purely speculative. Costly, indirect transport and poor communications between these countries and Mali are likely to be serious constraints.

One other purely speculative idea concerns South Africa. With the changing political environment in that country, it is conceivable that intra-African trade with RSA will become acceptable and desirable. Malian mangoes are not a counter-seasonal product in the European market. However, April through July are winter months in RSA, the peak period of Malian mango production. Thus, the possibility of exporting Malian mangoes to RSA during that season may warrant closer examination in the future.



### 3. MALIAN HORTICULTURAL EXPORTERS

Malian horticultural exports are concentrated in the hands of a very small number of exporters, particularly Fruitema, a mixed state and private sector enterprise. The rest of the export trade is conducted by small, private independent traders for whom the horticultural trade is a secondary or tertiary activity. As recently as 1985, some 14 private traders were actively exporting mangoes and six traders were exporting green beans to the European market. Their disappearance from the commercial scene is discussed below.

#### 3.1 Fruitema

As noted above, Fruitema is a mixed enterprise with the Malian Government holding a minority share in the company. The remaining shares are held by French and Malian investors. The director general is a French national and his deputy is Malian. The firm employs approximately 40 full-time employees and hundreds of seasonal laborers during the export season (February-July).

Fruitema estimates that it accounts for 85-90 percent of horticultural exports. The figures for 1990 indicate that Fruitema exported over 1,400 tons of fruits and vegetables, of which 1,200 tons were mangoes. Exhibit 3 shows that the volume of exports in 1990 was 10 percent above the 1989 volume and that the mix of commodities exported had several significant shifts. For example, between 1989 and 1990, cherry tomato exports jumped by a factor of five; French green bean exports dropped by half; and bobby bean exports doubled. In 1990 Fruitema exported its products to France, Belgium, the Netherlands, Germany, and England.

In the case of vegetables such as beans, peppers, and tomatoes, Fruitema enters into contract farming arrangements with cooperatives and village associations in the OHV zone. As part of this arrangement, Fruitema supplies seeds and fertilizer to the growers. Through their field staff, Fruitema manages the entire production process, from instructions on planting times to weeding and cultivating to harvesting. Each step is critical to ensure that the produce meets the quality standards of European buyers, at the correct time and in the desired quantity. Some of Fruitema's extension work is supplemented by OHV zone staff, while the responsibility for quality control rests with Fruitema.

Fruitema's approach underscores the need to closely control and supervise French green bean, bobby bean, and cherry tomato production. Harvesting is especially important since even a one-day delay can affect the classification of extra fine French green bean.

The mango and the vegetable marketing systems differ markedly. Fruitema sets up buying stations in the countryside where individuals deliver their mangoes. Fruitema provides the sorting and classification system for the mangoes. It also exercises strict quality control regarding discoloration, bruises, and other cosmetic flaws.

EXHIBIT 3

Fruitema Export Statistics

Product	Harvest Season 1988/1989 (in tons)	Harvest Season 1989/1990 (in tons)
Mangoes	1,054.154	1,235.158
Amelie	967.094	
Kent	36.054	
Kett	50.926	
Zill	0.080	
French Green Beans	155.608	75.636
Bobby Beans	36.638	76.899
Dried Chili Peppers	6.587	11.877
Antillaise Chili Peppers	-	3.617
Cherry Tomatoes	2.814	10.317
Tahitan Limes	2.332	5.374
Mexican limes	2.838	-
Total	1,260.971	1,418.878

Fruitema is a large operation by Malian standards. In addition to its extensive full-time staff, it has invested heavily in facilities and infrastructure. The firm operates a 100-ton capacity cold storage facility at the airport, which until 1989 was the only one available. It also has a mechanical mango cleaning, sorting, and grading line imported from a French manufacturer. Fruitema owns forklifts and trucks to quickly move pallets of produce from storage to airplanes and has the resources to import high quality packing material from Senegal. In sum, it is an integrated operation that is actively involved in each step from production to handling and transport of horticultural products.

### 3.2 Private Sector Exporters

At present only two private sector traders export fruits and vegetables from Mali. While several other firms have attempted to export horticultural products on a limited basis, they have met with little success. Even the two firms which are actually exporting consider their export operations to be merely secondary activities and experimental to some degree.

One example of a successful exporter is a Malian trader who began exporting in 1990 and remains enthusiastic about opportunities in the European market. He had become an exporter by default. In 1986 he saw the need for additional cold storage capacity and submitted a proposal for African Development Bank financing. By the time the facility was completed, however, he found that other traders were no longer exporting fruits and vegetables. To defray the costs of the cold store he began exporting himself. He succeeded in exporting 80 tons of French green beans and 200 tons of mangoes in 1990. He plans to double his exports in 1991.

The trader emphasized the following elements as critical for any private horticultural exporter:

- Adequate financing. Since this individual was a well-established businessman, he had no difficulty obtaining a 20,000,000 CFA loan from a commercial bank. Since the trader must finance the purchase of all inputs and the crops, a significant amount of credit must be available to meet working capital requirements.
- A strong and trusting relationship with an agent or importer in Europe. Since success often depends on hitting the market at the right time, it is very important to have confidence in an agent's advice. In addition, it is necessary to have a trusted representative there to verify the quality of produce when it arrives in Europe.
- Up-to-date knowledge of the market and efficient business management practices. The windows of opportunity for Malian products on the European market are very specific. Planting decisions must be based on knowledge of these windows. It is also critical to have telex and telephone links to the importers to monitor daily changes in the market. Finally, the trader must be able to react to market opportunities and mobilize producers and transporters on short notice.

- A solid relationship with producers, especially for French green beans and bobby beans. Success hinges on having access to a high quality product and good planning. This element cannot be left to chance. This particular trader had entered into an agreement with a women's cooperative to provide inputs and with an agronomist to oversee production and harvesting practices.

Private exporters account for a very small share of the horticultural export trade in Mali with Fruitema's share of the market estimated at 90 percent. The following section detailing the experience of former private exporters helps explain the current dearth of private traders.

### 3.3 Former Private Sector Fruit and Vegetable Exporters

Mali's horticultural export history can be divided into two eras. The current era, which began around 1986, is characterized by Fruitema's dominance of the market. During the previous era from 1978 to 1985, many private traders were actively competing with Fruitema for both the mango and the vegetable export market. Their failure provides valuable insights into the constraints faced by those attempting to enter the horticultural export trade in the 1990s.

