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**Implications of the Single European Market 1993 for Traditional
Banana Suppliers**

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A dissertation submitted in partial fulfilment of the requirements for the degree of
M.Sc. in Agricultural Economics

August 1992

I wish to thank

my parents for their love and their permanent support,

Professor Alan Swinbank for his advice,

Suzanne, Jeremy and Paolo for many nice evenings in Reading,

and Maria for her love and many encouraging phone calls.

Abstract

This study describes the EC banana market in context of the world market and illustrates its fragmented structure. The importance of bananas to various exporting countries is analyzed.

In 1993 a single European banana import regime has to be created, and various proposals for future policies are investigated in this paper using the tools of partial-equilibrium analysis and welfare economics. In a simulation model of the world banana market the trade and welfare effects of various future policy options are generated and the consequences for so-called "traditional" banana suppliers are discussed.

More liberal policies combined with direct aid payments seem to be preferable in terms of total world welfare and flexibility in compensating for losses occurring in banana exporting countries.

Table of Contents

Page

Abstract	III
Table of Contents	IV
List of Tables and Figures	V
1 Introduction	1
2 The International Banana Market	3
2.1. The World Market	3
2.2. The Transnational Companies	9
2.3. The European Market	12
3 The Situation of Traditional Suppliers	18
3.1. Supply Characteristics	18
3.2. Cost of Production and Competitiveness	20
3.3. Dependence on Bananas	24
3.4. Economic Background and Prospects	26
3.4.1. The EC Overseas Territories	27
3.4.2. The ACP Suppliers	29
4 The Single European Market 1993	35
4.1. Economic Effects of Current Policies	35
4.2. Commitments of the EC	39
4.3. Policy Options for a Future EC Banana Import Regime	43
5 Quantitative Analysis of Different Policy Options	46
5.1. Review of the Models in the Literature	46
5.2. Methodology	50
5.2.1. Comparative Static, Partial-Equilibrium Analysis	50
5.2.2. Structure of the Model	51
5.3. Simulation Results	53
5.3.1. Parameters of the Model	53
5.3.2. Discussion of the Results	55

6 Summary and Conclusions 60

7 References 62

List of Tables and Figures

Table 1:	Exports of bananas in various years by major producers	3
Table 2:	Imports of bananas in various years by major importers	4
Table 3:	Retail prices and per capita consumption of bananas in various countries	8
Table 4:	Banana imports of EC countries in 1990	12
Table 5:	Average cif and retail prices of bananas in various countries in 1989	17
Table 6:	Average yields and farm sizes in selected banana exporting countries	21
Table 7:	Average cif prices of bananas received by exporting countries in 1989	23
Table 8:	Dependence on banana exports in various countries	24
Table 9:	Sensitivity analysis of model results .	55
Table 10:	Results of policy simulation runs	55
Table 11:	Comparison of different study results .	57
Table 12:	Welfare change in relation to GDP per head of population in exporting countries due to EC policy changes	58
Figure 1:	Per capita consumption of bananas in various years in major importing countries	6
Figure 2:	Per capita consumption of bananas in European countries in 1990	7
Figure 3:	EC banana import policies	37

"The EC's Single Market will be incomplete without them. A Uruguay Round trade deal looks even less likely without them. The honour of the Community is at stake because of them. As a result of this, they are the object of one of the most intense lobbying operations the EC has witnessed.

So there are things you may not have suspected about bananas - not the fruit of choice of the European Commission at the moment."

(Financial Times, 06.04.92)

1 Introduction

In the process of creating a Single European Market (SEM) bananas have become a contentious issue within the European Community (EC).

As early as the Community was founded in 1957, the EC's trade in bananas was a point of controversy, mainly because almost every member country had traditional relationships with banana exporting countries. France and Italy felt themselves committed to support their former colonies, whereas Germany always imported bananas from Latin American countries. The accession of the UK, Greece, Spain, and Portugal to the EC made the European banana market gradually ever more complex, since all these countries had "their own" banana suppliers.

Intra-Community trade was restricted by application of Article 115 of the Treaty of Rome, and hence the banana market became one of the most fragmented EC commodity markets over the last decades.

There are three main groups of countries exporting bananas to the Community:

- a) EC overseas territories
- b) various countries of the African, Caribbean and Pacific (ACP) group
- c) various Central and South American countries.

The former two are so-called "traditional" banana suppliers, whereas the latter are known as "dollar banana" exporters.

Traditional suppliers enjoy preferential access to the EC, whereas dollar bananas are traded on the free world market.

Under the Single European Act the EC is obliged to create a *single* European banana import regime in 1993, ie Article 115 will become inoperative. However, the Community is also committed to support ACP suppliers under the Lomé IV convention *and* has to seek acceptance in the GATT Uruguay round of multilateral trade negotiations.

Since the traditional exporters cannot compete with dollar bananas, they fear to be pushed out of the market, if the EC adopts a liberal trade regime. Some of these traditional exporters are heavily dependent on bananas and would face disaster if they

lost this source of export earnings.

This study tries to investigate economic consequences of future EC policies for traditional banana suppliers.

In Chapter 2 the international banana market will be described as well as the current situation within the EC. Chapter 3 provides an outline of the economic situation in traditional banana exporting countries and analyzes their dependence on bananas and competitiveness.

The economic effects of the current EC banana import regimes are analyzed qualitatively in Chapter 4, the commitments of the EC are described and various future policy options are presented.

In Chapter 5 a simulation model of the world banana market is outlined. The results of various model runs are discussed providing trade and welfare effects of different EC policy options.

Chapter 6 provides a summary and draws conclusions from this study.

"We tend to forget that bananas are not merely a dessert. In many regions bananas are eaten green, pureed or grilled, as a vegetable. Bananas are used to produce a very popular aromatic beer, so that they are also a source of alcohol. Fruit, vegetable or drink, the banana is Nature's convenience food."

(The Courier, No.78, 1983)

2 The International Banana Market

2.1. The World Market

Bananas rank first in world-wide fruit production, followed by grapes and citrus fruits. Total world production is estimated at 66 million t (EC, 1991, p.3).

The production of bananas for export is clearly distinct from production for domestic use. World exports were around 8.3 million t in 1989 (EC, 1991, p.36). Among main producers like India, Brazil, Indonesia, Ecuador, Philippines, and Thailand only Ecuador and the Philippines are substantial exporters. Bananas are almost exclusively exported from developing countries (LDC) to developed countries (DC) (Borrell, Yang, 1990, p.3).

The volumes of major exporting and importing countries in various years are shown in Tables 1 and 2.

Bananas are an important source of export earnings and employment in various LDCs. Although the general trend goes downwards there remain still some countries highly dependent on banana exports (see Ch.3).

Table 1: Exports of bananas in various years by major producers (1000 t).

	1972	1982	1988-90	1988-90 %
Central America				
Costa Rica	950	919	1270	15.1
Honduras	820	820	851	10.1
Panama	604	563	697	8.3
Guatemala	258	380	353	4.2
Nicaragua	42	43	68	0.8
South America				
Colombia	195	733	933	11.1
Ecuador	1403	1254	1781	21.1
Caribbean				
Jamaica	129	22	45	0.5
Windward Is.	122	113	266	3.2
Guadeloupe	120	122	106	1.3
Martinique	192	156	191	2.3
Asia				
Philippines	422	900	856	10.1
Africa				
Cameroon	65	53	49	0.6
Ivory Coast	164	85	89	1.1
Somalia	134	48	72	0.9
EC				
Canary Islands			400	4.7
Madeira			40	0.5
Other	808	761	368	4.4
World	6428	6972	8435	100.0

Sources: Simmonds, 1987, p.413; EC, 1991, p.36.

Table 2: Imports of bananas in various years by major importers (1000 t)

	1975	1985	1989	1989 %
EC	2264	2271	2955	36.4
Germany	547	584	901	11.1
France	480	426	455	5.6
Italy	304	307	400	4.9
UK	308	324	434	5.3
Other Western Europe	383	334	504	6.2
USA	1794	2772	2760	34.0
Japan	885	680	774	9.5
Eastern Europe/ USSR	267	216	184	2.3
Developing Countries	543	493	594	7.3
World	6390	7105	8120	100.0

Sources: Simmonds, 1987, p.413; EC, 1991, p.37.

The international market for bananas is not a single world market. FAO (1986, p.3) distinguishes five main segments:

a) Open markets: Major trade flows are from Central and South America to North America and the non-preferential markets in Western Europe. A separate part due to proximity consists of trade from the Philippines and China to Japan. These markets add up to 67% share in total world imports.

b) Preferential markets: France, Italy and the United Kingdom are supplied by the French Overseas Departments (DOM, i.e. Départements d'Outre-Mer) and countries of the African, Caribbean and Pacific (ACP) group who enjoy preferential access under quota and licensing arrangements. They make up 15% of world trade.

c) Spain/Portugal: These countries are supplied by domestic regions, Spain by the Canary Islands and Portugal by Madeira. Trade flows operate outside the competitive banana trade and contribute 5% to world volumes.

d) New markets: These are identified by low per caput consumption and the potential for

much greater imports. Main regions are Eastern Europe, the former Soviet Union and former Yugoslavia, and on the other hand oil exporting countries of the Near East and Northern Africa. Demand prospects were promising in the early seventies, but imports have stagnated or declined in recent years (7% share in world imports in 1989). However, there was a significant increase of imports in 1990 in Poland and Turkey (EC, 1991, p.37).

e) Other markets: Diverse trade flows of only regional importance account for the remaining 6% of world trade.

Demand Characteristics

Bananas, like virtually all food commodities, are subject to declining income elasticities of demand as per capita income rises. Despite this per capita consumption in several DC increased in recent years after stagnation in the seventies. In 1989 saturation levels were estimated at 10 kg/head/year. This is now exceeded by several countries (see Figures 1 and 2; FAO, 1991/7).

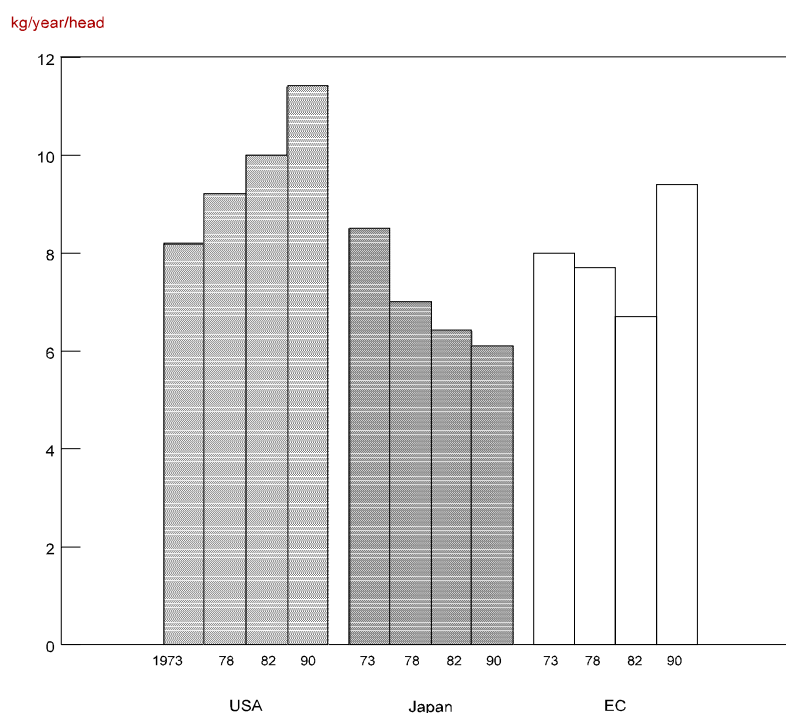


Figure 1: Per capita consumption of bananas in various years in major importing countries (kg/year/head)
Sources: Simmonds, 1987, p.415; EC, 1991, p.37.

