

# **Banana Sector Study for Somalia**

## **Preliminary Assessment and Strategic Options Report**

*This Report was prepared by the Eurata Experts:*

*Mr. Hans Hack*

*Mr. Hector McKilligan*

# Table of Contents

- 0 Executive Summary..... 4**
- 1 Introduction ..... 6**
  - 1.1 Purpose of the study ..... 6**
  - 1.2 Objective of the Study ..... 6**
  - 1.3 Implementation of the Study ..... 7**
- 2 Analysis and Assessment ..... 8**
  - 2.1 Area of Intervention ..... 8**
  - 2.2 Socio-economic Environment – Brief Overview ..... 8**
    - 2.2.1 Population and Land Tenure..... 8
    - 2.2.2 Authorities and Governance ..... 9
    - 2.2.3 Stakeholders..... 9
  - 2.3 Agricultural Production Potential..... 10**
    - 2.3.1 Land Use..... 10
    - 2.3.2 Farm Sizes ..... 10
  - 2.4 Crops and Cropping Patterns..... 10**
    - 2.4.1 Banana Production in Somalia..... 10
    - 2.4.2 Other Perennial Crops..... 12
    - 2.4.3 Annual Crops ..... 13
  - 2.5 Yields & Production Potential..... 13**
    - 2.5.1 Bananas..... 13
    - 2.5.2 Annual Crops ..... 14
  - 2.6 Irrigation System ..... 14**
  - 2.7 Infrastructure and Equipment ..... 16**
- 3 The international Banana Market ..... 17**
  - 3.1 Evolution of international Banana Markets and Market-Regulations..... 17**
  - 3.2 EU Regulations concerning ACP Banana Suppliers ..... 18**
  - 3.3 Implication for the Banana Sector in Somalia ..... 19**
- 4 Conclusions and Recommendations ..... 21**
  - 4.1 Choice of the Strategic Option for the Implementation of SFA Operations in the former Banana Sector ..... 21**
  - 4.2 Key elements of Implementation ..... 22**
    - 4.2.1 Rehabilitation of the Irrigation System..... 22
    - 4.2.2 Institution Building..... 23
    - 4.2.3 Agricultural Activities ..... 23
    - 4.2.4 Support to implementation..... 24
  - 4.3 Implementing Phase II of the Study..... 24**
- 5 Annexes ..... 25**
  - 5.1 Annex I: Time-Schedule and Activities ..... 25**
  - 5.2 Annex II: Persons Met..... 25**
  - 5.3 Annex III: Documents Consulted..... 26**
  - 5.4 Annex IV: Web-Sources on Banana Prices, Costs and Trade..... 28**

## List of Acronyms

ACP =	African, Caribbean and Pacific Countries
CEFA =	Comitato Europea per la Formazione e agricoltura
CMO =	Common Market Organisation
EU =	European Union
FAO =	Food and Agriculture Organisation of the United Nations
NGO =	Non Governmental Organisation
SFA =	Special Framework of Assistance
SHEFA =	Shebelle Fruit Association
TNG =	Transitional National Government
UNCTAD =	United Nations Conference on Trade and Development
USA =	United States of America

## 0 Executive Summary

The objective of the Banana Sector Study for Somalia as defined in the ToR is “to assess the banana industry in the context of irrigated crop production. Based on the assessment a strategy to improve banana production to an internationally competitive level will be developed. In case this is not sustainable, a strategy for diversification of irrigated crop production will be developed.”

The study is carried out in two phases. Phase I was implemented between February 13<sup>th</sup> and March 03<sup>rd</sup>, 2003 by H. Hack, and H. McKilligan. The result of Phase I is presented in the Preliminary Assessment and Strategic Options Report, providing the baseline for the decision on the focus of the support programme under the Special Framework of Assistance for Traditional ACP Suppliers of Banana in the Lower Shabelle region. Phase II is scheduled for May/June 2003.

The assessment and analysis of information collected from a field mission to the area of intervention, interviews with a great number of experts and stakeholders and consultation of relevant documents, the consultants came to the following conclusions presented in the report hereafter:

1. Prospects for the re-entry of the Somali banana industry in the international market are not encouraging and the single crop oriented recovery programme would bear a high risk. There is, however, a reasonable and expandable local/domestic market and some possibility of limited exports to regional markets, so that banana production will be able to continue to the extent of that demand.
2. Somalia is a food deficit country, depending on commercial imports and food aid. Therefore, there is a strong case for the agricultural production potential of the former banana areas to be used to grow food crops and food production to be maximised throughout the irrigable area, where successful cropping is not dependent on rainfall. A diversified cropping pattern will allow a better choice of crops and cropping intensities to the availability of water over the year and within the area.
3. The diversification option, introducing an expanded and intensified cropping pattern of food crops, oil seed, vegetables and fruit (including banana) for subsistence and supply of the domestic markets will be directly beneficial to a larger number of farmers and provide a greater spread of increased household incomes among the rural population. A diversified range of products will reduce the farmers exposure to price fluctuations in the still highly volatile domestic markets for all commodities.
4. The proposed option of a recovery strategy represents the first steps from mainly relief-oriented activities towards a more systematic development approach. The operations of the proposed recovery programme will be successful only if largely autonomous socio-economic structures are emerging gradually in the region and when

communities and stakeholders assume ownership and responsibilities, so far unknown to them. In that respect, the activities will, to some extent, have trial or pilot-phase character where progress depends essentially on the response and absorption capacity of the target-groups.