It is important to understand the scope of the private trade in horticultural exports before describing the reasons for its demise. One firm, Jardinma, regularly exported 300 to 400 tons of French green beans each year. Another firm, Comptoir Nord-Sud, exported an average of 40 tons of French green beans a year. By comparison, Fruitema exported 191 tons in 1989 and 151 tons in 1990. Though no precise figures are available, it is clear that private traders at one time represented a significant share of the market in this period. The failure of the private trade to grow and prosper is one reason why Malian horticultural exports fell from 1,815 tons in 1985 to 1,279 tons in 1988 and have remained at this level.

#### 3.3.1 Causes of Failure

Former traders interviewed for this study cited the following constraints which led them to abandon their involvement in horticultural exports.

Lack of Reliable and Sufficient Air Transport. During the period 1980-85 exporters had to rely exclusively on UTA. The National Office of Transport (ONT) held weekly meetings with exporters and UTA to assign cargo space. Fruitema was guaranteed 50 to 60 percent of the space, while the remaining 40 percent was divided among as many as 14 mango exporters and 6 green bean exporters.

Insufficient Cold Storage Space. Fruitema refused to rent excess space at its airport cold storage facility to private traders who as a result had to rent space at the Bamako slaughterhouse, 15 kilometers from the airport, which meant that produce had to be delivered in three-ton trucks well in advance of the scheduled departure of the plane. When scheduled departures were delayed, the produce deteriorated before being loaded.

Problems with European Importers. All the firms cited cases of payments that were 40 to 70 percent below expectations. Since horticultural products are

sold on consignment, it was impossible for the Malian exporters to know whether they were being treated fairly. Final sale prices for the shipments were often discounted for quality deficiencies.

Note: Attempts to arrange for a Malian representative to look after their interests at the Rungis market were unsuccessful, though Fruitema was able to afford one for itself. COLEACP offered an office for such a representative but was unable to pay the salary. Delays in payment were also a major problem. In a couple of instances Malian exporters ended up working with financially insecure importers who went bankrupt.

Unavailability of Packing Material. During this period SOME PAC was the only producer of packing material that met minimum export requirements. SOME PAC required payment in advance and produced only on order. Since all exports are concentrated in a short period of time, SOME PAC often was unable to meet all the orders that traders placed. As a result, SOME PAC divided its production among the exporters, which meant that traders were unable to deliver promised quantities. Exporters eventually switched to more expensive packing material from France and Senegal.

Difficulties with Quality and Production. Exporters found that controlling production techniques was difficult. Producers equated price with quantity or weight as opposed to quality. This is a serious problem with beans since one or two days of growth can turn an extra fine green bean which sells for 120CFA/kg into a fine green bean at 80CFA/kg. In some cases exporters provided extension advice to producers along with the required inputs. For some this became a very demanding and expensive aspect of the business.

Unconducive Government and Business Environment. The 8 percent government tax on exports was cited as a serious problem. The fact that Fruitema has always been exempt from this tax has made it that much more burdensome for the private exporters. Some traders also mentioned inefficient customs procedures which sometimes delayed shipments and increased costs. The lack of solidarity among the exporters magnified the problems. They were unable to organize themselves to petition for removal of the export tax or to gain a greater share of the air freight capacity.

### 3.3.2 Prospects for Private Sector Participation in Horticulture Exports

These former horticultural exporters are divided regarding the future of Malian exports. Some flatly state that regardless of changes, they will never again get involved in fruit and vegetable exports. Others note that several conditions cited above no longer apply. They made the following suggestions for actions that the Government and/or the traders themselves could take:

- Have a Malian representative at the Rungis market in France to protect their interests. Most felt that the Government should finance the salary.
- Change the payment system from consignment to purchase at the Bamako airport to prevent importers from cheating on the basis of alleged quality problems.

- Establish an organization of exporters to replace the currently moribund Exporters Association.
- Make financing available so that exporters can buy inputs and survive short-term delays in payment.

## 4. TRANSPORT

Three airlines providing direct European connections currently serve Mali: UTA and Air Afrique (both with Paris destinations) and Sabena. Each provides air freight space on its aircraft for Malian horticultural shipments. Exporters complain of the high and rising cost of air freight, which is presently 225CFA/kg. Nevertheless, the rate is lower than for exports from Kenya: 300CFA/kg during slack periods and 315 CFA/kg during the peak season (COLEACP Bulletin, December 1989). These rates are equal to those charged to Senegal and Burkina Faso, Mali's principal competitors.

### 4.1 UTA

UTA has three scheduled flights a week from Bamako to Paris on Airbus passenger planes. The air freight capacity for Malian horticultural shipments is 5 to 7 tons per plane or 15 to 21 tons per week. In addition, once a week a UTA 747 air cargo flight stops in Bamako on its way to Paris. This flight has approximately 40 tons of space reserved for Mali. As Exhibit 4 indicates, during the past five years (1986-90), UTA has shipped over 7,000 tons of horticultural exports from Mali, of which over 6,200 tons was mangoes.

### 4.2 Sabena

Sabena has three flights a week from Bamako to Brussels. In 1988 it shipped 50 tons of fruits and vegetables from Mali. In 1989 the total rose to 136 tons.

### 4.3 Air Afrique

Despite repeated attempts over a two-week period, I was unable to meet with representatives of Air Afrique's cargo department. As a result, no figures are included on quantities of Malian horticultural crops shipped by Air Afrique. It should be noted, however, that Air Afrique operates three flights a week from Bamako to Paris.

At current levels, that is, approximately 1,400 tons per year, air freight capacity does not appear to be a serious constraint. The problem is more likely to be proper planning and management of air shipment than actual space availability.

If USAID/Mali chooses to conduct a more in-depth examination of horticultural export potential, then much greater attention should be paid to exact costs and cargo capacities for each of the airlines serving Mali and Europe.

**EXHIBIT 4**

**Exportation of Fruits and Vegetables from Mali on UTA Flights, 1986-90**

(in metric tons)

	1986	1987	1988	1989	1990
Mangoes	1644	797	1375	1258	1149
French Green Beans	282	86	74	312	*96
Chili Peppers	101	-	10	8	3
Cherry Tomatoes	-	-	2	11	1.6
Other Commodities	78	82	40	100	**54.7
<b>TOTAL</b>	<b>2105</b>	<b>965</b>	<b>1501</b>	<b>1689</b>	<b>1304.3</b>

\* For the months of January through March 1990

\*\* For the first six months of the year

NOTE: Data are not included for Air Afrique or Sabena flights.

## 5. PRODUCTION OF HORTICULTURAL CROPS IN THE OHV ZONE

Horticultural crop production in the OHV Zone is centered in irrigated and non-irrigated areas close to the Niger River. The non-irrigated areas benefit from a high water table which enables producers to use well water even during the height of the dry season. In some cases farmers use solar-powered pumps to draw water for cultivation. The principal crops grown in the riverine areas are tomatoes, French green beans, bobby beans, chili peppers, okra, onions, potatoes, cucumbers, and melons. The French green beans, bobby beans, and cherry tomatoes are exclusively for export, while the other crops are principally for the local market. There are no reliable production statistics for these crops. Since there is almost no local market for French green beans and bobby beans, production can be estimated by taking export figures as a proxy.