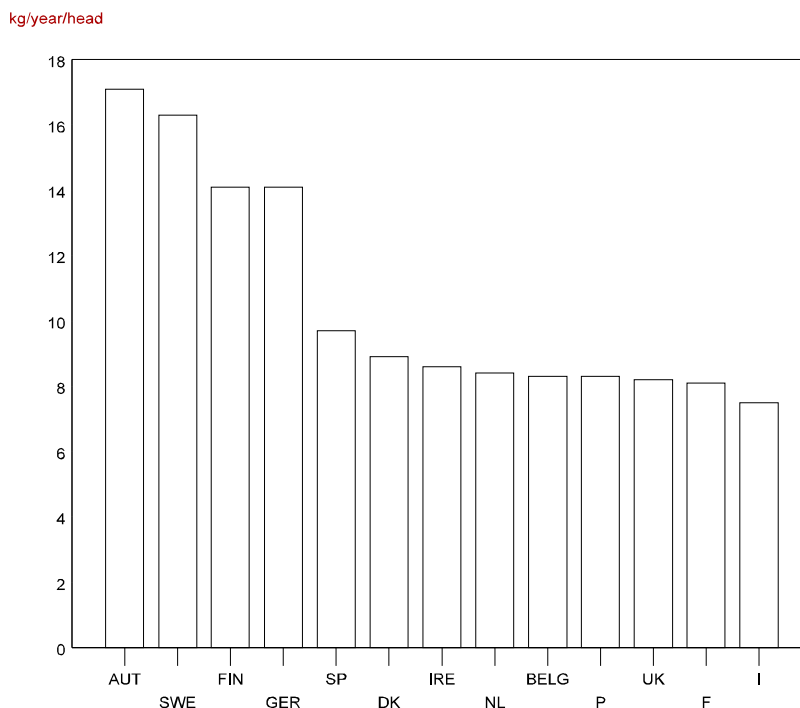


Figure 2: Per capita consumption of bananas in European countries in 1990 (kg/year/head)

Source: EC, 1991, p.37.

In most DC bananas as a fresh fruit are sold alongside many other temperate zone and tropical fruits. Especially the range of available tropical fruits has increased and enables consumers to substitute for more "traditional" fruits eg apples, pears, and bananas (FAO, 1986, p.73).

The fresh fruit market is highly competitive and it must be expected that seasonal availability and relative prices between different kind of fruit are determining demand (FAO, 1986, p.5).

Other important criteria are taste and appearance with emphasis on the latter, since

"bananas are cosmetic things in that people are buying the skins. They buy on the basis of the skin being the right colour and with a minimum of blemishes" (Burlton, 1983, p.90).

Recent increases in EC demand, as FAO (1990, p.38) assumes, are probably due to greater health awareness (bananas fit well into a health-conscious diet) and competitive price levels. It must be recognized, though, that there is no close correlation between low retail prices and high per capita consumption (see Table 3).

Table 3: Retail prices and per capita consumption of bananas in various countries (1990)

	US\$/t	kg/head
USA	968	11.4
Portugal	1240	8.3
Germany	1331	14.1
Netherlands	1375	8.4
Spain	1540	9.7
UK	1727	8.2
France	1738	8.1
Italy	2156	7.5

Source: EC, 1991, p.15,37.

A special characteristic of bananas is the virtual absence of seasonality in supply. Harvesting is a continuous year round activity that provides producers with relatively constant revenues and guarantees availability on the consumption side at prices with negligible seasonal fluctuation compared to other agricultural commodities (FAO, 1986, p.7). Yet nearly all exporting countries suffer from adverse weather conditions like hurricanes or droughts in some years, which may then disrupt supplies in protected markets (see Ch.3). In the open markets this is compensated for by other exporters.

Price Stability

FAO (1986, p.7) points out that

"the responsiveness of export supply is typically very high to changing market conditions. It is rare for banana plantations to be operated at the limit of output capacity, the proportion of fruit rejected on quality grounds can be varied within limits, and banana vessels on voyage to export ports in Central and South America can usually make up shortfalls which occur in any one location from adjacent sources of supply."

Consequently a study found that bananas are the most stable commodity in terms of world market price and export revenue fluctuations (see Harris et al., 1978, cit. in FAO, 1986, p.9).

There is a widening gap between exports potentially available and import demand. This is forecasted to become 1.4-2.1 million t over the next years (FAO, 1991/7).

Hence future price levels will depend on further per capita consumption increase, effects of trade liberalisation, and the growth potential in Eastern Europe.

2.2. The Transnational Companies (TNCs)

Bananas are highly perishable fruits which have to be transported over long distances from producers' locations in LDCs towards the retail outlets in DCs. There are only some 21 days available between harvesting and the fruit being unsuitable for sale (Read, 1986, p.333). Bananas are harvested when they are still green and "three quarters round" (Neue Zürcher Zeitung, 20.05.92). Nowadays they are packed into boxes right on the field, then transported to the port and shipped in refrigerated vessels to the countries of destination. Banana bunches have to be cut every 7-10 days and the vessels depart weekly (Simmonds, 1987, p.408; Thomson, 1987, p.57).

In the importing countries the fruit has to be further ripened artificially in special ripening centres until it is suitable for sale.

This year round movement from growers to shippers, ripeners and consumers requires a high degree of integration at all stages between the plantation and the supermarket (Simmonds, 1987, p.408). Not surprisingly a feature of the world banana market is the dominant role that is played by three TNCs, United Brands (former United Fruit Company), Castle & Cook (former Standard Fruit), and Del Monte.

Of the five phases in the marketing chain for bananas (production, transport, ripening, wholesale and retail distribution) traditionally the TNCs were heavily involved in the first four phases (Thomson, 1989, p.21). Due to "adverse" policies imposed by governments of exporting countries¹ the proportion of bananas *produced* by the TNCs themselves has declined to approximately 30% of world exports in 1983 (Simmonds, 1987, p.409).

Nevertheless the TNCs still account for about 70% of the volume *marketed* world-wide, mostly purchased free-on-board (f.o.b.) in exporting countries.

Only in two cases, UNIBAN of Colombia and NOBOA of Ecuador, growers have been

¹The most striking example is the introduction of a banana export tax by Panama, Costa Rica, and Honduras in 1974 in order to raise revenue and increase the producers' share in retail prices. The result was a confrontation with the TNCs called the "banana war".

able to set up independent exporting companies and gain substantial shares in the open markets (EC, 1991, p.24).

In preferential markets either government-sponsored agencies or independent companies (eg Geest in the UK, see below) handle banana imports. Under these conditions where imports are subject to licenses or quotas, in good years the banana trade is "a license to print money" (Thomson, 1987, p.44).

The potential profit margins from banana trade in open markets are often over-estimated. The TNCs make profits from high volumes at relatively low margins per unit, benefitting from experience and expertise. Yet their highly integrated structure still enables them to apply a transfer pricing strategy which makes it difficult to determine market prices at different stages of the marketing chain (Thomson, 1987, p.22).

FAO (1986, p.9-10) states that

"the percentage relationship between prices at different stages of the marketing system tends to remain highly stable in the long run, even when the system is subjected to great shocks [...] Any increase in f.o.b. export costs causes a succession of percentage adjustments in all the margins of the system [...] It also means that the impact of raising retail prices via supply restrictions is unlikely to result in a cent-for-cent increase in export prices. Instead, the same proportion of an increase to gross retail value will be absorbed by the various downstream stages of the marketing system."

This point has to be kept in mind when the impact of market regulations, eg quotas, is measured (see later sections).

Two contrary aspects of the role of TNCs are to be considered: they often provide the vital links between producers and the marketing chain which is especially important when dealing with a product as difficult to handle as bananas.

On the other hand, the desired effects of policy changes in DCs on exporting countries, whether liberalising or restricting trade, may be partly or mostly absorbed by the TNCs as the linking institutions (see Bolton, 1987).

2.3. The European Market

The EC accounts for 36% of world banana imports (see Table 2), ie nearly 3 million t in 1989. Table 4 shows the share of individual member states in total EC imports in 1990.

Table 4: Banana imports of EC countries in 1990 (1000 t)

	1000 t	%	
Belg-Lux	172.8	5.3	
Denmark	46.0	1.4	
France	492.5	15.0	
Germany	1164.8	35.4	
Greece	46.0	1.4	
Ireland	35.7	1.1	
Italy	391.3	11.9	
Netherlands	96.0	2.9	
Portugal	84.3	2.6	
Spain	345.9	10.5	
UK	414.8	12.5	
EC	3290.1	100.0	

Source: Eurostat, 1990.

There are three main groups of exporting countries delivering bananas to the EC:

- the Latin American, so-called "dollar banana" exporters² contribute 62% to EC imports (Eurostat, 1990). The dollar banana suppliers are Colombia, Costa Rica, Ecuador, Guatemala, Honduras, Nicaragua, Panama, and the Dominican Republic³
- ACP countries deliver 18%
- Overseas territories of the EC account for 20%⁴.

²The term "dollar banana" has its origin in the UK, where Latin American bananas were distinguished from "sterling bananas" imported from the Commonwealth Caribbean countries (ie Jamaica and the Windward Islands; Thomson, 1987, p.28-29).

³The Dominican Republic in fact belongs to the ACP group, but is for some reason counted as a dollar banana exporter (Borrell, Yang, 1990, p.10). Since supplies to the EC are marginal, this country is neglected in subsequent analysis.

⁴Sales of bananas from territories formally associated with the EC, such as the French DOM, the Canary Islands, Madeira and Crete, are traditionally counted as exports to the EC rather than intra-Community trade (Matthews, 1992, p.3).

Generally a common external tariff (CET) of 20% ad valorem is charged on banana imports into the EC.

However, imports from ACP countries, under the Lomé convention, enter the Community duty-free. The same applies for the EC overseas territories.

The EC banana trade was a point of controversy as early as the Community was founded. Bananas are listed in Annex II of the Treaty of Rome and thus are covered by the CAP, but as yet the market for bananas is not regulated in the manner of other CAP commodities (Swinbank, 1987, p.6).

Divergent interests especially between Germany and France led to the addition of a "banana protocol"⁵ to the Treaty of Rome. In the following decades the commitment of different EC member states to support and protect their former colonies made the banana market one of the most fragmented EC commodity markets.