**The recovery programmes in the former banana growing areas should be oriented towards the development and improvement of a diversified agricultural productive system, rather than on a single crop approach. The objective of such an approach is to maximise the area of annual food crops grown under irrigation to reduce dependence on commercially imported food grain and/or food aid and to allow bananas and other perennial crops to be grown for the supply of local markets. Rehabilitation of the irrigation system is given the highest priority by the farmers of the community.**

## **1 Introduction**

### **1.1 Purpose of the study**

Somalia, as an ACP member country and (former) traditional supplier of banana to the EU, is eligible to receive support, especially for the Banana sector, under the Special framework of Assistance for traditional ACP Suppliers of Banana (SFA) set up in 1999. In 1999 and 2000 Somalia did not apply for SFA funding.

The present Banana Sector Study is financed under SFA allocation 2001 and the findings of the study will form the guidelines for design and implementation of subsequent SFA-funded support programmes, aiming at the "rehabilitation of productive agricultural systems in the traditional banana growing areas of southern Somalia".

Banana production in Somalia dominated the agricultural sector since the 70's, and with periodic lows during the civil war, until 1997. In its prime periods, the banana sector has been Somalia's second most important foreign exchange earner after livestock. It provided between 8 000-10 000 jobs in the production zones and guaranteed a steady cash-influx of up to 1 million USD per month. Civil unrest and floods in 1997 devastated the industry. No other crop or rural based industry has yet replaced the essential economic role of the banana sector, putting large sections of the population in the affected zones at risk to food insecurity and poverty.

Until 1997, up to 10,000 ha of land in the three areas Middle Shabelle, Lower and Lower Juba, of which Lower Shabelle had banana plantations. (This represents about 60 % of the total growing area.) Apart from banana growing, the three irrigable areas form the largest potential for agricultural production and most valuable national asset, however are in desperate need for actions to stop further decay.

The Terms of Reference suggest that the study should initially focus on the Lower Shebelle Region, because of its accessibility. This is roughly the area between Afgoi in the north to Haaway in the south, a distance of some 200 km along the course of the River Shebelle.

Due to the absence of a central government, so far none of the international or EU support facilities could be mobilized for consistent recovery programmes in the former Banana areas, (with the exception of food aid and disaster relief operations, carried out by several NGOs). Since 2001, the activities of four NGOs that have been working in EU financed relief programmes in the Middle and Lower Shabelle, have been coordinated into a modest but more consistent approach.

### **1.2 Objective of the Study**

The Terms of Reference of the Study Objective are as follows: "The objective of this consultancy is to assess the banana industry in the context of irrigated crop production. Based on the assessment a strategy to improve banana production to an internationally competitive level will be developed. In case this is not

sustainable, a strategy for diversification of irrigated crop production will be developed.”

### **1.3 Implementation of the Study**

The study is carried out in two distinctive phases: Phase I and Phase II. Phase I was carried out between 13<sup>th</sup> February and 28<sup>th</sup> of March. This included an assessment mission to the area of intervention in Somalia and a desk study, carried out in Nairobi and Europe, (see Annex I - Timetable).

The result of Phase I of the Study is the present Preliminary Assessment and Strategic Options Report.

The Assessment Study will provide a sound baseline for the decision-making of EU Somali Unit on the focus of the future recovery strategy in former banana growing areas.

In Phase II, the study team will elaborate the technical and operational outlines of the chosen option in detail. This is upon endorsement by the EU Somali Unit of the strategy to be followed, with the team paying special attention to participation and commitment of stakeholders during implementation and their capability of later operation and maintenance of the rehabilitated elements. Field missions for Phase II are scheduled during May/June and the final report is to be submitted before end of August 2003.

## **2 Analysis and Assessment**

### **2.1 Area of Intervention**

The Terms of Reference suggest that the study should focus initially on the Lower Shebelle Region, because of its accessibility. This is roughly the area between Afgoi in the north to Haaway in the south, a distance of some 200 km along the course of the River Shebelle. The field visit for the preliminary assessment was carried out in the main banana growing areas in the central part of Lower Shebelle, from Janaale in the north to Bulo Mareta in the south, covering about 40 km of the river and around 30,000 ha of potentially irrigable land. In the past, this area was responsible for over 90% of banana production in the Lower Shebelle Region and over 50% of all Somali bananas. The consultants will refer to this central part of Lower Shabelle as "area of intervention".