Mangoes constitute a totally different production system for several reasons. Mango trees are not limited to riverine areas, and mangoes are sold for export as well as for local consumption. The mango supply always exceeds local and export demand, resulting in large gluts each year. It is estimated that over 95 percent of all mangoes in Mali are Amelie, although there are other varieties include Kent and Katie. Finally, since mangoes are a tree crop, no annual investment in seeds and fertilizer is required and relatively little needs to be spent on maintenance. Current estimates place annual Malian mango production at 20,000 to 25,000 tons, of which a little over 1,000 tons is exported.

Sources familiar with the climatic and agronomic conditions in the OHV Zone are unanimous in their assessment of the high potential for vegetable production there. Adequate water (assuming pump and irrigation system maintenance), good soils and competent farmers are cited as the basis for this assessment. The successful introduction of green bell peppers for export in the early 1980s along with the thriving vegetable production for the local market support are evidence of the area's agronomic potential. However, producers face a number of problems in cultivating and marketing export crops such as French green beans and bobby beans. These are described below.

### 5.1 Kabala Cooperative

The Kabala Cooperative is situated approximately 15 kilometers from Bamako and 20 kilometers from the airport, close to the Niger River. The cooperative, which is about 10 years old, has approximately 50 members. It produced French green beans for export in 1989 for a trader who could no longer be identified. The cooperative did not grow a crop in 1990 because of problems with prices and payment in 1989.

The cooperative members entered into an agreement to be paid 100CFA/kg for their French green beans. The trader provided the seeds, fertilizer, and insecticides free of charge. In addition, the trader provided periodic advice on production practices. The cooperative set aside 1 ha of its land, which was divided among the members. The area was watered by a solar pump belonging to the cooperative. However, the cooperative did not act as an agent for its members and there was no contract between the trader and the cooperative. The

cooperative members remain enthusiastic about production for export despite the following problems:

- They felt the trader cheated them because he rejected a large quantity of beans but still hauled them away. In addition, they learned later that extra fine green beans were being sold for 225cfa/kg when they were selling undifferentiated beans at 100cfa/kg in Bamako.
- The members said that they had a very difficult time getting paid. Although they had received receipts when their beans were picked up, they had to try 12 times before they succeeded in getting paid--two months after the season ended.
- They do not understand the quality standards which the trader required. They were particularly upset that so many of their beans were rejected.
- The cooperative has little or no information on prices for French green beans, and members say that they should get paid more. They have no idea how much seeds and other inputs cost nor any record of how much they produced and sold.
- They have received no marketing advice. Although they have contacted two national cooperative groups, CAC and UNCPM, for assistance in continuing to produce for the export market, nothing concrete has come from these efforts.
- The next time they agree to grow green beans the cooperative would like the price, quantity, and quality levels set in advance. They are not sure whether they should sell their beans by quality standards (i.e. fine and extra fine) or in bulk.

The cooperative members are very interested in producing French green beans again. They would also be willing to try other crops such as chili peppers if they have a contract. However, for the moment the cooperative is not actively pursuing an agreement for next year.

## 5.2 Kulikoro Cooperative

The Kulikoro cooperative, founded in 1960, is situated 60 km north of Bamako and 70 km from the airport, near the Niger River. The cooperative used to produce French green beans for export but stopped in 1988 because it could not agree with Fruitema on prices. However, the cooperative continues to be very active in mango exports with Fruitema. The members made the following points:

- They want to participate with Fruitema in determining the price it will pay for fine and extra fine French green beans. Currently they have no idea how prices are determined and they suspect that they are being cheated. They failed to reach agreement with Fruitema because the cooperative insisted on 210 CFA/kg for extra fine and

190 CFA/kg for fine, while Fruitema offered 170 CFA/kg and 130 CFA/kg respectively.

- In past agreements with Fruitema, the costs of seeds and other inputs were subtracted from the final payment. The cooperative would like to know how prices of these inputs are determined and whether they are fair. Members have also tried to engage Fruitema in discussing the costs of producing green beans, but Fruitema has always refused. The members feel that the price they receive for beans should be based on a certain margin above the base cost of production.
- The cooperative is especially interested in mangoes because it produces large quantities of the fruit. However, members are very concerned because as the only buyer, Fruitema dictates the price, which has been dropping each year. They are particularly upset because Fruitema's original price of 80 CFA/kg at the start of the 1990 season dropped to 40 CFA/kg by year end. Fruitema has an effective monopoly and the cooperative feels powerless.
- The cooperative has tried unsuccessfully to find alternative buyers. They have contacted UNCPM, which has unsuccessfully attempted to put them in touch with other traders. The cooperative has also attempted to sell its excess mangoes in Gao and Kayes but lacks a means of transport.

The Kulikoro cooperative appears to have a good deal of experience in both mango and French green bean export activities. They claim to have been very active in the early and mid-1980s when they had several clients in addition to Fruitema. The members believe that the key to future success lies in having viable competitors to challenge Fruitema.

### 5.3 Baguineda Rehabilitation Project

The Baguineda Rehabilitation Project covers an area of 23,000 ha approximately 35 km from Bamako. The project area was the site of a major Malaysian Government research project on vegetable production, which has been turned over to the Malian Government. Baguineda is the largest source of fresh vegetables for the Bamako market. Among the important crops are tomatoes, French green beans, bobby beans, potatoes, cucumbers, melons, and onions.

Project representatives stated that export marketing of Baguineda crops involves numerous problems. Specifically, they pointed to "unfair" prices paid by the one or two private traders who have tried to purchase crops in Baguineda. These low prices fail to consider the increasing costs of inputs. They suggest that project extension agents should act as arbitrators between traders and producers. By employing a base cost of production figure to determine the price, extension agents could ensure that producers would receive a price that provided a fair profit. Project officials complained about a new trader who did not agree to engage in this method of price determination.

One purpose of the Malaysian project was to introduce better and more cost effective vegetable farming practices. According to sources close to the project, extension of these techniques has been disappointing. If Baguineda producers could significantly reduce their costs of production as the Malaysian project indicates, new export opportunities could open up.

Project staff are interested in following up on an Italian study of agro-industrial production potential in the area, especially sugar and tomato processing facilities. However, the staff were uncertain whether the study indicated that either of these efforts could be profitable.