There are basically three different import regimes for bananas in the EC.

a) **The Netherlands, Belgium, Luxembourg, Denmark, and Ireland** simply impose the CET but no further quantitative restrictions on imports of any origin. For reasons of competitiveness (see Ch.3) virtually all their imports come from dollar suppliers. This group imports 10.6% of the total EC volume (1990).

b) **Germany** is the biggest EC importer of bananas and has the most liberal regime. German imports account for 35% of EC trade.

Virtually all bananas enter the country duty-free and they are supplied exclusively by Latin American countries. The above mentioned banana protocol in the Treaty of Rome was a compromise between France and Germany. France wanted to protect producers in the Associated African States (see Annex IV, Treaty of Rome) and its DOM, whereas Germany had for years imported all its bananas from Latin America at relatively low prices (Biskup, et al., 1966, p.17). Thus Germany was guaranteed a basic tariff quota equal to 75% of imports in 1956 plus a growth factor. If the remaining demand could not be met by preferential suppliers (in terms of quantity and required quality!) the member states were ready to increase the German quota (Para.6, Banana protocol, Treaty of Rome, 1957). This was always the case over the last decades, so all German imports were covered by the tariff quota.

⁵Protocol concerning the tariff quota for imports of bananas (Treaty of Rome, 1957).

The relatively liberal markets mentioned in a) and b) are almost exclusively (>90%) supplied through the "big three" TNCs (see 2.2.), NOBOA, and UNIBAN (EC, 1991, p.24).

c) The remaining EC members apply individual quota and licensing schemes to banana imports.

France: The French market is organised by the Comité Interprofessionnel Bananier (CIB) which was created in 1932 and has 27 members representing all stages in the marketing chain (including producers of preferential countries) and the French government (FAO, 1986, p.45).

All transport and marketing activities are conducted by French companies. The French market is divided and quotas are set up in the proportion two thirds for French DOM and one third for Cameroon/Côte d'Ivoire (Noichl, 1985, p.66). In case of production shortfalls licenses are granted for imports from the world market. In 1990 imports from dollar suppliers made up 6.3% which are of course subject to the CET.

Italy: The special feature in this country was a special consumption tax on bananas. Until 1965 there was a State Banana Monopoly operating which had complete control over purchase and distribution of bananas. After abolition of this institution the consumption tax was introduced to compensate for loss of state revenue from the monopoly (FAO, 1986, p.47). This tax recently amounted to about 50% of the cost-insurance-freight (c.i.f.) price (own calculation based on EC, 1991; FAO, 1986). Hence banana retail prices in Italy are the highest in Europe (see Table 5 below).

In March 1991 the consumption tax was abolished irrespective of the source of supply. The effects of this could not be considered in this study.

Quotas are set up in order to protect Italy's former colony Somalia, although its share in Italian imports has declined and is now at 11.3% (1990). Another 5.6% is delivered by the Windward Islands, but the bulk of imports is purchased from dollar suppliers (83%). In July 1989 the quota for non-traditional supplies was increased by 20%, ie from 270,000 to 320,000 t.

Several Italian companies as well as the TNCs handle the traded amounts.

United Kingdom: The British government feels itself committed to support Commonwealth Caribbean suppliers and protect their high-cost producers (see Ch.3) against Latin American competitors.

The Banana Trade Advisory Committee (BTAC) provides a forum in which the British

market situation is discussed. It consists of representatives from the three major importing companies (Geest, Fyffes, and Jamaica Producers Marketing Company), two growers marketing organisations, and the UK Ministry of Agriculture, Fisheries and Food (FAO, 1986, p.50).

On the basis of BTAC proposals import licenses for dollar bananas are issued to the importing companies if preferential supplies fall short of demand requirements. In 1990 dollar bananas made up about 12% of British imports, traditional suppliers accounted for 58.6% (Windward Islands), 15.1% (Jamaica), 5.7% (Belize), and 6.6% (Surinam; Eurostat, 1990).

Import restrictions have been moderated in recent years in order to lower the market dependence on traditional suppliers. The aim is to gradually increase available supplies in the market. Hence a guaranteed minimum quota for dollar bananas was introduced in 1990 at 33,560 t.

Greece, Portugal, Spain: These countries were traditionally only supplied by domestic sources. This still holds true for Spain, where the Canary Islands supply total demand. Under Article 4(2)(b) of Protocol 2 attached to the Act of Accession, "until the setting up of a common organisation of the market" in bananas, Spain is permitted to regulate its domestic market to give preference to Canary Island produce (Swinbank, 1987, p.6). Imports from Madeira are not sufficient to meet Portuguese demand, and a limited amount of dollar bananas is imported under license.

Greece received bananas until 1988 exclusively from Crete. Since then due to a European Court rule banana imports have to be admitted, yet still under restrictions (Matthews, 1992, p.4).

These very different import regimes among EC members can only work, because by applying Art. 115 of the Treaty of Rome member states can restrict re-exports within the Community. Otherwise cheap dollar bananas would swamp the quota protected markets via Germany and the countries mentioned in a).

The consequences of this fragmented market structure are well illustrated in Table 5 by the differences in c.i.f. and retail prices across the EC.

These price differentials are partly caused by different levels of Value-Added Tax (VAT) on food products within the EC (between 0% in the UK and 25% in Denmark) which are due to be harmonised at least within a certain range in 1993.

These differences are clearly not consistent with the idea of the Single European Market in 1993 the implications of which are discussed in Chapter 4.

Table 5: Average cif and retail prices of bananas in various countries in 1989 (US\$/t)

	CIF	Retail
USA	380.6	968
Netherlands	412.5	1375
Italy	465.3	2156
Germany	481.8	1331
Portugal	537.9	1240
France	651.2	1738
UK	699.6	1727
Spain	819.5	1540

Source: EC, 1991, p.15.

"Touris, white man, wipin his face,
 Met me in Golden Grove market place.
 He looked at m'ol' clothes brown with stain,
 An soaked right through wid the Portlan rain,
 He cas his eye, turned up his nose,
 He says, 'You're a beggar man, I suppose?'
 He says, 'Boy get some occupation,
 Be of some value for your nation.'
 I said, 'By God and dis big right han,
 You mus recognise a banana man.'

(Evan Jones, The Song of the Banana Man)

3 The Situation of Traditional Suppliers

3.1. Supply Characteristics

Before looking at the role of the banana sector within the economies of exporting countries, some specific features of banana production shall be described.

The banana plant is a quick growing perennial of the tropics and subtropics with a maturation period of only 9-12 months. It can be grown in a wide range of soils, but good drainage is required and at least 25 mm per week of rainfall (2000-2500 mm per year) for satisfactory growth (Thomson, 1987, p.46). Otherwise irrigation has to be provided which increases production costs.

Although banana plantations can be severely damaged by hurricanes and droughts, they recover quickly unlike other perennial crops (Thomas, 1989, p.4). Yields can be as high as 70t per hectare per year (FAO, 1986, p.23). This requires high application of mineral fertilizer (especially potash) and intensive disease control. Bananas suffer from several fungal and bacterial diseases as well as nematodes. Despite the introduction of varieties with increased resistance, disease control makes up more than 30% of per hectare costs of production (Simmonds, 1987, p.418).

High use of chemical inputs as well as extension of banana plantations into less suitable areas (eg tropical forest in Costa Rica or steep slopes in the Windward Islands) have raised environmental concerns (Süddeutsche Zeitung, 25.07.92; Thomas, 1989, p.15).

The banana is one of the most labour intensive of all crops requiring 220-370 man days per hectare and year (Windwards) compared to 100-120 for sugar (Philippines), about 100 for tobacco and 26 for coffee (Tanzania). Labour input is fairly even throughout the year (Thomas, 1989, p.12).

Thus banana production can be an important source of employment, eg in densely

populated, land-scarce island economies. It must be admitted, though, that unskilled work on banana fields is unattractive and among the lowest paid in some exporting countries (Thomas, 1989, p.13).

As mentioned above the virtual absence of seasonality provides producers with a stable year-round income. Nevertheless production as a whole is heavily dependent on a well-organised and highly integrated marketing system. A well developed infrastructure is a prerequisite not only for getting the harvested bananas to the port but also for providing farmers continuously with the required inputs. A lack of these facilities causes a loss in competitiveness compared to other exporting countries.

Perishability of the fruit and sensitivity to physical damage involve a big risk for the producer. In order to protect the banana bunches from insects they are sheathed with plastic sacks while still growing. Extreme carefulness in handling the harvested bananas and, as a consequence, low fruit rejection rates at the port are key factors for success in the final stages of the production process (Thomson, 1987, p.50).

3.2. Cost of Production and Competitiveness

The variable costs of banana production up to the f.o.b. stage in exporting countries can be divided in three main sections: costs up to harvest; packaging and transport; export tax and loading.

Costs up to harvest in a Central American plantation mainly consist of disease control (30%), irrigation - if necessary (13%), fruit protection (12%), drainage (10%), fertiliser (8.5%) and several minor items (Simmonds, 1987, p.418).

Whereas these components are assumed to be similar in the majority of banana exporting countries, there are some other factors decisively determining the competitive position in the world market.

Weather conditions: Many banana exporting countries are prone to hazardous weather conditions. The Caribbean islands and Central America are regularly struck by severe hurricanes, in Ecuador thousands of hectares were taken out of production by floods in 1983, and the African producers in some years suffer from droughts (FAO, 1986). It appears that smaller countries like the Caribbean islands suffer relatively more from hurricanes, because such events usually destroy a high percentage of the countries' total crop, whereas in bigger countries only certain regions are affected, which can be compensated for on a national level (FAO, 1990, 38-39).

Terrain and farm size: In countries like the Windward Islands or the French DOM bananas are grown on rugged terrain mostly on small farms. Farms with less than 5 ha account for more than 90% of all banana growing farms (FAO, 1986, p.27). The average farm size is about 0.8 ha in the Windwards. In contrast to this farm sizes in Ecuador and Colombia average out at 23.4 ha and 86.6 ha respectively (see Table 6).

Table 6: Average yields and farm sizes in selected banana exporting countries (1984)

	Yield (t/ha)	Farm size (ha)
Panama	48.8	
Guatemala	47.7	
Honduras	40.7	
Colombia	40.6	86.6
Costa Rica	39.0	
Ecuador	19.6	23.4
Windward Isl.	10.9	0.8
Côte d'Ivoire	14.0	
Cameroon	17.8	
Philippines	37.5	

Source: FAO, 1986.

Yields: Natural conditions and scale of operations combined with different levels of efficiency in marketing and distribution result in very different levels of exportable yields among banana exporters as described in Table 6. This is one of the key factors determining profitability of banana production.