### **2.2 Socio-economic Environment – Brief Overview**

#### **2.2.1 Population and Land Tenure**

The total population of the grand Lower Shabelle region was estimated in 1995<sup>5</sup> at 616,000 inhabitants, (urban 17%, rural 60%, nomadic 23%). In 1989 the rural population lived in 715 villages and the number of farms was about 70,000, of an average size of 2,7 ha. Out of about 200,000 ha of arable land, 40,000 ha were irrigable and 112,000 under rain fed cultivation.<sup>1</sup>

Compared to the total of 40,000 ha of irrigable land, the area under banana production, even at its peak around 1990, occupied annually about 8-9,000 ha shared by 141<sup>2</sup> banana growers. The size of individual banana plantations was between 40 and 300 ha.

In the Janaale-Bulo area, the current population is unknown due to the absence of civil authorities and census data. A report in 1978 by Sir M. Macdonald & Partners approximated the population of the Janaale – Bulo area at 112,310, comprising some 18,940 families in 128 villages, but there may have been considerable internal movement since the start of the civil war in 1990.

It was reported by several observers that the sedentary population in the Shabelle region has largely remained stable after the years of turmoil and disaster. Due to clan-oriented control, there was no heavy permanent influx of immigrants from other regions. But many of the workers' villages that were sited on the commercial farms have been abandoned, partly because of the lack of work and also because the collapse of the canal system has prevented drinking water reaching them. Most of these people are said to have moved into small towns like Janaale, Shelembot, Qorooley and Golweyn as well as Merca, the district capital.

---

<sup>1</sup> UNDOS, Nairobi, Lower Shabelle Region, Study on Governance, 1997

<sup>2</sup> Nur A. Weheliye, The present role of the Banana sub sector..., 1996



However, major changes have taken place in land ownership. "Widespread expropriation and unlawful occupation of properties became common in Somalia after 1991. The result of a long and chaotic process can be summarized as follows. In 1997, there were very few farms belonging to individuals that are still occupied by newcomers. The real owners or their caretakers have now regained control of the property. The only exceptions are the farms owned by Siad Barre's family. Most state farms or plantations owned by foreigners are still occupied. Newcomers, if successful, started cultivating state land because they knew that sooner or later, the issue of ownership would be raised and they shifted progressively from private farms to "State" land."<sup>3</sup>

Changes in land use, cropping pattern and employment are direct consequences of the break-down of the banana industry, leaving the large banana-work force without employment. The progressing deterioration of the canal network forced the farmers to reduce their irrigated crops and larger areas are returned to rain fed cultivation, on smaller and large holdings alike. Banana production was reduced and replaced by food crops (self subsistence) oil seed, fruit and vegetables for small and irregular outlets on the local market at highly volatile prices.

Although the final and legal settlement of land ownership may not be achieved in the near future, today, ownership disputes are not considered to form a crucial obstacle to start any rehabilitation measures in the area, that would be beneficial to the great majority of legal owners and farmers. The farming community attaches the highest priority to the improvement of the irrigation system and expresses willingness of active cooperation and commitment.

### **2.2.2 Authorities and Governance**

There is no central government with overall control in Somalia and security is a problem in many areas, including the capital, Mogadishu, with vehicle hijacking and kidnapping cited as major concerns. However, Merca town and the study area are relatively safe at present, although most vehicles travel with several armed guards. The TNG (Transitional National Government) does appear to have some influence in the area, with soldiers manning some checkpoints. Traditional councils of elders, as well as religious Sharia courts, are also said to have a role in the maintaining some order. Otherwise, the nearest approach to institutional organisation in the area, are the farmers committees, ranging from small village irrigation committees to the two main farmers' associations, one representing small-scale farmers (Somalta'ab) and the other for the larger-scale banana farmers (SHEFA – Shebelle Fruit Association).

### **2.2.3 Stakeholders**

In addition to the farmers themselves and a limited number of traders, transporters and contractors, stakeholders concerned with development in the area include the EU and the NGOs working on irrigation and agriculture in the intervention area – ADRA, CEFA, CARE and CONCERN. The Italian NGO, CEFA

---

<sup>3</sup> UNDOS, Nairobi, Lower Shabelle Region, Study on Governance, 1997

(Comitato Europea per la Formazione e Agricoltura) also provides back-stopping technical support to the other NGOs in the utilisation of EU funds.

## 2.3 Agricultural Production Potential

### 2.3.1 Land Use

The MacDonald study of 1978 gave the following summary of land use in the Janaale-Bulo area:

	<b>Gross Area (ha)</b>	<b>NetArea (ha)</b>
Uncultivated land:	17,450	-
Annual crops (rainfed/part irrigated):	15,565	5,078
Annual crops (irrigated):	27,010	11,512
Bananas:	6,870	4,067
Other perennial crops:	515	305
<b>Total:</b>	<b>67,410</b>	<b>20,962</b>

In 1978, most of the cropping was dependent on irrigation and since the deterioration of the canal system following the civil war, it can be assumed that the cropping pattern may have changed considerably. Rainfed sorghum areas most probably will have expanded, at the expense of irrigated maize, and banana production is now confined to areas near the river, or to the first 2-3 km of the main canals and on farms with pumped irrigation from groundwater.