Though Baguineda is a major horticultural production area, it appears to lack organized planning to stimulate export marketing. The entire initiative seems to be in the hands of Fruitema or the one or two small private traders who have recently attempted to export. It may well be that the Bamako market, which has less rigorous standards in terms of quality and is therefore less demanding in cultivation practices, is sufficiently attractive to dampen any incentive to produce for export. Another possibility is that links between producers and exporters are so weak that producers see production for the export market as extremely risky.

## 6. CONCLUSIONS AND RECOMMENDATIONS

Horticultural export marketing requires complex and sophisticated systems that are difficult to manage profitably. To be successful in the production and export of horticultural products, close attention to detail is very important. Seed selection, planting schedules, application of inputs, and cultivation practices have to be more carefully planned than they are for typical staple crops. Harvesting and postharvest practices are critical to product quality. Grading and packing requirements are high, and coordination with shipping services before the product leaves the country must be efficient. Finally, produce must be transported to the terminal market and sold as soon as possible to retailers or supermarkets within approximately 48 hours of leaving Mali. It is in this context that the following conclusions and recommendations are presented.

### 6.1 Potential for Horticultural Exports

- European consumption of mangoes has tripled since 1982. Malian mangoes have an excellent reputation for taste and quality. The Amelie variety is particularly appreciated in the Netherlands, Belgium, and Germany, which are good markets for Mali to target.
- The French prefer a reddish-orange mango to the Amelie variety. The possibility of increasing mango exports to France is weak unless Mali can adapt to this market characteristic.
- Bobby beans are the preferred green bean in the Netherlands and Germany. Mali has a window of opportunity in those areas between February and early April.
- French green beans are consumed mainly by the French. The market is highly competitive, with Kenya, Senegal, and Burkina Faso being the major exporters. Quality reigns supreme in this market. If Mali cannot meet rigid quality standards, then its future in this market is very doubtful.
- Chili peppers are consumed by foreigners (mostly Africans) living in France and the Netherlands. This is a limited but attractive market. In 1986 Mali exported over 100 tons, while in 1989 it exported only 5 tons.
- Of the other crops listed in the scope of work, only cherry tomatoes have potential for Malian exporters at this time. Limes have been exported but in very small quantities. Melons face severe competition from Mediterranean countries.

Malian mangoes, French green beans, bobby beans, and chili peppers are in demand at specific times in specific European markets.

## 6.2 Constraints to Horticultural Exports

- The principal constraint facing Malian horticultural exports is the pervasive lack of trust among marketing system participants at all stages of the chain.
- At the production level, the primary problem is the capacity to produce a consistently high quality product, especially for vegetables.
- At the postharvest level, quality often suffers from harvesting practices (such as knocking mangoes out of a tree with a stick) or initial packing for transport to an assembly site.
- Access to airport cold storage was monopolized until recently, discouraging entry into the trade.
- Air freight capacity, though now adequate, requires careful planning and reservations, and perhaps penalties for failure to supply sufficient quantities to meet planned shipments.
- Relations between exporters and importers have often been adversarial. Communication problems have limited the ability to respond quickly to market opportunities.
- The difficulty of obtaining financing has prevented small and medium traders from entering the market. This business requires exporters to make substantial outlays (for seeds, fertilizers, pesticides, agronomic advice, purchase of crop, domestic transport, grading, cleaning and packing). Many exporters have been unable to absorb the shock of having even one consignment rejected.
- The Government of Mali has discouraged horticultural exports by private traders in direct and indirect ways. The 8 percent export tax was the most visible disincentive. The fact that Fruitema was exempt from this tax indirectly discouraged competition with Fruitema. The fact that Fruitema handles approximately 90 percent of horticultural exports testifies to the effectiveness of this policy in eliminating competition.

Some of the problems which led to the demise of private exporters around 1985-86 have been resolved. A privately owned cold storage facility is now located at the airport, and three airlines fly direct to Paris and Brussels. In addition, the export tax has been rescinded.

The remaining problems concern knowledge and skills in marketing organization and management at all stages of the system. In simple terms, this is a human resource constraint.

- Producers must learn to follow rigorous farming practices which will produce quality products at competitive costs. They must also follow strict harvesting and handling procedures.

- Extension agents, either OHV or private, must learn quality and variety standards and techniques for increasing yields and ensuring quality. They must also become aware of the market and understand the cropping calendars of Mali's competitors.
- Exporters need to study the market, establish solid relations with producers and importers, and coordinate the activities of other members in the system. They must master the complex timing and logistics involved in harvesting, packing, and transportation. As one importer said, they need to know exactly how their product will look 48 hours after it leaves their hands.

### 6.3 Recommendations

- a. If USAID/Mali wishes to address the constraints described above, it must focus on strengthening the links between the various participants in the marketing system.
- b. USAID/Mali should carefully consider the likely implications of addressing these constraints. The private sector is practically non-existent in the export of fruits and vegetables. An attempt to revitalize this sector could involve several years of intensive assistance.
- c. It is recommended that any USAID involvement focus on improving management skills of traders, thus encouraging a vertically integrated system of production and marketing. Efforts could include promoting the use of standard contracts between producers and traders, establishing joint ventures with European importers, and exploring the feasibility of an exporters' cooperative to promote economies of scale.
- d. Initial efforts should focus on mangoes, French green beans, and bobby beans in niche markets in Western Europe. Other crops should be omitted.
- e. If USAID/Mali decides to proceed with a full-scale examination of Malian horticultural export potential, it should carry out a study similar to the one described in the scope of work in Appendix C.