Labour costs: Due to high labour intensiveness (see 3.1.) this is another very important factor. Banana producers are subject to very different minimum wage legislations in different countries. FAO (1986, p.24) states a minimum wage of US\$ 3.65 per day in Honduras in 1986. In a comparison of production costs per unit in 1988 between Ecuador and Guadeloupe average daily wages of US\$ 2.12 and US\$ 53.16, respectively, are quoted (EC, 1991, p.25-29). This is a ratio of 1 to 25. The same study concludes that overall production costs at a yield level of 33t/ha are in Guadeloupe 9 times higher than in Ecuador. Share of labour costs in total costs per unit is 50% in Guadeloupe and 8% in Ecuador. It remains unclear, though, how important wages for hired labour are on very small farms where usually family labour is predominant.

Exchange rate stability: Several countries in Central and South America were able to increase the competitiveness of their bananas through currency devaluation (eg Ecuador, Costa Rica, Colombia) in the mid 1980s, the Eastern Caribbean Dollar (EC\$) - the Windward Islands' currency - has been pegged to the US\$ since 1976. Hence, when the US\$ appreciated considerably between 1980 and 1985, the Windward Islands' banana revenue per unit dropped due to the weakness of the pound sterling (LAB, 1987, p.55). This trend has reversed since 1986 with the depreciation of the US\$ (in terms of US\$/ECU exchange rate).

The countries of the African Franc zone, ie Côte d'Ivoire and Cameroon, whose currency, the franc-CFA⁶, is pegged to the French Franc (FF), and the French DOM using the FF itself were probably not effected by the US\$ fluctuations, since they almost exclusively deliver to the protected French market.

Thus it is clear that currency fluctuations and monetary policies in DC affect banana exporters in different ways.

The factors mentioned in this section all contribute to the current situation on the European banana market where Latin American exporters are much more competitive than the "traditional" ACP and EC producers. Even the 20% CET which is imposed on dollar bananas does not prevent them from being on average 20% cheaper compared to fruits from Martinique or Côte d'Ivoire, 30% compared to the Windwards and even 35% compared to the Canary Islands. The range of average c.i.f. (EC) prices in 1989 for different exporters - with and without tariff - is shown in Table 7.

⁶Communauté Financière Africaine, formerly "Franc des Colonies Françaises d'Afrique"

Table 7: Average cif prices of bananas received by exporting countries in 1989, with and without CET (US\$/t)

	cif	+20% CET
Nicaragua	374	449
Colombia	427	513
Costa Rica	428	514
Somalia	440	440
Ecuador	452	542
Guatemala	453	543
Honduras	474	569
Panama	486	583
Jamaica	559	559
Average EC cif	565	
Surinam	579	579
Cameroon	591	591
Belize	618	618
Guadeloupe	635	635
Martinique	663	663
Côte d'Ivoire	671	671
St. Vincent	774	774
Dominica	778	778
St. Lucia	794	794
Canary Islands	821	821
Madeira	839	839

Source: EC, 1991, p.11.

But the open banana market is not only highly competitive in terms of prices, quality standards are also very high in the more liberal markets of the EC. Quality of bananas is usually measured in terms of appearance, shelf-life and consistency of properties from box to box and shipment to shipment. By these criteria, dollar bananas are preferred to those from traditional sources (FAO, 1991, p.5). This is one reason, why the German tariff quota was continuously extended over the last decades. Apart from quantitative constraints ACP and EC suppliers were not able to meet quality standards required by German importers.

It appears that the traditional banana suppliers are comparatively disadvantaged for producing this commodity. Nevertheless some of them are heavily dependent on bananas which will be seen in the next section and prospects for alternatives and diversification are gloomy in some instances.

3.3. Dependence on Bananas

The dependence on a single crop in exporting countries operates at different levels: national, sectoral and household, and involves different problems - dependence on others and dependence for income, employment, credit, markets, technology or inputs (Thomas, 1989a, p.16).

On the national level dependence can be well illustrated by the share of a single commodity in total export earnings of a country. This is done for bananas in Table 8 (Column A).

Table 8: Dependence on banana exports in various countries

	A	B	C
EC			
Guadeloupe	60.0	98.0	4.0
Martinique	49.0	99.9	7.0
Madeira	33.0	100.0	5.2
Canary Isl.	20.0	100.0	2.0
ACP			
Dominica	69.3	97.0	32.1
St.Lucia	59.1	98.1	36.5
St.Vincent	42.2	100.0	24.9
Somalia	20.0	67.5	1.0
Grenada	16.6	98.5	3.6
Belize		4.2	95.6
Côte d'Ivoire	4.1	99.7	0.3
Surinam	4.0	100.0	0.9
Jamaica	2.3	100.0	2.6
Cameroon	1.1	97.2	
Dollar area			
Honduras	36.3	22.9	
Panama	20.0	39.2	
Costa Rica	19.7	25.6	
Ecuador	13.6	19.3	
Guatemala	6.9	13.5	
Colombia	5.2	30.7	

A: Share of banana exports in total exports (1988), %

B: Share of banana exports to EC in total banana exports (1985-87), %

C: Share of banana production in GDP (1988), %

Sources: EC, 1991, p.20,36; Eurostat, 1990.

The importance of bananas for national income of traditional suppliers is also outlined in terms of share in total GDP (Table 8, Column C).

Dependence on one or few crops involves two major types of risk, production and market risks.

Production risks mainly occur on the farm level through diseases, pests or adverse weather. Some crops are more prone to production risks than others (Thomas, 1989b, p.4-5). In banana production these risks seem to prevail in nearly all producing countries (see 3.2.), although, as already mentioned, bananas are distinct by their quick recovery.

Equally or even more important are market risks. These may be caused by price fluctuations, policy changes or company decisions. These changes have different impacts on traditional suppliers and dollar banana exporters.

Although countries like Honduras, Costa Rica, Panama, or Ecuador are fairly dependent on their banana exports (see Table 8), relative stability of world market prices guarantees relatively stable export earnings. In these countries all of the big three TNCs have a share in the market in addition to independent export companies in some cases (see 2.2.). There is fierce competition between these companies and exporters are not solely dependent on decisions of either one of them. This is in contrast to the Windward Islands, where Geest handles 100% of banana exports and takes a monopsonistic position protected by the UK licensing policy.

Suppliers of the French market are yet another case, since French companies dominate the marketing chain.

More important with respect to the policy analysis in the following chapters is the dependence of exporters on one or few importing *countries*, especially the EC. Table 8 (Column B) shows the importance of the European market for different suppliers.

Although so far the traditional suppliers were guaranteed high and stable prices and hence export earnings, they are extremely vulnerable to policy changes in the EC which are likely to happen due to the completion of the Single European Market (Thomas, 1989b, p.5-6).

One way of reducing this high level of market risk is by engaging in diversification strategies. As will be outlined in the next sections, alternatives to banana production are rare in some countries. Although the small island economies are comparatively disadvantaged in terms of production costs, nevertheless their special topographical (rugged terrain) and social conditions (dense population) make bananas an ideal source

of employment and agricultural land use (Thomas, 1989a, p.17).

3.4. Economic Background and Prospects

3.4.1. The EC Overseas Territories

The European banana producing regions are the French DOM, the Canary Islands, Madeira, and Crete. All these regions are fully integrated in the EC.

Within the CAP the EC overseas territories are eligible for assistance under the European Regional Development Fund (ERDF), the European Agricultural Guidance and Guarantee Fund (EAGGF), and the European Social Fund (ESF; Sutton, 1991, p.118). These financial resources available for EC banana producing regions must be kept in mind when comparing their situation and implications of the SEM with those of ACP suppliers.

The French DOM: Martinique and Guadeloupe each have a population of about 330,000. The economies are characterised by high transfer payments from the French government. These transfer payments - channelled through public sector jobs, investment in infrastructure and welfare payments - support two-thirds of GNP in the DOM. GNP per head in 1985 was about US\$ 3200 in Guadeloupe and US\$ 4200 in Martinique (Hintjens, 1991, p.46-47). Consequently, as Sutton (1991, p.42) states,

"by Eastern Caribbean standards, the medical services, wages and welfare provisions available in the DOM are now excellent. People from neighbouring islands [...] come in large numbers to receive medical treatment, find seasonal work [...]. However, within the DOM themselves the standard of comparison is no longer with the rest of the Caribbean, but with the rest of France."

The reverse side of these achievements is felt in high levels of unemployment (about 30%) and exports continuing to decline relative to imports (Hintjens, 1991, p.46).

One aspect important to the banana sector is the French minimum wage legislation - as mentioned earlier - which rises labour costs well in excess of the levels of their competitors (see 3.2.).

The French DOM share the same disadvantageous production conditions with other Caribbean banana exporters, ie small average farm size, rugged terrain, and frequent hurricanes. Nevertheless banana production and exports are the main agricultural economic activity in both islands (FAO, 1986, p.28-29).

Since the DOM deliver bananas almost exclusively to France, producers are closely linked with the CIB, the French banana marketing committee. Growers' associations constitute the Comité Economique Agricole Bananier (CEAB) which negotiates freight contracts with the shipping company, Compagnie General Maritime (CGM). The fruit remains the property of the grower until it is sold to ripeners (FAO, 1986, p.29).

Bananas contribute considerably to total exports, yet their share in total GDP is much lower (see Table 8).

The Canary Islands with a population of 1.6 million are characterised by a predominant share of GDP produced in the tourism industry, ie 74.6% in 1985. GDP per head and year is currently estimated at 70% of the average of Spain, ie about US\$ 7400 in 1990 (EC, 1988; The Economist, 11.07.92, p.22).

Agricultural activities concentrate on tomatoes, potatoes, onions, and bananas, the latter making up 41% of total production. Bananas contribute about 20% to total exports and 2% to GDP (see Table 8).

Similar to the French DOM, the Canary Islands suffer from a high unemployment rate.

There is little information available to this author about the situation of banana producers in Madeira and Crete. But it appears that economic conditions in these islands correspond to the Canaries, since

"the banana plantations [in Madeira] are being increasingly crowded out by encroaching urbanization, partly due to tourism" (International Fruit World, 3-1991, p.129).

In outlining their case for special treatment the European producers of bananas emphasise the dependence of many of their local economies on the banana industry and the resultant linkage with the economic and social cohesion of their regions. For this reason - and socio-economic cohesion in the EC's outlying regions is something the Commission is seeking to promote - they believe they are entitled to a certain level of protection which other EC productions already are enjoying (International Fruit World, 3-1991, p.129-130).

3.4.2. The ACP Suppliers

The ACP group of African, Pacific, and Caribbean states are linked to the EC through the Lomé convention, named after the capital of Togo where it was first signed in 1975.

The ACP group evolved from EC countries' former colonies - the so-called Associated African States and Madagascar (AASM, see Treaty of Rome, Annex IV) - which were guaranteed special treatment by the EC under the first and second Yaoundé conventions (1963 and 1969), when they became independent. When the UK joined the Community in 1973, the status of the Commonwealth countries had to be renegotiated, since they asked for favourable conditions similar to those granted to the former French, Belgian, and Italian colonies. Subsequently the ACP group was founded (Koester, Herrmann, 1987, p.1-3).