### 2.3.2 Farm Sizes

The MacDonald study of 1978 gives the average farm size for around 20,000 smallholders growing mainly annual crops, as 1.95 ha (range 0.5 – 13.0 ha), with an average net cropped area of 0.90 ha per farm. The smallholders association, Somalta'ab gives 15 ha as the maximum size of farm to qualify for membership. The number of commercial banana farms is not given in that report, but the 1996 report by Weheliye states that in 1994-95 there were 140 banana growers in the Shebelle Region, with 3003 ha of land under bananas. The individual plantation sizes ranged from 50-300+ ha. In Phase II of the study, it should be possible to establish the current number of banana farmers.

## 2.4 Crops and Cropping Patterns

### 2.4.1 Banana Production in Somalia

#### 2.4.1.1 Historic Development.

Banana production in Somalia started in the '30s in the Lower Shabelle where irrigated agriculture was developed and the main canals Primo Primario, Primo Secundario and Asyle ere constructed under Italian colonial administration. The major development of banana production took place between mid '50s and end of '60s when banana production was extended to Middle Shabelle and Lower

Juba. Most banana producers were Italian as well as the traders and, most important, the traditional market for Somali Bananas has always been Italy, except small quantities exported to Saudi Arabia. Nationalisation policy at the end of the '60s led to a steady decline of the banana industry until the end of the '70s. In 1983 the National Banana Board (Somalfruit), a joint venture between producers, the Somali government and DeNadai was established.

The almost complete destruction of the Somali Banana industry (due to civil unrest and the civil war of 1991) was followed by a short period of massive rehabilitation efforts when DeNadai and Dole, major players in the international banana market, returned to Somalia. In 1998 however, the two foreign investors decided to interrupt any activity in the country. The main reason for this decision was the damages caused by El Niño related floods to the plantations and agricultural infrastructure. Nevertheless, the prospective cancellation of individual quotas for ACP countries under the new EU regulation on banana has also been accounted for. In fact, it was mainly the 60.000 MT exclusive quota for Somalia under the 1993 Regulation that made it attractive to operators and importers to invest in the rehabilitation of the banana industry during the period 1994-1998.

Somali Banana production reached its peak in 1973, when about 150,000MT of banana were produced on 9,500 ha (about 60% in Lower Shabelle), yielding 25-30MT per ha. Civil war in 1991 led to the almost complete destruction of the banana industry. During the recovery efforts of 1993-1997, in the Lower Shabelle region, the banana output reached again about 80,000MT. Approximately 65% of the total banana production in Somalia was exported and 35% went to domestic markets.

The banana sector was not only the second export crop before war, it was also the major employer of the local population in the cropping areas. Production in the plantations absorbed a labour force of up to a total of about 10,000 and induced the development of related activities in up-and downstream sectors to the banana industry.

#### **2.4.1.2 Present Situation**

After almost ten years without government and public institutions, very little of the industries infrastructure is left and there are no reliable figures available after 1996 on banana output, cropping areas etc.

During the field mission in February 2003, it was observed that in spite of the poor state of the irrigation system, bananas do show some signs of recovery. The mission saw mature plantations and new fields being planted. Bananas were harvested for the local urban markets, and representatives of a Middle Eastern company, Shebelle Agro Products Ltd, have told the mission that they have identified 1600 ha from which they intend to purchase the crop for export over the next 12 months, for export to Middle East markets. If this is correct, it could represent some 15,000 Mt, compared with Somalia's exports in 1996 (24,188 Mt), prior to the destruction of some 80% of the banana plantations by the floods of 1997/98, which were attributed to the "El Nino" weather effect.

Although it was not mentioned by the representatives of Shebelle Agro Products Ltd., farmers told the mission that two trial shipments of bananas were exported last year --50,000 boxes (of 18.5 kg each) in April 2002 and 50,000 boxes in September 2002. Payment was on the basis of a Letter of Credit from the Dahabshil Bank, which has branches in Mogadishu and Nairobi. The price of US \$ 1.50 per box of **18.5 kg** was very low compared with the price paid in 1996 for a **12.5 kg** box, although there are conflicting reports on that 1996 price, ranging from \$2.00 to \$2.70 per box.

However, in spite of this apparent revival, there are many factors militating against future success for Somali bananas in the international market, apart from the irrigation. Some of these are mentioned below:

- Because they have to be irrigated, Somali bananas are more expensive to produce than the rainfed crops. Moreover yields are low, about half that of the main producing countries. Limited areas of ideal soils, strong winds, high evapo-transpiration rates and flooding are some of the factors responsible.
- At the present time the DeNadai group is buying bananas in Ecuador at half the price they were paying for Somali bananas in 1996.
- As soon as export earnings become significant, there is a real danger that criminal elements would be attracted to the area and disrupt the trade with theft and kidnappings etc.
- The lack of any of support services for business – insurance, mechanical services, suppliers of spare parts, crop inputs and packing materials etc.