## APPENDIX A

### PERSONS CONTACTED DURING THE STUDY

#### Mali

Ambassador Robert Pringle	United States Ambassador to Mali
Ambassador Choo Siew Kioy	Malaysian Ambassador to Mali
Mr. Dennis Brennan	USAID Mission Director
Mr. Tracy Atwood	Chief, Agricultural Development Office-USAID
Mr. Adly Hassanein	Chief of Party, Development of Haute Valle Project - Experience Inc.
Mr. John Caracciolo	Credit Advisor, DHV Project, Experience, Inc.
Mr. Dennis Bilodeau	USAID Project Office, DHV Project
Mr. Vic Duarte	Economist, USAID
Mr. Augustin Dembele	Agricultural Development Office, USAID
Mr. Reid Whitlock	Agricultural Development Office, USAID
Mr. Oumar Dia	Agricultural Development Office, USAID
Ms. Jill Donohue	Associate Peace Corps Director
M. Yaya Togola	Director of Operation Haute Valle (OHV)
M. Issaga Konate	Deputy Director of Operation Haute Valle
M. Saloum Sacko	Chief, Monitoring and Evaluation OHV
M. Ibrahima Coulibaly	Chief, Development Support Services and President of the Privatization Commission OHV
M. Seydou Coulibaly	Chief, Animal and Vegetable Production OHV
M. Amadou Coulibaly	Chief, Statistics, Planning & Evaluation OHV
M. Moussa Kante	Director, Project for the Rehabilitation of the Baguineda Agricultural Perimeter
M. Daba Traore	General Secretary of the Mali Chamber of Commerce
M. Fousseyni Diallo	General Secretary of the Mali Chamber of Agriculture
M. Mohamed Cisse	Director of the National Office of Statistics
M. Diarra	Chief of the Treatment & Control Division, MOA
M. Freddy Van Staen	Flight Chief, SABENA Airlines
M. Mamadou Traore	Horticultural Exporter, Continental Air Service
M. Djim Diallo	President, UNCPM
M. Bakary Sidibe	Director, UNCPM
M. Dian Diakite	Director Comptoir Nord-sud
M. Bourama Traore	Director Comptoir du Sud
M. Mamadou Malinke	Deputy Director, FRUITEMA
M. Dembele	Chief, Agricultural Production, FRUITEMA
M. Kalil	Chief, Air Shipments, FRUITEMA
Mme. Corine	Former Horticultural Exporter with Jardinma
Cooperative of Kabala	UTA Airlines
Cooperative of Koulikoro	

## Europe

M. Dennis	Export Advisor, COLEACP, Rungis, France
Felicite-Zulma	Lamparra Import/Export Agency, Rungis, France
M. Jean-Louis Durand	Ets. G. Lagueyrie Import/Export, Rungis, France
Mme. Gisele Lagueyrie	SIMI Import Ltd., Rungis, France
M. Henri Beaulieu	General Manager, Pasqual Ltd. Barendrect, Netherland
Mr. Luc Smits	Hage International BV, Barendrect, Netherland
Mr. Johan Kaashoek	Westland Import Intl., Poeldijk, Netherland
Mr. Harry van der Spoel &	Division Head, MONIPEX, Budapest, Hungary
Mr. Ari Hooimeijer	Director of Marketing, MOSZ Cooperative, Budapest, Hungary
Mr. Jenő Budavari	Deputy Import Director, Delker Agricultural Trading Co., Budapest, Hungary
Dr. Istavan Mass	Director of International Trade, Ministry of Agriculture, Budapest, Hungary
Ms. Korona Zoltanne	Division Manager, Agricultural Trading and Consulting Division, Economix Ltd., Budapest
Mr. Hancsok Zoltan	Commercial Attache, U.S. Embassy, Hungary
Dr. Csaba Forgacs	Agricultural Specialist, U.S. Embassy, Hungary
Mr. David Hughes	Economics Officer, U.S. Embassy, Hungary
Mr. Ferenc Nemes	
Mr. Jeffrey Feltman	

## Côte d'Ivoire

Mlle Abouattier Adèle	CIRES (Centre Ivoirien de Recherche Economiques et Sociales)
Mr. Yessou Mathias	Sodefel
Mr. Dao Amara	OCPF (Office d'Aide à la Commercialisation des Produits Vivriers)
Mr. Yao Martin	Ministère de l'Agriculture

## Local Markets in Abidjan

Plateau:	One transporter Two wholesalers
Adjamé:	Two wholesalers One transporter Three retailers
Gouro:	Three retailers

## APPENDIX C

### SCOPE OF WORK

The August 1990 AMIS report on Horticultural Export Potential for Mali identified major constraints in the organization and management of the production, handling, and marketing of fruits and vegetables. It also found that markets exist in Western Europe for Malian mangoes, French green beans, bobby beans and, to a lesser extent, chili peppers and cherry tomatoes. In order to define precisely any steps USAID and the OHV project should take to eliminate these constraints, a number of issues should be examined in greater detail.

- A. Analyze alternative marketing arrangements for exporters.
  1. Assess the feasibility of joint ventures, partnerships or other types of associations between European importers and Malian exporters.
    - a) Determine whether such arrangements have been effective elsewhere and document the conditions of successful arrangements.
    - b) Examine the legal environment and identify pertinent restrictions and regulations to such associations in Mali.
    - c) Assess the suitability of the involvement of such organizations as OHV and the Chambers of Commerce and Agriculture.
  2. Determine whether an association or cooperative of private exporters could be a viable mechanism for addressing problems of economies of scale, negotiation of contracts with producers and airlines and commercial credit availability. If such a cooperative appears to be viable, define the role it should play, its membership and their responsibilities and resource requirements, etc.
  3. Explore the possibilities and conditions under which vegetable production for export could be supplied through a contract farming system.
  4. Examine how Mali's principal competitors--Kenya, Burkina Faso, and Senegal--have organized their production and marketing systems. Assess the suitability of such arrangements in the Malian context.
- B. Assess the profitability of private sector export operations.
  1. Identify the cost structure associated with the various aspects of green bean exports:
    - a) Seeds, fertilizer, insecticides and other cash or purchased inputs;

- b) Extension advice and production supervision;
    - c) Postharvest handling, grading, sorting and packing; and
    - d) Availability and cost of credit;
  - 2. Identify the cost structure associated with the various aspects of mango exports:
    - a) Postharvest handling, grading, sorting and packing; and
    - b) Availability and cost of credit.
  - 3. Identify means of reducing production and marketing costs.
- C. Analyze specific niche markets for French green beans, bobby beans, amelia and American mangoes, chili peppers, and cherry tomatoes.
- 1. Precisely define windows of opportunity for each crop.
  - 2. Identify precisely when competitors are in the market.
  - 3. Compare OHV crop calendar to windows of opportunity and define a compatible production marketing strategy.
- D. Evaluate the type and scope of training required to address human resource constraints at the production and marketing levels.
- 1. Identify effective ways to educate producers in the quality requirements of the export market.
  - 2. Identify training needs in marketing organization and management for exporters.
  - 3. Recommend appropriate mechanisms for providing training to private sector exporters.
  - 4. Advise on the suitability of visits to the European markets and/or Mali's competitors.
- E. Assess governmental support for horticultural exports.
- 1. Evaluate status of export promotion services:
    - a) Export tax incentives;
    - b) Credit for business start-up;
    - c) Promotion of Malian products;

- d) Advertising; and
- e) Trade show participation.