The Lomé I convention was signed between the European Nine and 46 ACP states in 1975. Since then the number of ACP members has increased up to 69 in the latest Lomé IV convention, signed in December 1989 and valid for 10 years (Brüne, 1990, p.196). Under this convention exports from ACP countries to the EC are duty-free, and an export earning stabilisation scheme (STABEX) as well as industrial, financial, and technical cooperation are provided (Koester, Herrmann, 1987, p.3).

A special protocol on bananas is added to the convention (Protocol 5 to the IV. Convention of Lomé, see Appendix 3) in which the EC makes the commitment that

"In respect of its banana exports to the Community markets, no ACP state shall be placed, as regards access to its traditional markets and its advantages on those markets, in a less favourable situation than in the past or at present" (Article 1).

The consequences of this clause, as far as the completion of the SEM is concerned, are discussed in Chapter 4.

The banana exporting countries within the ACP group divide in two regional groups:

- the Caribbean consist of the Windward Islands, Jamaica, Belize, and Surinam; all of them almost exclusively supply to the UK market

- the African exporters are Côte d'Ivoire, Cameroon, and Somalia; the former two supply mainly to France, Somalia supplies to Italy, Greece, and the Near East.

In terms of quantities exported to the EC the Windward Islands are the most important, followed by Côte d'Ivoire, Somalia, Cameroon, Jamaica, and the others (see Table 1).

The Windward Islands: The four independent island states of Dominica, Grenada, St.Lucia, and St.Vincent and the Grenadines are usually treated as a group with their

common historical background and joint organisation to assist banana production and exports, the Windward Islands Banana Growers' Association, WINBAN (FAO, 1986, p.26).

Population on the islands is between 80,000 (Dominica) and 130,000 (St.Lucia). GDP per head in 1989 was about US\$ 1300 (IMF, 1991).

Protected under the Lomé banana protocol, production and export of bananas have become the single most important economic activity in the Windwards. On the other hand, performance of "new" export commodities has been very disappointing (Stevens, 1988, p.3). Only in Grenada cocoa and nutmeg production are more important than bananas.

There are three principle directions in which to improve the present economic situation.

a) Improving the performance of the banana sector:

Banana exports have steadily increased over the last decades, albeit to some degree through expansion of the area planted and not only through yield increase. More emphasis has to be put on productivity improvement, eg through irrigation.

Quality has been improved through the introduction of field packing in the 1980s, but it remains uncertain how Windward bananas will be able to compete with dollar fruits, since the latter were until recently hardly available to consumers in the UK (Leonce, 1990, p.98).

b) Diversification of agriculture into other crops:

Introducing "new" agricultural crops creates the problem of efficient marketing, due to the small scale of production. Hence joint marketing is a key factor in agricultural diversification programmes (Campbell, 1990, p.162).

c) Development of other sectors:

The biggest hope is raised by the tourism industry, which has emerged in recent years as an earner of foreign exchange, but also as the source of a significant number of jobs. There is still large potential to expand this sector, provided that the local population is willing to participate and support this development more than it has done so far (World Bank, 1985a, p.19; 1985b, p.20).

Jamaica: This country has a population of 2.4 million with a GDP per head of US\$ 1300 in 1989 (IMF, 1991). Once one of the biggest banana exporters in the world, this sector has declined since the late 1960s. Only recently Jamaica began to re-establish itself as a significant banana supplier, although these efforts were disrupted by a hurricane in

1988 (FAO, 1991/3).

All bananas are supplied to the UK and handled by Fyffes and Jamaica Producers on a one-third, two-thirds split per shipment. They remain the property of the producers until their arrival at the port of disembarkation (FAO, 1986, p.50).

Jamaica is less dependent on bananas, since of all exports to the EC (in 1982-1986) Alumina accounted for 46%, sugar for 29% and bananas only for 7% (Sutton, 1991, p.101). There has also been a growth in exports of clothing to the USA in recent years (Stevens, 1991, p.279).

Côte d'Ivoire has a population of 10.3 million with a per capita GDP of US\$ 974 in 1989 (IMF, 1991). Banana exports have declined during the seventies from a peak in 1972, but stabilised in the 1980s at the present level (see Table 1).

Producers are well in the French marketing system for bananas - as described in section 2.3. - through their "Coopérative de Producteurs pour la Commercialization des Fruits et Légume de la Côte d'Ivoire" (COFRUITEL).

Bananas contribute only 4.1% to total export earnings of the country (see Table 8).

Cameroon has similar features in terms of population (11 million), GDP per head (US\$ 1124) and significance of the banana sector (1.1% of total exports). Main export crops of this country are cocoa, coffee, cotton, and rubber. Palm oil, tea, and bananas are less important (FAO, 1991 ??).

Banana exports have been almost stable during the last two decades. The Organization Camerounaise de la Banane (OCB) is a public corporation organising and monitoring production, marketing, and credit facilities as well as representing growers on the French market (FAO, 1986, p.34).

A common feature of Cameroon and Côte d'Ivoire is their membership in the African franc zone. Members have the franc-CFA as their common currency and enjoy unlimited monetary and capital traffic among France, Monaco, and 14 African states.

Economic and development benefits may well arise from stability of the franc-CFA ensured by the French treasury, but on the other hand the franc zone engendered heavy dependence on French business and provided an opportunity for undesired capital flight, especially in times of crisis (Brüne, 1990, p.200).

Somalia is certainly one of the poorest countries in the world with a GDP per head between US\$ 150 and 250 (depending on the source of data) and a current population of about 7.3 million. It is the only traditional banana exporter delivering significant

amounts to non-EC countries (see Table 8). This is due to competitive prices (see Table 7) and proximity to the growing markets in the Near East. Next to livestock production the banana sector is the second most important contributing 20% to total exports (Table 8; Laitin, Samatar, 1987, p.102).

Ecological conditions are excellent for banana production in Somalia (Ledemé, 1983, p.74), but the main problem is political instability. Currently there is complete political disruption and it is difficult to make assumptions about future prospects (Financial Times, 03.08.92).

"What makes God laugh?
- Tell him about your future plans!"

(Woody Allen)

4 The Single European Market 1993

4.1. Economic Effects of Current Policies

Having outlined the different import regimes for bananas in EC countries, their economic effects shall now be analyzed using a graphical representation. The qualitative analysis in this chapter will be the basis for the quantification of the welfare effects in Chapter 5.

Welfare criteria for policy choice are based on the compensation principle developed by Kaldor. According to the Kaldor compensation test, it is said that policy A is preferred to policy B if the gains of gainers are more than sufficient to permit the losers (from a shift from B to A) to be fully compensated. In applying this principle it is not necessary that the losers should actually be compensated, only that they *could* be (Colman, Young, 1989, p.209).

Economic gains and losses from different policies shall be distinguished whether they accrue to consumers, producers, taxpayers, or in terms of quota rents. Monetary measures of these gains and losses can be presented to policy makers and interested parties to enable them to form judgements about the balance of benefits and costs from a particular policy change. It is not the economist's job to make this judgement for society, it is ultimately the politician's job (Colman, Young, 1989, p.210).

Although there are theoretical weaknesses in measuring consumer and producer surpluses, in most cases they are accepted as being close approximations of the underlying welfare values (Colman, Young, 1989, p.211).

Consumer surplus, as defined by Marshall (1931, p.124), is the

"excess of the price which he (the consumer) would be willing to pay for the thing rather than go without it, over that which he actually does pay".

This can graphically be defined as the area under the Marshallian demand curve and above the price line. The welfare of a price change (eg caused by a policy change) is measured as the *change* in consumer surplus. It can be shown that, if the income effect

of a price change is small, the Marshallian consumer surplus is a close approximation to the theoretically preferable values of both the Hicksian compensating and equivalent variation (Colman, Young, 1989, p.212-214).

In the case of bananas this is given, since usually only a small part of consumers' income is spent on bananas.

It is also accepted that the "triangle" under the market demand curve is equal to the aggregated individual consumer surpluses; "aggregation errors" are assumed to be small in relation to actual measurement errors (Colman, Young, 1989, p.214).

Producer surplus as a counterpart to the concept of consumers' excess gains from transactions is more problematic to interpret. Nevertheless, if certain conditions are met, ie perfect competition in the industry and perfectly elastic supply of variable input factors, and if producer welfare effects are measured only due to changes in output or variable input prices, then a simple Marshallian approach can be adopted.

Graphically the producer surplus is the area above the supply curve and under the price line (Colman, Young, 1989, p.215).

There is another complication, since under perfect competition there are supposed to accrue no extra profits to firms in the long run. However, it can be argued that the market supply curve, being the marginal cost curve of the industry, represents in each point the production costs of the marginal producer. The market price then is just sufficient to keep the marginal firm in production. At this price all producers "further down" the supply curve are obtaining returns in excess of their marginal costs, so-called economic rents (Colman, Young, 1989, p.216-217). The welfare effect of a policy change again is measured as the *change* in producer surplus.

Looking at the banana market and the competitiveness of different exporters (see 3.2.) it is reasonable to assume an upward sloping supply curve. However, the assumption of perfect competition is clearly violated in this case (see 2.2.).

Taxpayers' gains and losses are measured in terms of government revenue from import taxes on bananas.

Quota rents accrue to importing companies in markets where imports from various countries are subject to licenses.

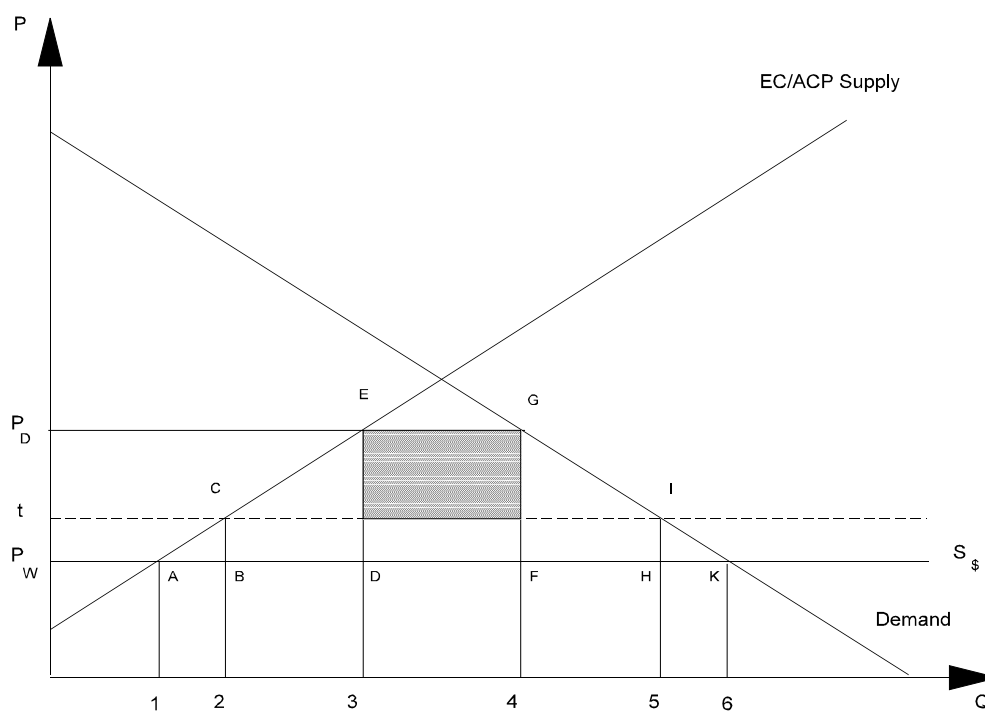


Figure 3: The European Banana Market
Source: Matthews, 1992, p.6.