The local/regional market for bananas is potentially substantial and has been estimated at 30-40% of pre-war production levels, when it was possible to transport them as far as Hargeisha and Djibouti. However, at present these markets are not accessible due to poor roads and the security situation. Saudi Arabia, the Gulf and other Middle Eastern markets are also limited, with competition from the Philippines and Yemen. The latter is reported to be sending 100,000 Mt per annum into Saudi Arabia by road, although Somali farmers discount this, saying the Yemeni climate is often too cold and leads to unreliability of supply.

It has been suggested that there might be export possibilities for organic bananas and certainly the conditions in Somalia would favour this type of production. The dry climate means that there are few problems with fungus diseases and even Sigatoka is unknown, which is a problem in most other banana producing countries. Nematode control by sun-fallowing is also said to be effective, and there are possibilities for banana weevil control using neem tree leaves or extracts, thereby minimising the need for proprietary chemicals.

#### **2.4.2 Other Perennial Crops**

The other perennial crops grown in the area are mainly: limes, mangoes, grapefruit, papaya and coconuts. Minor fruits like cherimoya and local fruits are also found. Most of these crops are for home consumption and for sale within

Somalia in the urban markets. There have been some exports in the past, mainly to the Gulf and Middle Eastern countries; of limes, mangoes, grapefruit, watermelons and sesame (watermelons and grapefruits were also shipped to Italy with bananas). However, the volume of exports for all products was never very significant. The Consultants did see limes being dried for export on one farm but they were also seen rotting away on another farm, having failed to find a market.

### **2.4.3 Annual Crops**

Annual crops include maize, sorghum, sesame, rice, cowpeas, mung beans and ground nuts, as well as watermelons and vegetables like tomatoes, onions, garlic, lettuce and carrots. Cotton was important in the past but is no longer grown. Tobacco has also been important in the past but its current status is not known.

Maize and sesame are the principal food crops grown in the irrigated areas, with sorghum in the rainfed areas and at the "tail" end of the irrigation system, which receives very little water. Around 300-500 ha of upland rice used to be grown on a mechanised state farm, but only minor areas of paddy rice are now found.

Maize and sesame are the main crops in the irrigated areas and the traditional cropping pattern is to plant 100% of the land with maize with the main rains (Gu season – Apr/May/Jun), followed by a second crop of maize (60%) plus sesame (40%), with the second rains (Der season – Oct/Nov/Dec). The average rainfall for the whole year is less than 500 mm, so irrigation is essential for most crops. Minor crops like cowpeas are intercropped with maize and high value cash crops like watermelons and vegetables are grown all year round with irrigation, in pure stands. In the irrigated areas maize and sesame are also cash crops, with sesame in particular regularly fetching a good price. Somalia has structural food-grain deficits and is importing maize, thus local market outlets should be good, although complaints were heard about prices being depressed by the availability of food aid maize from WFP in the markets.

Research plots were also visited where CEFA agronomists were conducting variety trials on sunflower, safflower, upland rice, paddy rice and groundnuts, as well as sesame (alternative irrigation system) and maize (stem borer control using Neem tree extract).

## **2.5 Yields & Production Potential**

### **2.5.1 Bananas**

Prior to the civil war, banana yields were reported to be around 25-30 Mt/ha/yr (gross), compared with yields in excess of 40 Mt/ha/yr, which are achieved in other banana producing countries. The exportable yield per hectare has also been rather low, as can be seen from the following figures extracted from the 1978 MacDonald report, based on data from aerial photography and the records

of the National Banana Board. The average exportable yield would appear to have been less than 10 Mt/ha:

### **Banana Production from Lower Shabelle**

<b>Year</b>	<b>Banana Area (ha)</b>	<b>Exported Yield (Mt)</b>	<b>Exportable Yield per ha (Mt)</b>
1971	3,400	36,710	10.8
1972	3,917	60,650	15.5
1973	4,700	46,270	9.8
1974	4,694	41,470	8.8
1975	4,209	34,990	8.3
1976	3,897	33,870	8.7
1977	3,895	28,810	7.4

### **2.5.2 Annual Crops**

The MacDonald report gives the following yield estimates for the major annual crops grown in the irrigated area:

Maize	1.0 Mt/ha (on the better soils with irrigation)
Maize	0.6 Mt/ha (on the poorer soils with limited irrigation)
Sesame	0.3 – 0.4 Mt/ha (0.5-0.8 Mt/ha in good years)

No figures are given for sorghum - the report only deals with the irrigated area.

### **2.6 Irrigation System**

The source of irrigation water is the River Shebelle, which is silting-up and raising the height of the river bed, forcing canal off-takes to be higher than their original level before they will work. The period over which the river flows at the higher levels is short and therefore less time and less water is available for irrigation.