2. Assess feasibility of Malian representation at Rungis market.

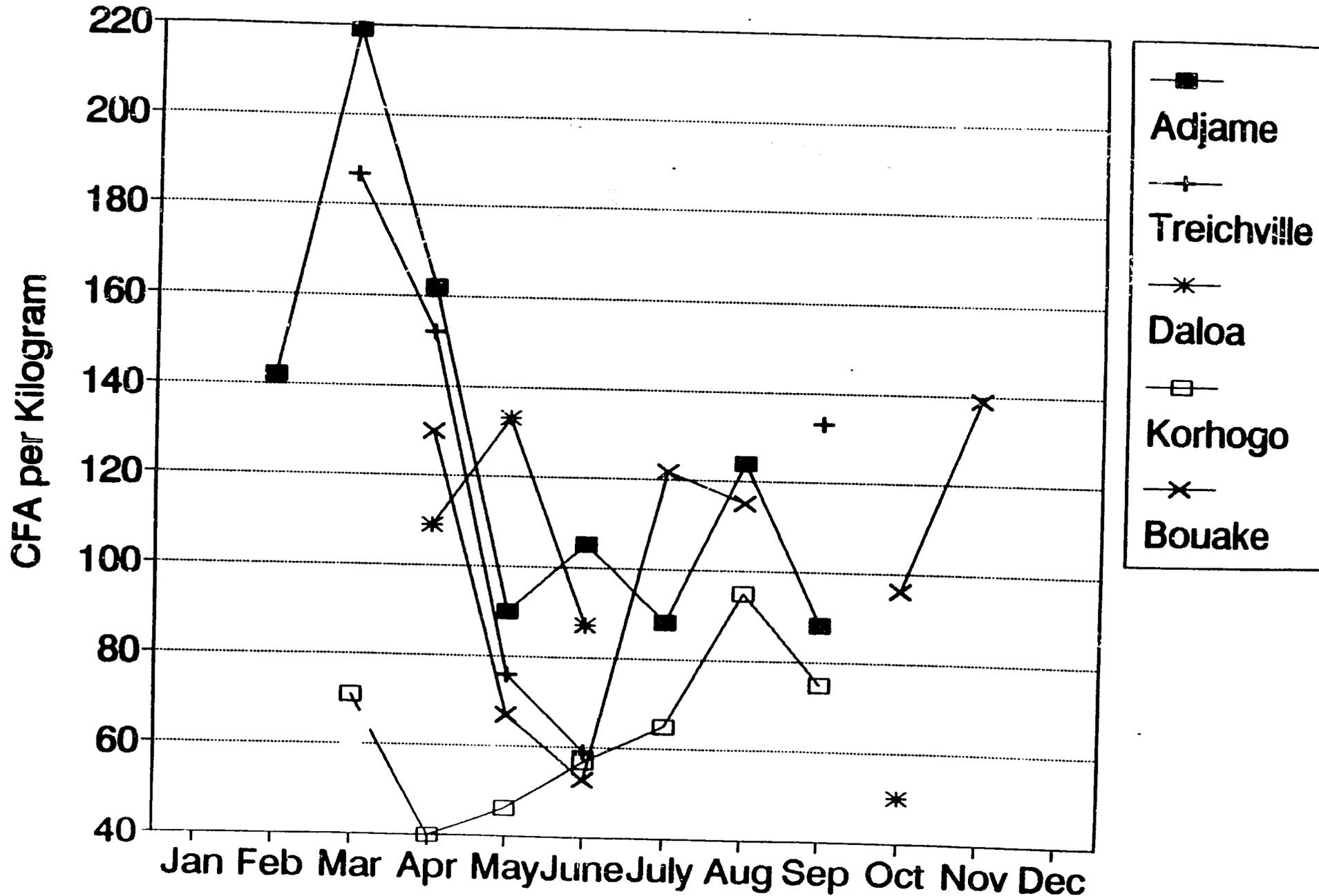
F. Recommendations on staffing:

- 1. A European specialist in joint ventures in the horticultural sector;
- 2. An agricultural economist to examine the costs of production and international marketing, returns to export activities, and other pricing issues;
- 3. An agribusiness specialist familiar with vertically integrated production and marketing systems and with
- 4. A Malian lawyer familiar with contract law, joint ventures, and partnerships with expatriates.