The economic consequences of current banana import policies in EC countries are shown in Figure 3, where

- P_D = domestic price
- P_w = world market price
- t = tariff
- Q = quantity
- $S_{\$}$ = dollar banana supply.

For simplicity the supply of dollar bananas is drawn as perfectly elastic at the current world market price P_w ⁷.

The demand curve represents a national market.

The German market as the most liberal one represents a free trade situation. Demand

⁷This assumption is relaxed in the quantitative analysis in Chapter 5.

occurs at Q_6 , exports from preferential suppliers are Q_1 and the level of dollar banana imports is Q_1Q_6 .

In the tariff protected markets, as mentioned in section 2.3.a), the CET of 20% is imposed in dollar bananas. Demand occurs at Q_5 , preferential supplies are at Q_2 and dollar imports are Q_2Q_5 . Tariff revenues accrue to these governments which are represented by the area BHIC.

In the remaining markets dollar banana imports are restricted by a quota eg Q_3Q_4 . Thus the domestic price is increased to P_D which enables preferential suppliers to export Q_3 and reduces demand to Q_4 . On these markets quota rents are earned equal to the shaded area, ie the difference between the domestic price P_D and the acquisition price for dollar bananas ($P_w + t$) times the volume of the quota. These rents accrue to importing companies rather than to dollar exporting countries (Matthews, 1992, p.5-6).

The net effects of current policies in EC countries compared to a free trade situation can be described as follows:

In tariff protected markets consumer surplus is reduced by the area P_wKIt , producer surplus of preferential suppliers is increased by P_wACt and taxpayers gain BHIC. Deadweight losses occur as represented by the triangles ABC and HKI.

In quota protected markets consumers lose $P_D P_w KG$, preferential suppliers gain $P_D P_w AE$, and tariff revenue is DFGE minus the shaded area which is a quota rent as already mentioned. Deadweight losses in these markets are ADE and GFK.

With opposite signs, these areas represent the potential welfare effects from a move towards free trade in the whole EC. However, since the EC is the biggest importer on the world market, the small-country case does not apply and the world market price is likely to rise as EC demand increases.

4.2. Commitments of the EC

As FAO (1991/5, p.3) points out, the completion of the SEM 1993 is currently the dominant issue for the international banana market.

The Commission of the EC faces conflicting aims while working out proposals for a banana import regime after 1992. It appears that the EC executive has to "square the circle" in order to meet its commitments to different groups.

First, a single post-1992 regime has to be created for the highly fragmented European banana market. Article 115 of the Treaty of Rome which has been widely used to restrict intra-Community trade will become inoperative, if not illegal under the Single European Act, because frontiers will cease to exist. One obvious way to avoid confronting the problem would be to grant derogations allowing UK, France, and Italy to continue to use Art. 115 in respect of bananas only for a specified period of time. However, it is likely that the other member states would object to making bananas the first post-1992 exception to the basic principle of free circulation (Stevens, 1990, p.72).

Apart from that the system would be subject to legal challenge which might well come in a case brought to the European Court by one or several of the banana importing TNCs (Davenport, Page, 1991, p.50).

Second, as mentioned in section 3.4.2., the EC has committed itself in the Lomé IV convention so that no ACP banana exporter should be worse off due to post-1992 trade regulations. In a joint declaration relating to the banana protocol in Lomé IV it is stated that this commitment

"does not prevent the Community from establishing common rules for bananas, in full consultation with the ACP".

However,

"Should substantial modifications in this sector [...] take place in the Community [...] it undertakes to consult with the traditional suppliers of bananas [...] with a view to safeguarding all legitimate interests of the Parties to this Protocol" (ACP-EEC Council of Ministers, 1992, p.295).

The protocol also speaks of "improving the conditions under which the ACP States' bananas are produced and marketed". Thus any opening up of the Community market is likely to be accompanied by measures to

- help the ACP producer countries to reduce costs and become more competitive
- help finance diversification into other crops or non-agricultural activities
- compensate directly to some extent the governments of the producing countries for any shortfall in earnings on banana exports (Davenport, Page, 1991, p.49).

Third, the EC's future banana import regime has to win acceptance in the GATT. The basic principle of the GATT is to convert all quantitative restrictions into tariff equivalents and reduce these tariffs gradually over time. At Punta del Este, the

Community committed itself to "the fullest possible liberalisation of trade in tropical products". However, bananas are excluded from the Tropical Product Negotiating Group's ambit, as they were from the EC's mid-term offer in the Uruguay round (Davenport, Page, 1991, p.54; Stevens, 1991, p.61-62).

To the opinion of FAO (1991/7) liberalisation of the markets would still be the most effective way to enhance growth in world banana trade and the Uruguay round is seen as an opportunity for mutually satisfactory solutions.

The GATT commitments are important for the EC's choice of policy measures, since the current tariff on dollar bananas is bound under GATT regulations and any rise in the average tariff rate is prevented. If these regulations would be violated or new trade restrictions (eg quotas) were introduced by the EC, the dollar banana exporter could demand a GATT ruling and

"it would be embarrassing for the Community to be put into the dock during or immediately after the Uruguay round" (Davenport, Page, 1991, p.49).

Fourth, the EC is committed to ensure the delivery of supplies to consumers at reasonable prices (Art.39, Treaty of Rome, 1957). This also applies to bananas and hence the Consumers in the European Community Group (CECG) calls for a

"single market in bananas but no EC banana regime involving price support. Uneconomic EC production should not be subsidised by consumers or taxpayers" (CECG, 1990, p.3).

Fifth, the EC has to consider the interests of third countries, in this case the Latin American banana exporters, to make sure that it does not protect one group of LDCs at the expense of others. The dollar exporters point out that bananas are an important export commodity and source of rural employment for them. Looking at Germany, they require that restrictions should not be created in traditionally open markets just as formerly centrally planned countries are being liberalised (FAO, 1991/7).

4.3. Policy Options for a Future EC Banana Import Regime

A wide range of possible arrangements have been suggested for continuing to protect ACP and EC banana suppliers while respecting the principle of free circulation in the SEM. These extend from including bananas in the CAP, ie raise prices for preferential supplies through variable import levies (VIL) on dollar bananas, and quotas on Latin

American exporters to a free market with direct compensation payments to traditional suppliers (Davenport, Page, 1991, p.49).

If bananas were a homogeneous good, a global licensing arrangement would be a feasible policy option for the EC. This is not the case since there are significant quality and price differentials in various regions (see section 3.2.).

Five policy options are analyzed graphically in this section providing a framework for the quantitative assessment in the next chapter.

For simplicity again, in the graphical description the assumption is made that dollar banana supplies are perfectly elastic at current prices.

Free Trade: This means a liberal policy combined with direct compensation payments to the traditional suppliers. The welfare effects from a change from the current situation towards this option have already been analyzed in section 4.1. (see Figure 3).

Common External Tariff⁸: This would involve the abolition of all quantitative restrictions and imposing a CET throughout the EC. Since the overall tariff level is bound under GATT and Germany would be included, the tariff rate would need to be cut to roughly 14% across the Community (Davenport, Page, 1991, p.49). In this study, following Matthews (1992, p.11), the tariff is set at 20% and combined with direct payments to traditional suppliers.

Figure 3 shows that, compared to a liberal option, demand would decrease from Q_6 to Q_5 and so would dollar banana imports (from Q_1Q_6 to Q_2Q_5). Preferential suppliers would increase their exports from Q_1 to Q_2 (Matthews, 1992, p.11).

The latter would gain the area P_wACt , whereas EC consumers would lose P_wKIt . Government revenue would be raised in terms of taxes equal to the area $BHIC$. Deadweight losses would occur equal to the triangles ABC and HKI .

Deficiency Payments: Preferential suppliers would obtain the EC market price for their exports (equal to the world market price P_w), but the difference between this market price and a target price P_D would be made up through direct payments from the EC budget (see Figure 3). EC/ACP supplies would increase from Q_1 to Q_3 , at the expense of dollar imports which would be reduced to Q_3Q_6 (Matthews, 1992, p.12).

Preferential suppliers would gain the area P_wAEP_D , but EC taxpayers had to spend

⁸The remaining policy options are analyzed using free trade as the reference situation. However, in the quantitative analysis the status quo is chosen as a baseline for the calculation of welfare changes.

P_w DEP_D. Hence a deadweight loss would occur equal to ADE.

The level of the target price could be chosen eg as to make ACP/EC producers as a group as well off as they are at present (see section 5.3. below).

CAP-style Regime: Under this option a target price for traditional suppliers would be set at P_D (eg at the same level as in 4.3.3.) and a VIL would be imposed on dollar imports equal to the difference between P_D and the world market price P_w (see Figure 3). Demand would drop from Q_6 to Q_4 , likewise dollar imports from Q_1Q_6 to Q_3Q_4 . Preferential supplies would increase from Q_1 to Q_3 (Matthews, 1992, p.12). EC consumers would lose the area P_w KGP_D, whereas preferential suppliers would gain P_w AEP_D. The area DFGE would be government revenue through VIL. The triangles ADE and FKG are again the deadweight losses.

Quota on Dollar Bananas: If imports of dollar bananas were limited to below the free trade level, then the resulting shortage of supply in the EC market should in itself be sufficient to raise the price paid to preferential suppliers to P_D . Alternatively, a discriminating quota might be implemented through a system of linking imports of dollar bananas and EC/ACP fruit via licenses (Matthews, 1992, p.12).

At the time of this study the quota option seemed to be the favourite one of the EC Commission, since it was the key element in a proposal published on 7 April 1992 and being described - for some reason best known to the Commission itself - as the "least bad" one (Financial Times, 08.04.92).

Recently a quota level of 1.4 million t was announced, plus an annual growth factor of 3% (Süddeutsche Zeitung, 15.07.92).

If the quota for dollar banana imports was set at Q_3Q_4 in Figure 3, then prices would be maintained at the same level as under the CAP option. The two options would have effectively the same welfare effects, except that under the quota option the area DFGE now represents quota rents rather than taxpayers' revenue (Matthews, 1992, p.12).

However, some problems arise from a quota regime:

- the *initial quota size* would have an important impact on the economic effects of the regime as will be seen in section 5.3.
- the *growth factor* of the quota would determine to what extent increasing future demand would be met by the most efficient suppliers
- the *administration of the quota* would determine to whom the quota rents accrue. If quotas were established bilaterally for each dollar banana exporting country, the price in the Community would rise more than if they were established for all dollar

countries as a whole and these countries had to compete for market share. Anyway, if the licenses were given to exporting countries quota rents would accrue to them. If the licenses were auctioned the economic rent could be kept within the Community budget. In all other cases the importing TNCs would pocket the additional profits generated by the quotas (Davenport, Page, 1991, p.53-54).