Silting of the river also contributes to flooding, damaging canals, roads and crops and hindering transport. The flat gradient of the river's course will naturally result in flooding if the river is not regularly managed by dredging and bank reinforcement. Silting in the river also slows the flow of water, resulting in a faster rate of silt deposit, exacerbating the problem.

Lower river levels than in previous years have been also been observed, and are believed to be the result of greater abstraction of water upstream in Ethiopia.

Most of the irrigation canals are so badly silted up and choked with vegetation that they only operate when the river is at its highest, greatly reducing the irrigated area of crops. Another result of the non-functioning canal system is the breaching of riverbanks by farmers, to obtain irrigation water, which is resulting in uncontrolled flooding and wastage of water. Crops irrigated in this way are unlikely to get a second water application. Shortage of water also leads to

conflict when farmers block the canals and breach the banks for irrigation, thus depriving farmers further downstream of water.

Considerable work on rehabilitation and maintenance of canals, diversion structures and off-takes has been carried out by the NGOs and the farming communities, but much of their work has been rendered ineffective because of the rapid rate of silt deposit and build-up. There would appear to be several reasons for this. One is insufficient maintenance by de-silting after the initial canal rehabilitation. Another is the difficulty of reshaping canals to their original design and depth, because the banks of the canals have become too high for excavators to be able to reach the bottom. This seems to be result of inefficient cleaning in the past, with silt removed being deposited too near to the canals. A third reason for rapid silting is partial rehabilitation, with primary canals being cleaned but not the secondary canals or drainage channels at the same time. The result is a reduced or restricted flow out of the main canals.

Tertiary canals are said to be well-maintained by the farmers. They are small enough to be cleaned by hand and clans/families in the vicinity of such canals, and tend to be related and cooperation is easier with less likelihood of disputes. Village committees that control the allocation of water are said to be working well. Maintenance of the larger secondary and primary canals is more problematic. They are expensive to work on, requiring heavy machinery and because of their greater length (up to 36 km) they may also need cooperation between a number of different clans. When bananas were being exported the larger farmers could afford to maintain the main canals, to the benefit of the smaller farms downstream. However canal committees are functioning, and agreements for cost sharing with the NGOs have been reached and implemented, although farmers using water direct from the river are not keen to share costs of maintaining canals. Some pumping of irrigation water from boreholes was observed, where there was no water in the canals. This is obviously expensive and possibly entails some danger of a salinity build-up over time, due to the poor quality of ground water in some areas.

Within the Janaale-Bulo Marerta irrigation system there are three main canals with a total command area of 32,000 ha, taking water from the River Shebelle. These are the Primo Secundario, Aseyle and Cesera Maria canals and they all start from the Janaale barrage. Specifications are as follows, but it should be noted that the Consultants cannot vouch for the accuracy of figures at this stage, since there has been some variation between sources of information:

**Primo Secundario Canal**

Length: 35 - 36 km

Discharge drain: 8 km into the coastal dunes

Design capacity: 2.65 cumecs

Command area: 12,000 – 15,000 ha

Feeds one secondary canal: Kel Shekaal (6.9 km)

**Aseyle Canal**

Length: 16 km

Discharge: back into the River Shebelle

Design capacity: 1.6 cumecs

Command area: 6,500 ha

No secondary canals

### **Cesera Maria Canal**

Length: 17 km

Discharge drain: via Kel Shekaal (6.9 km) into the coastal dunes

Design capacity: 1.9 cumecs

Command area: 12,000 ha

Feeds 3 secondary canals: 7.3 km, 4.5 km and 4.0 km, in addition to Kel Shekaal

In addition to the secondary canals, all three main canals also have direct offtakes to farms from their main channels, as does the river itself.

## **2.7 Infrastructure and Equipment**

The port of Mogadishu is closed and Merca port is said to be accessible for only 8 months of the year due to rough seas (September to April). The tugs and pontoons previously used in Merca for loading bananas have all gone – stolen or destroyed. Large boats have to anchor offshore, beyond the reef and have to be loaded from smaller vessels.

The roads are in very poor shape and during the wet season it could well be impossible to transport the crop to the port. The company proposing to export bananas has said that they intend improving the main roads to get the bananas out.

Contracts for canal de-silting are with local owners of earth moving machinery, mainly the larger banana farmers and most of the machines are old and maintained by cannibalising parts from others, which is obviously not a sustainable situation.



### **3 The international Banana Market**

#### **3.1 Evolution of international Banana Markets and Market-Regulations**

The situation of the international banana market since the late nineties is marked by a structural oversupply of bananas. The main cause of overproduction may be found in the producers/suppliers expectations generated by the liberalization in the European Market and in the increasing demand from the emerging markets in Eastern Europe, Russia, and China, which finally did not develop to projected levels. These circumstances, together with the sluggish growth of consumption in major developed markets (EU, USA) led to the actual situation resulting in declining real prices for bananas.