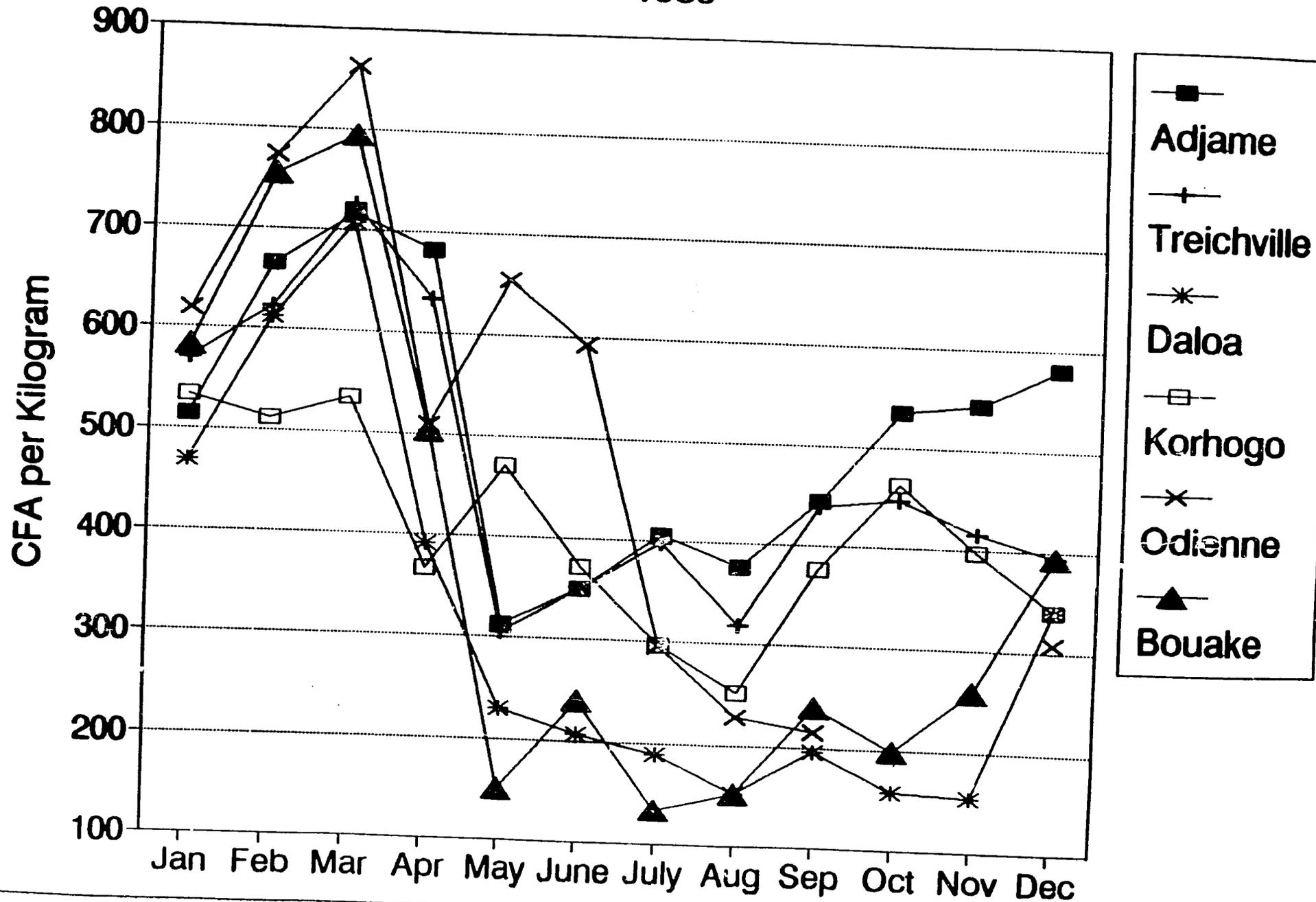
**APPENDIX D**

**TABLES**

# MANGO PRICES IN SELECTED MARKETS IN COTE D'IVOIRE 1989

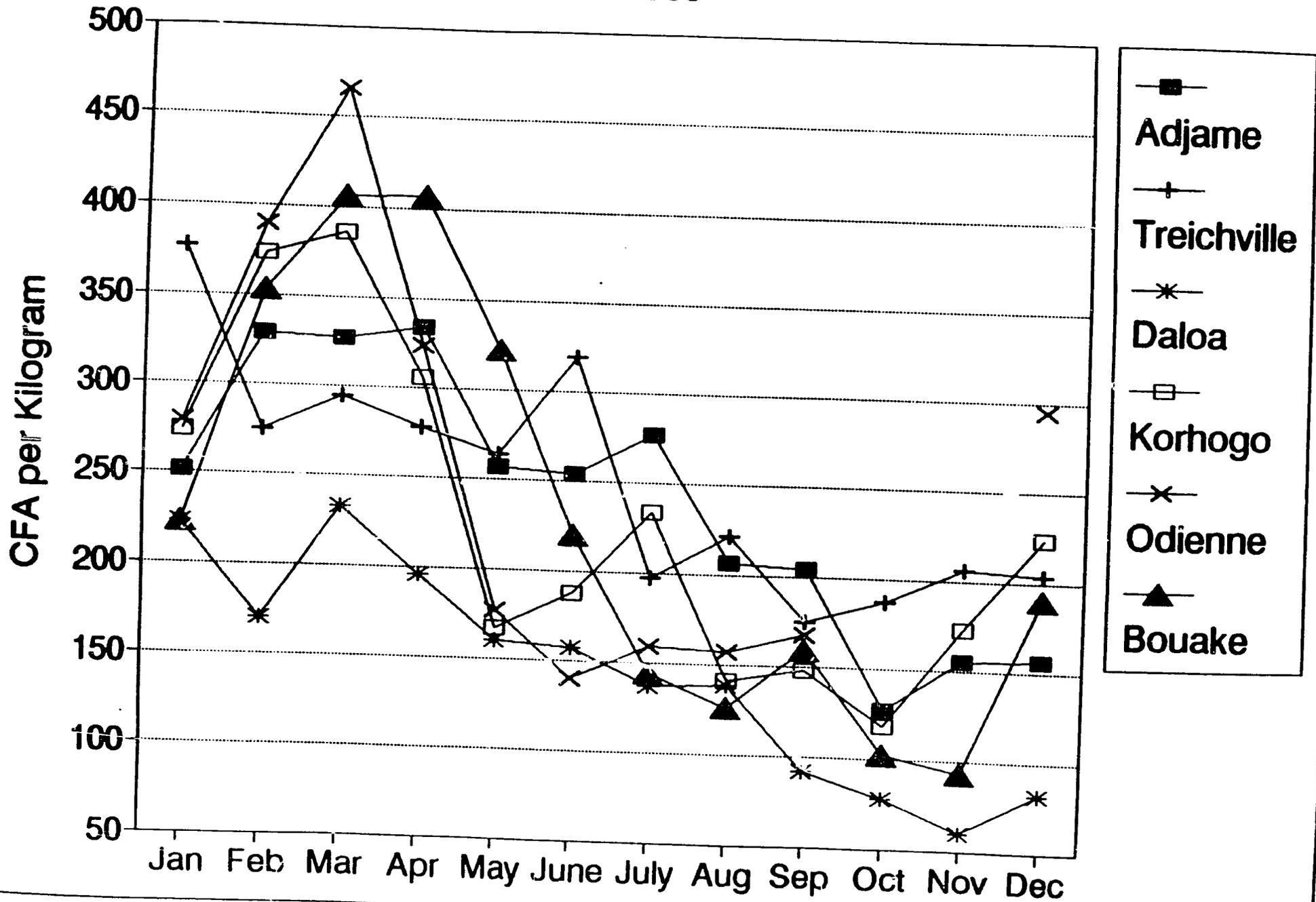


# FRESH PEPPER PRICES IN SELECTED MARKETS IN COTE D'IVOIRE 1989

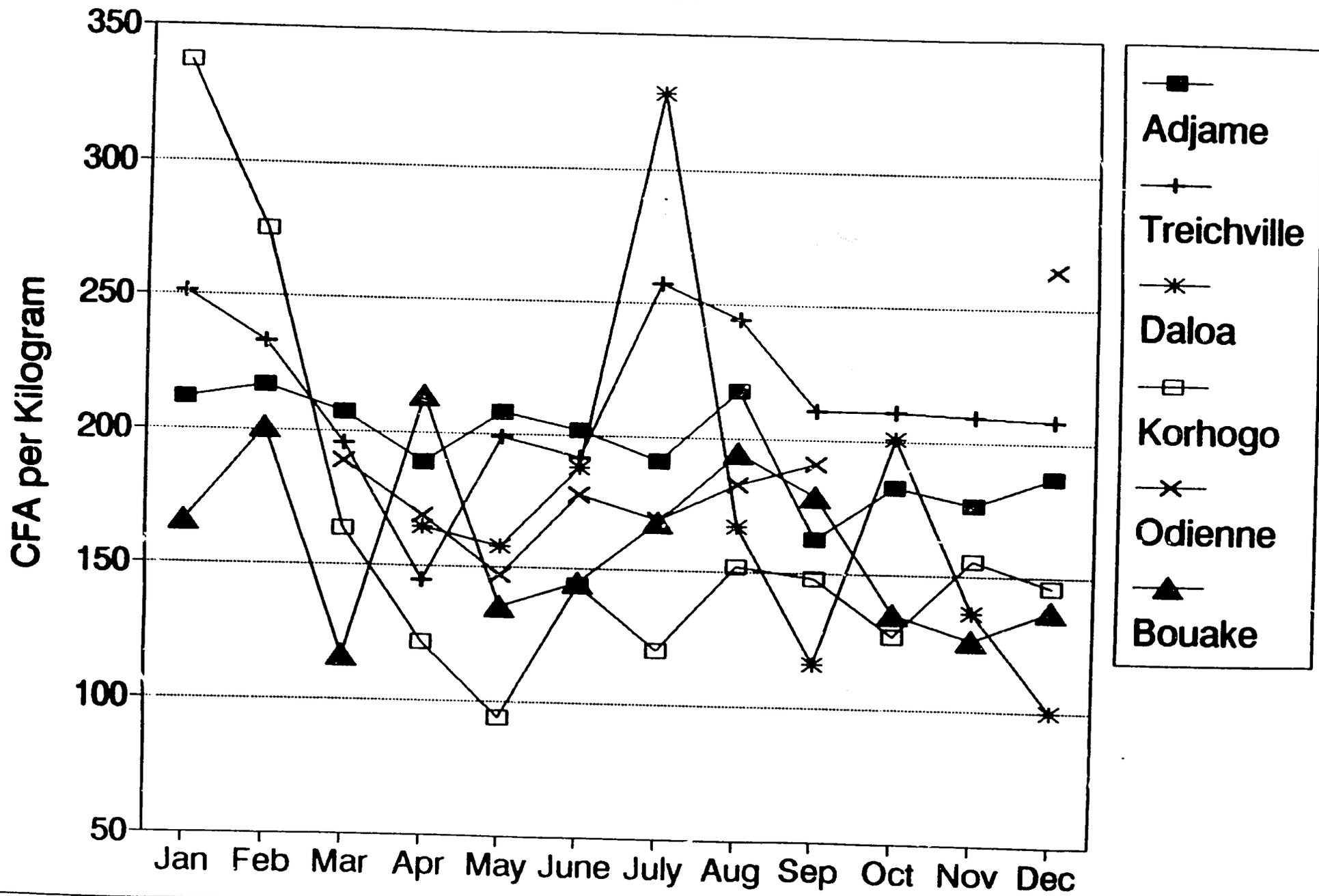