The EC could also choose a combination of several options, eg combining a quota on dollar bananas with a CET. This possibility is not considered in this study, but could easily be implemented in the model described in the next chapter.

"All models are wrong, but some are useful."

(George Box)

5 Quantitative Analysis of Different Policy Options

In this chapter the welfare effects of different policy options described in section 4.3. will be analyzed quantitatively. A single-commodity, partial equilibrium model of the world banana market has been used for this purpose.

First, a review of similar studies in the literature will be given. Then the methodology will be discussed, followed by a description of the model structure. Finally the results of various simulation runs will be discussed.

5.1. Review of the Models in the Literature

Several studies on the world banana market have been conducted in recent years, focusing on possible effects of changes in the EC import regime. Three papers will be reviewed here with emphasis on the simulation models that were used to estimate the welfare effects of EC policy changes. The studies were undertaken by Davenport and Page (1991), Matthews (1992), and Borrell and Yang (1990).

Method: All studies use a single-commodity, partial equilibrium approach, the characteristics and shortfalls of which will be discussed in section 5.2.. In this type of comparative static equilibrium analysis two states of market equilibrium are being compared, before and after an external shock. In the case of the banana market the shock is induced by the changing EC policy, and new equilibrium prices and quantities are then generated in the simulation model.

Economic criteria used to evaluate different policy options are

- the percentage change in world market price, imported and exported quantities
- the change in producer surplus in exporting countries
- the change in consumer surplus, government revenue, and quota rents in importing countries.

All these measures are applied in the study by Matthews. Davenport and Page do not provide estimates of changes in producer and consumer surpluses. As an indicator for welfare change on the consumption side they use simply the change in per unit price (cif

EC), arguing that

"calculations of consumer surplus [...] require that the entire demand curve be specified - not merely the elasticity between the initial price and any new price. Comparing unit prices under different schemes is an adequate indicator of consumer gains and losses" (Davenport, Page, 1991, p.56).

Change in producer welfare is measured in terms of export revenue change. This assumes that all resources freed from banana production are lost to the economy. On the other hand, change in producer surplus assumes that all resources lost from banana production will be fully utilised elsewhere in the economies of the exporting countries. The real welfare change is likely to be somewhere between these two estimates (FAO, 1991/5, A1-A2).

Borrell and Yang do not distinguish between tariff revenue and quota rents, both are subsumed under "government revenue".

Parameters of the model are basically the underlying elasticity assumptions or estimates, and the price and quantity data of a chosen base period. All studies use different data sets and a comparison therefore provides a test of the sensitivity of the results, which will be done later in this chapter.

Elasticities of demand and supply are not estimated in these studies, instead they are taken from the literature or assumed. The authors are unanimous in the choice of the demand elasticity which is set at -0.4 (Borrell, Yang; Matthews) and -0.5 (Davenport, Page).

Supply elasticities are more difficult to obtain, since there are hardly any estimates available in the literature. Borrell and Yang quote an elasticity of 0.49 for Jamaica (Pollard and Graham, 1985) and Davenport and Page found an estimate of 1.73 in Valdes and Zietz (1980). For reasons mentioned in section 2.1. the supply responsiveness in banana production is assumed to be quite high.

Since alternative opportunities for preferential suppliers are relatively scarcer (see Chapter 4), their supply elasticity is set lower than for Latin American exporters.

Matthews uses elasticities of 2 for dollar exporters and 1 for ACP/EC countries. Borrell and Yang use numbers of 3 and 1, respectively. Davenport and Page assume infinitely elastic supply for dollar bananas and take 1.73 for preferential exporters.

One important point is analyzing the sensitivity of the elasticity assumptions, in order to prove their validity. Borrell and Yang provide three different scenarios using alternatively an elasticity of 1 for all suppliers as well as values of 1 for dollar exporters

and 0.5 for traditional exporters. Davenport and Page use alternatively an elasticity of 1.73 for all suppliers. Matthews does not change the assumptions.

Data sets on prices and quantities in the base period are different as far as the year and the sources are concerned.

An important additional assumption is the level of retail prices under a common EC market regime. Borrell and Yang assume retail banana prices to equate with those in Germany, since Germany already has a free market. In the Matthews study, marketing margins presently observed between import prices and retail prices in individual member countries are assumed to persist, reflecting continuing differences in internal distribution costs (FAO, 1991/5).

Policy options evaluated: The five policy options described in Chapter 4 are taken from Matthews' study. In addition he analyzes a global quota restriction on EC imports, but admits that

"there seems to be no merit to a global quota because no benefits accrue to preferred suppliers while EC consumers bear considerable costs" (Matthews, 1992, p.11-12).

Borrell and Yang assess a set of "liberal" policies which are all tariff based, eg a deficiency payment scheme or direct aid payments financed with tariff revenues, but they do not consider quantitative restrictions which are likely to be imposed by the EC (see 4.3.).

Davenport and Page (1991, p.50) argue that

"a CAP-type regime would be resisted as too costly, against the Uruguay Round commitment not to establish new barriers to trade"

and can therefore be dismissed. They investigate three main options: a tariff of 20% imposed on dollar bananas, Germany included, a deficiency payment scheme for ACP/EC bananas, and a quota system for dollar bananas. In addition they change the tariff level to 14% and simulate various combinations of the three main options.

Level of aggregation: An important point which is focused upon in this study is the effect of an EC policy change on *individual* traditional exporters. Only Borrell and Yang describe the welfare effects on a dis-aggregated, ie country level.

Davenport and Page distinguish "EC", "Caribbean" and "Other ACP" exporters, whereas Matthews treats all preferential suppliers as one group.

As will be seen in section 5.3., although the traditional suppliers as a group might gain or lose from certain policies, these effects are unevenly distributed within the group, since some of these exporters are more competitive than others.

5.2. Methodology

5.2.1. Comparative Static, Partial-Equilibrium Analysis

Traditionally the analysis of barriers to agricultural trade has been carried out using classical partial equilibrium (p.e.) models. The comparative advantages of p.e. analysis are its transparency and its simplicity (Davenport, 1988, p.23). A comprehensive overview of the alternative modelling approaches is given in Winters (1987).

One basic assumption in p.e. analysis is the absence of cross-price effects, ie prices of other goods are assumed to be fixed or have no effect on supply and demand of the good in question. However, in the case of bananas there are likely to be cross effects with other fruits on the demand side (see section 2.1.).

Prices are supposed to represent true social values, ie there are no externalities, which is not necessarily true for bananas, if environmental problems of production are considered (see section 3.1.).

The assumption of perfect competition may be violated in the presence of strong TNCs, as it is the case in the banana market.

In an assessment of two banana trade models FAO (1991/5, A2) points out the following limitations:

"bananas are considered to be of homogeneous quality; no recognition is given to the perishable nature of bananas and to the highly integrated distribution chain from farm to retail; transport costs are assumed to be independent of the volume of world trade, most likely an implausible assumption for banana trade."

One main drawback of comparative static analysis is the neglect of dynamic effects and adjustment costs, ie nothing can be said about the time path of adjustment of production and exports to a policy change (Davenport, 1988, p.24).

The models do not consider the impact of various policies on the *economies* of exporting countries, eg balance-of-payments or exchange rate effects. These are likely to be substantial, particularly in those small island states for which the banana sector represents the base of the economy.

Finally, policy options are not assessed according to other (non-economic) criteria such

as their administrative costs and the practical aspects of implementation (FAO, 1991/5, A2).

5.2.2. Structure of the Model

The model used in this study is adopted from Matthews (1992, p.13-14). It is a spreadsheet model providing the possibility of changing the initial parameters and choosing various policy options as described in Chapter 4. The model distinguishes on the import side between several EC countries and the Rest of the World Importers (ROWI), on the export side there are the dollar banana exporters as a group, the Windward Islands and Jamaica, the French DOM, the Canary Islands and Madeira, Côte d'Ivoire and Cameroon, Somalia, Other ACP countries (ie Belize and Surinam), and the Rest of the World Exporters (ROWE).

The model assumes that importing countries have no production and that exporting countries have no domestic consumption, ie there are only importers' demand functions and exporters' supply functions considered.

The model takes the following algebraic form. Let

- P_w = world market price = cif-EC price
- P_{Xj} = export price for exporter j
- P_{Ci} = retail price in importer i
- P_{Hi} = wholesale price in importer i
= $P_w * (1+t) + \text{quota rent}$
- t = EC tariff level
- Q_{Di} = quantity demanded in importer i
- Q_{Sj} = quantity supplied by exporter j
- MM_i = marketing margin in importer i
- n_i = elasticity of demand at retail for importer i
- ϵ_j = elasticity of supply with respect to P_w for exporter j
- a_i, b_j = constant terms.

Demand and supply functions for each country are written as constant-elasticity functions as follows:

$$(1) Q_{Di} = a_i * P_{Ci}^{n_i}$$

where $P_{Ci} = P_w + MM_i$ in Germany and ROWI markets

$$\begin{aligned}
&= P_w *(1+t) + MM_i \text{ in EC tariff-protected markets} \\
&= P_{Hi} + MM_i \text{ in EC quota-protected markets.}
\end{aligned}$$

$$(2) Q_{Sj} = b_j * P_{Xj}^{\epsilon_j}$$

where P_{Xj} = P_w for dollar exporters and ROWE
= $P_w *(1+t)$ for traditional suppliers to tariff-protected markets
= P_{Hi} for traditional suppliers to markets where dollar bananas are restricted by quota.

World market equilibrium is established by

$$(3) \quad \sum_i Q_{Di} = \sum_j Q_{Sj}$$

Using the initial data on prices, quantities, marketing margins, and elasticities, the constant terms can be calculated from the demand and supply functions.

The next step is to find the new equilibrium P_w after the policy change has been imposed. This is done with the Newton-Raphson iterative method which is described in Gardner (1987, p.73-79).

Having found the new P_w , the new export and import quantities can be derived from the supply and demand functions. Finally the changes in consumer and producer surpluses are calculated (see Tsakok, 1990, Chapter 6) as well as the changes in tariff revenues and quota rents.

5.3. Simulation Results

5.3.1. Parameters of the Model

The required data for the baseline scenario of the model are taken from the following sources.

Import and export quantities are 1990 data from Eurostat (1990) and EC (1991, p.36-37). It is assumed for simplicity that preferential suppliers only export to the EC market, except for Somalia where the existence of exports to the Middle East is recognised (Matthews, 1992, p.15).

Prices are 1989 data taken from Matthews (1992), expressed in US\$/t. Import and retail prices in importing countries are linked by marketing margins which are assumed to be fixed when running the model (see section 5.1. for a discussion). However, it turns out

that the difference between the highest (Italy) and the lowest retail price (Germany) in the base period is reduced by 46%⁹ under all simulated policy options simply due to the introduction of a *single* European import regime.