Long term market analysis carried out by FAO<sup>4</sup> and UNCTAD<sup>5</sup> reveal that the terms of trade for bananas have experienced a steady deterioration in real terms already over the last 20 years, with few periodic exceptions due to national or regional market regulations or natural disaster. In the developed countries, which still account for 85 to 90 % of the total banana imports, the annual imports per capita have settled in the range of 9.5 to 10.5 kg since 1995 and the increasing stagnation has resulted in a significant decline in import (c.i.f.) prices.

This long-term progressive stagnation of demand and increasing oversupply is confirmed by Projections for Supply and Demand of Bananas to 2005, FAO 1999, predicting an underlying world market growth rate for demand of 1.5% p.a. against an increase of world net exports of 2.2% p.a. The projected volume of international banana trade is of 13.7 million tonnes in 2005. However, "this balance would be attained only by a decline in real prices as a result of sharp decrease in import demand growth rates and the lag in production adjustment in face of decreasing prices"<sup>6</sup>. The projected overall price decline is 18 per cent, including a decline of some 25 per cent in North America and a smaller decline of about 6 per cent within the European market.

Strategies to escape the squeeze of margins by focussing on "Niche" markets such as organic production or fair-trade production offers only limited prospects for the time being. Although progressing at annual rates of 15-20 percent, the share of internationally traded "organic" bananas is estimated at less than 90.000 MT actually, against a total volume of about 12 million MT . The main EU-markets for organic bananas are Germany, United Kingdom at an estimated volume of 15-20.000 tonnes annually.

The production of organic Bananas, according to the standards set by the major consumer countries, requires very specific and cost intensive agricultural practices in soil fertility management and pest control. Major problems however are encountered in logistics. As the traded volumes are low, market entry costs are comparably very high and transports, as a rule, have to be associated to normal banana shipments. Countries without regular Banana shipments will face prohibitive costs of market access for organic or fait-trade productions.<sup>3</sup>

---

<sup>4</sup> FAO, Projections for Supply and Demand of Bananas to 2005 (May 1999)

<sup>5</sup> UNCTAD, InfoComm, Market Information, Commodities, 2002

<sup>6</sup> FAO, Le Marché de la Banane biologique et de la Banane du Commerce équitable, (May 1999)

Fundamental changes are also taking place in the international marketing chain for Bananas. In the last 20 years there has been a move away of multinationals from direct growing in order to focus on more specific marketing and distribution activities. Following this strategy, multinationals avoid production risks, such as those related to natural disaster, as well as environmental and social costs of production. It is the local producer who has to face these costs.<sup>2</sup>

### **3.2 EU Regulations concerning ACP Banana Suppliers**

The current EU regulation on banana, (CMO) – Common Market Organisation on Bananas, came into existence in 1993, in response to the EU single market and will remain in force until December 31<sup>st</sup> 2005. From January 1<sup>st</sup> 2006, further steps towards liberalisation of the market will be implemented under WTO agreements, precise details have yet to be agreed upon. An increased competitive pressure on all suppliers, ACP and non-ACP, is to be expected.

The main features of these EU-regulations for ACP banana producers are the following:

- The overall import quota for ACP countries is 750.000 MT, with a preferential tax-exemption (zero tariff)
- No sub-quota is given to individual ACP countries

Above these protected quantities, third country bananas and non-traditional ACP bananas are allowed into the EU up to a level of 2 million tonnes, with only a duty of 75 €. Above these 2 million tonnes, import duties of 680 € / tonne for non-ACP countries and 380 €/tonne for ACP countries are applicable.

The main objective of these regulations was to allow harmonization of the banana market, guarantee free movement of bananas within the community. The accorded transitory preferences would ensure adequate incomes and promote improvement of efficiency in banana production for traditional suppliers of bananas to the EU.

While the abolishment of individual quotas has been a big chance for established and competitive ACP suppliers to increase their individual share, it presents for Somalia, a major setback. The “loss” of the former 60.000 MT country-quota minimizes the attractiveness of the Somali banana sector to potential external investors, to try a turn-around, similar to the '90s.

In compensation of the loss of entry privileges to the European market, a number of financial and economic instruments such as structural adjustment, STABEX and support to production have been available during the past years. The lack of a National Government prohibited Somalia's access to these facilities since 1991. At present The Special Framework of assistance for Traditional ACP Suppliers of Bananas (SFA) of the EU, started in 1999, offers another opportunity of assistance to either improve the national banana industry to international competition or to convert the agricultural potentials into a more sustainable and viable structure

### 3.3 Implication for the Banana Sector in Somalia

Prospects for the return of the Somali banana industry in the international market are not encouraging. In fact, Somalia's actual position is that of a newcomer, starting under severe material, institutional and financial handicaps into an oversupplied and extremely competitive market. It has to be recognized that all crucial elements of a well functioning banana sector, including irrigation, roads and ports, intermediaries, trade organisation, financial and institutional system, would have to be fundamentally rehabilitated and /or rebuilt, requiring a massive and rapid injection of capital, to be engaged under considerable financial and economic risks. The high risk of such a strategy would persist, even under the assumption of full security, freedom of movement and gradually emerging administrations and public institutions in the area of intervention and in the Country.