# FRESH OKRA PRICES IN SELECTED MARKETS IN COTE D'IVOIRE 1989

D-3

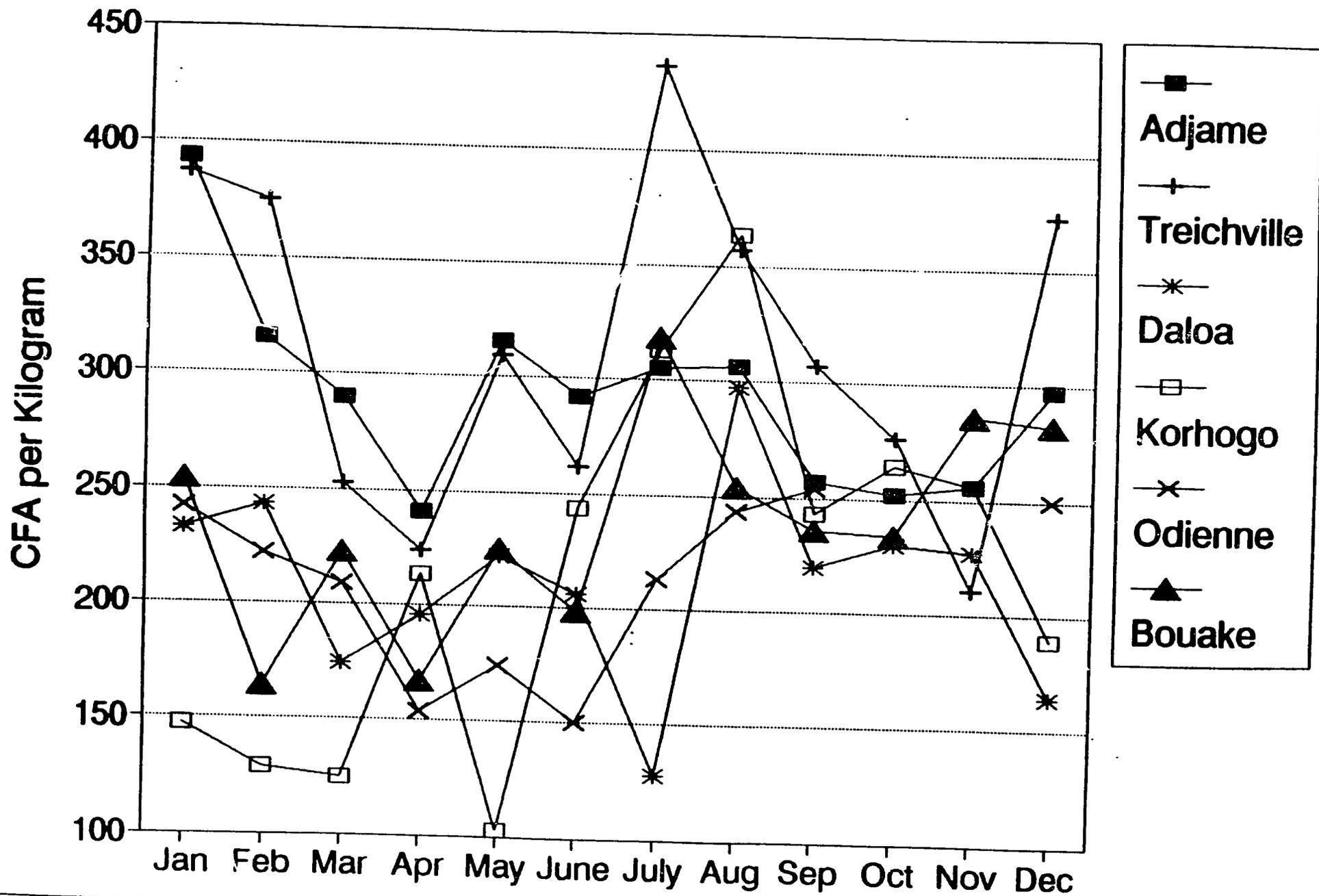


# CUCUMBER PRICES IN SELECTED MARKETS IN COTE D'IVOIRE 1989



# CABBAGE PRICES IN SELECTED MARKETS IN COTE D'IVOIRE 1989

D-5



# ONION PRICES IN SELECTED MARKETS IN COTE D'IVOIRE 1989

D-6