Concerning the supply elasticities this study follows Borrell and Yang (1990) in analyzing three different scenarios, in order to test for sensitivity of the results. The scenarios are:

- a) elasticity of supply for dollar exporters $\epsilon_{\$} = 3$, elasticity of supply for traditional exporters $\epsilon_{ACP} = 1$
- b) $\epsilon_{\$} = 1$, $\epsilon_{ACP} = 1$
- c) $\epsilon_{\$} = 1$, $\epsilon_{ACP} = 0.5$.

The demand elasticity is set at -0.4 for all importers as in Matthews (1992).

The policy options simulated in the model are those analyzed qualitatively in Chapter 4. In the tariff option a 20% tariff is imposed on dollar bananas.

In the deficiency payment option and the CAP-style option the target price is set at 882 US\$/t as to leave ACP/EC suppliers as a group as well off as at present. The same is applied in the quota option, where a quota level of 1.9 million t imposed on dollar bananas yields an export price of 882 US\$/t for traditional suppliers.

Thus the welfare effects of different policy options become comparable, as they all keep ACP/EC countries as a group at their present welfare level. In the free trade and tariff options direct compensation payments can be implemented for the same purpose.

A final policy option being simulated is a dollar quota of 1.4 million t according to the latest EC proposals (see section 4.3.).

5.3.2. Discussion of the Results

First of all, the model results appear to be not very sensitive to the chosen elasticities. This is illustrated in Table 9 in terms of the total world welfare effect in million US\$ due to different elasticity assumptions and policy options.

Table 9: Sensitivity analysis of model results (Total world welfare in million US\$)

$\epsilon_{\$}$:	3	1	1
ϵ_{ACP} :	1	1	0.5

⁹From 544 US\$/t to 295 US\$/t.

Free Trade	147.5	138.4	99.9
Tariff	133.0	124.7	87.5
Def.Pay.	54.3	53.4	50.6
CAP	-8.3	-8.6	-11.2
Quota (1.9 Mt)	-8.2	-8.5	-15.6
Quota (1.4 Mt)	-258.8	-265.9	-318.5

Source: Model calculations.

The policy options remain in the same order, and also the dis-aggregated results behave in a similar way. Hence in the following discussion only the first scenario is considered, ie $\epsilon_s = 3$ and $\epsilon_{ACP} = 1$.

Table 10 provides a detailed outline of the simulation results of different policy options.

It is obvious that the free trade option provides the best outcome, as far as resource allocation and hence total world welfare in the banana market is concerned.

The CAP-style and quota options rank at the lower end of the range, providing not even an improvement compared to the present situation.

The reverse order would be preferred by traditional suppliers who would gain most from the 1.4 million t quota.

Table 10: Results of policy simulation runs (Changes measured with respect to current situation)

	Free Trade	Tariff	Def.Pay.	CAP	Quota 1.9 Mt	Quota 1.4 Mt
Trade eff. %						
Pw change	2.9	1.9	0.9	-0.6	-0.6	-2.8
EC consumption	6.2	3.1	6.6	-3.5	-3.5	-8.4
ACP exports	-39.4	-28.0	1.2	1.2	1.2	27.9
Dollar exports	34.6	22.5	9.9	-6.4	-6.4	-31.0
Welfare (mill. \$)						
EC total		473.3	389.1	45.4	-2.3	-2570.9
Consumer surplus		765.7	421.5	803.1	-416.3	-415.9
Quota rents	-203.7	-203.7	-203.7	-203.7	502.6	659.2
Gov.Revenue	-88.7	171.3	-554.0	617.7	-88.7	-88.7
Lat.America	101.6	65.8	28.8	-18.4	-18.4	-88.1
ROWE	13.4	8.7	3.8	-2.4	-2.4	-11.6
Windwards	-106.1	-85.8	-18.0	-18.0	-18.0	64.2
French DOM	-72.6	-52.4	15.4	15.4	15.4	97.5
Ivory/Camer.	-31.0	-17.6	27.2	27.2	27.2	81.5

Canary Isl.	-139.0	-119.6	-55.0	-55.0	-55.0	23.4
Somalia	-9.8	-5.3	9.9	9.8	9.8	28.2
Other ACP	-2.9	2.4	20.0	20.0	20.0	41.4
ACP/EC	-361.5	-278.4	-0.5	-0.5	-0.6	336.4
World	147.5	133.0	54.3	-8.3	-8.2	-258.8

Source: Model calculations.

If, under the free trade and tariff options, ACP/EC producers would be fully compensated for their losses through direct payments from the EC budget, the net outcome for the EC would be nearly the same for both options¹⁰. Hence it can be argued that a tariff option would be easier to apply for the EC, since a large part of the compensation payments could be financed with tariff revenues. However, this would be at the expense of consumers who had to pay higher prices. It must be considered that usually the average taxpayer is better off than the average consumer.

Within the EC German consumers lose out due to price changes regardless which option is simulated, whereas most other countries gain substantially (except under the quota options). This is not outlined in Table 10.

As analyzed in Chapter 4, the outcome of the CAP-style regime and the quota of 1.9 million t is basically the same, except the government revenue from VIL under the CAP option shifts to a considerable quota rent (see Table 10).

Decreasing the quota level below 1.9 million t makes matters only worse, as far as EC consumers' welfare and dollar producers' welfare are concerned. Of course, traditional suppliers as well as importing companies who are able to pocket the quota rents would be quite happy with that. These "windfall profits" are the main drawback of quota regimes (Matthews, 1992, p.22). They are effectively financed by consumers through higher prices, which can hardly be consistent with general social policy aims.

In order to prove the consistency of these results with other studies, Table 11 gives an overview of the main results of the models discussed in section 5.1..

The main intention of this study is to analyze the welfare effects of future EC policies on traditional banana exporting countries on a dis-aggregated level. Therefore the

¹⁰To prove this subtract ACP/EC welfare change from total EC welfare change!

welfare effects given in Table 10 have been recalculated as per-head-of-population figures for each country or country group, and these have been set in relation to the GDP-per-head figures given in section 3.4.. The results are shown in Table 12.

Table 11: Comparison of different study results (Free Trade option)

	Borrell Yang	Davenport Page	Matthews	This study
Elasticities				
n	-0.4	-0.5	-0.4	-0.4
e\$	3.0	∞	2.0	3.0
eACP	1.0	1.73	1.0	1.0
Trade effects (%)				
Pw change	2	0	5	3
EC consumption	9	5	6	6
ACP exports	-46	-39	-41	-40
\$ exports	12	37	8	35
Welfare (mill US\$)				
EC consumer surpl.	693		579	766
Gov.Revenue	-307		-59	-89
Quota rents			-50	-204
EC total	386		470	473
ACP/EC	-209		-344	-362
\$ exporters			132	102
World total	192		165	148

Sources: Matthews, 1992, p.23; Model calculations.

The high cost producers in the ACP/EC group, ie the Windwards, the French DOM and the Canary Islands, would suffer relatively more from a free trade regime than the more competitive ones. For the Windwards this would mean a loss equal to one sixth of their GDP.

Furthermore, the Windward Islands, Jamaica and the Canaries lose out even under the more restrictive regimes which are favourable to other traditional suppliers. Again the Windwards are most heavily struck relative to their GDP.

Table 12: Welfare change in relation to GDP per head of population in banana exporting countries due to EC policy changes (US\$)

	Free Trade			Quota		
	GDP per head	Welf.change per head	%	Welf.change per head	%	
\$ exporters	1020	1.5	0.2	-0.3	-0.03	
Philippines	713	0.2	0.03	-0.04	-0.01	
Windwards		1263	-212.2	-16.8	-36.0	-2.9
Jamaica	1300	-8.8	-0.7	-1.5	-0.1	
French DOM	3700	-103.7	-2.8	22.0	0.6	
Ivory/Camer.	1052	-1.5	-0.1	1.3	0.1	
Canary	7400	-86.9	-1.2	-34.4	-0.7	
Somalia	200	-1.3	-0.7	1.3	0.7	

Sources: IMF, 1991; Model calculations.

These results raise the question, whether policy options which do not harm traditional suppliers as a group, can provide adequate compensation for losses still occurring due to heterogeneity within the group. It appears that direct compensation payments, financed through tariff revenues or by the EC budget, could be spent more in line with losses actually occurring in individual banana exporting countries.

However, despite these advantages in reality it would prove difficult to assess precisely these losses and determine the level of compensation, not to mention problems of visibility and political decision-making.

"Maybe unhappiness is the continuum through which a human life moves, and joy just a series of blips, of islands in the stream."

(Salman Rushdie,
The Satanic Verses)

6 Summary and Conclusions

The EC has to introduce a single banana import regime in 1993, since border controls will no longer exist in the Community and internal trade cannot be restricted any more. Meanwhile the EC is committed to providing consumers with products at reasonable prices, keeping ACP banana producers at the same welfare level as at present, and considering GATT regulations on trade restrictions.

Various future policy options have been proposed to "square the circle" of fulfilling all these obligations.

Five options have been analyzed in this paper, free trade, imposing a tariff on dollar bananas, a deficiency payment scheme for ACP/EC producers, a CAP-style regime with variable import levies, and a quota imposed on dollar bananas.

Traditional banana exporters cannot compete with dollar exporters for various reasons. Yet some of them, eg the Windward Islands, Somalia, the French DOM, and the Canary Islands, are heavily dependent on banana exports as a source of foreign exchange. Hence they have a strong interest in an EC banana import policy favourable to themselves.

The policy options analyzed in this study can be constructed as to leave traditional suppliers as a group as well off as at present.

According to the simulation model in this paper a free trade policy combined with direct compensation payments to traditional exporters would yield the highest gain in total world welfare compared to the present situation. The tariff option ranks closely behind free trade according to welfare criteria. The deficiency payment scheme would burden the EC budget, but still yield a total welfare gain compared to the status quo. The CAP and quota options would be financed largely by EC consumers through higher prices. However, under a CAP-style regime government revenue would be raised through variable import levies, whereas under a quota option economic rents would accrue to whoever owned the import licenses. The world as a whole would be worse off than at present under these options.

Although under all these policies the traditional suppliers as a group would not suffer a loss, there are gainers and losers *within* the group. The Windward Islands, Jamaica, and the Canaries would lose out regardless what policy would be implemented by the EC,

since their production costs are too high. Amongst these losers the Windwards were most severely struck (relative to GDP) due to their heavy dependence on banana production. It can be argued that, in order to provide adequate compensation according to actual losses, the EC should apply a liberal trade regime combined with direct aid payments. This is even more so, since under restrictive policies the TNCs who play a crucial role in the banana trade are likely to absorb a significant part of the transfers intended to support producers.

However, issues like practicability and administrative costs of these policies are beyond the scope of this study.

The constraints and shortcomings of the methodology applied have been mentioned. Nevertheless, the results have been proved to be consistent with similar studies in the literature and it is believed that they provide at least a rough assessment of the implications of future EC banana policies on traditional suppliers.

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