It might be reminded that the (once successful) recovery operation during 1993 to 1997 took place under a more stable political and economic environment, was essentially driven by multinational capital and know how, and was favoured by highly preferential market conditions. The financial commitment of the DeNadai/Dole group was crucial for the rehabilitation, both in terms of providing the growers with essential farm input and financial resources, technical management as well as handling the totality of export operations<sup>7</sup>. None of these factors are given in the prevailing situation.

However, even under extremely difficult conditions, banana production in Somalia has survived and is supplying local outlets on a very limited scale, without major investments into farms and irrigation system and using-up the remaining production assets. The domestic market, which has been one important outlet in the past (est. of up to 30,000T p.a.), will be the most reliable basis of survival and for further development of the Somali banana production. However, instead one can rather speak of "local markets", due to bad transport conditions, insecurity and restrictions in free movement of goods and persons. In addition to the potential of domestic banana consumption, (probably limited) exports to Libya and or Middle East markets are providing additional opportunities. Some of these exports are reported during the past 2 years. In 2003 further exports to regional markets are planned.

Bananas for the domestic market are traded at farm gate for 5-6\$/quintal, which is considered insufficient to cover even the production costs. It is reported that for exports the new traders offer 1,5 to 2USD /box of 12,5 kg; modalities of payment to the producers are not known. Prices in these limited markets are extremely volatile.

It can be concluded that in the short and middle term, the most realistic path of future development for the banana Sector of Somalia would be follow the steady demand of the domestic market(s) and gradually extend to neighbouring countries and additional regional outlets/exports in the Middle East region, as the opportunities develop.

---

<sup>7</sup> Nur A. Weheliye, EU, The present Role of the Banana Subsector in the Somali Economy..., 1996

The continuity of banana production rather than the recovery of the banana industry in Somalia would be imbedded into a comprehensive rehabilitation strategy of the agricultural production potential in Lower Shabelle, ability to respond flexibly to real demand and to provide improved income opportunities for the largest possible number of farmers, large and small.

## 4 Conclusions and Recommendations

### 4.1 Choice of the Strategic Option for the Implementation of SFA Operations in the former Banana Sector

After the assessment of the present status of Somali Banana production and its chances to achieve a sustainable recovery, including a successful re-entry into the international banana export markets, the consultants conclusion at the end of Phase I of the Banana Sector study are as follows:

Prospects for the re-entry of the Somali banana industry in the international market are not encouraging and the single crop oriented recovery programme would bear a high risk. There is, however, a reasonable and expandable local/domestic market and some possibility of limited exports to regional markets, so that banana production will be able to continue to the extent of that demand.

Somalia is a food deficit country, depending on commercial imports and food aid. Therefore, there is a strong case for the agricultural production potential of the former banana areas to be used to grow food crops and food production to be maximised throughout the irrigable area, where successful cropping is not dependent on rainfall. A diversified cropping pattern will allow a better choice of crops and cropping intensities to the availability of water over the year and within the area.

The diversification option, introducing an expanded and intensified cropping pattern of food crops, oil seed, vegetables and fruit (including banana) for subsistence and supply of the domestic markets will be directly beneficial to a larger number of farmers and provide a greater spread of increased household incomes among the rural population. A diversified range of products will reduce the farmers exposure to price fluctuations in the still highly volatile domestic markets for all commodities.

**The recovery programmes in the former banana growing areas should be oriented towards the development and improvement of a diversified agricultural productive system, rather than on a single crop approach. The objective of such an approach is to maximise the area of annual food crops grown under irrigation to reduce dependence on commercially imported food grain and/or food aid and to allow bananas and other perennial crops to be grown for the supply of local markets. Rehabilitation of the irrigation system is given the highest priority by the farmers of the community.**

The proposed option of a recovery strategy represents the first steps from mainly relief-oriented activities towards a more systematic development approach. The operations of the proposed recovery programme will be successful only if largely autonomous socio-economic structures are emerging gradually in the region and when communities and stakeholders assume ownership and responsibilities, so far unknown to them. In that respect, the activities will, to some extent, have trial or pilot-phase character where progress depends essentially on the response and absorption capacity of the target-groups.

## 4.2 Key elements of Implementation

### 4.2.1 Rehabilitation of the Irrigation System

The key element of any recovery operation in the Lower Shabelle region is the rehabilitation of the irrigation network aiming at (a) prevention of further deterioration, (b) improvement of access to irrigation-water for farmers and (c) increasing distribution efficiency of the canal system.

There are several different approaches that can be considered for rehabilitation of the irrigation system. The choice of which would affect the scope of the study. These are given below, in three scenarios:

1<sup>st</sup> Scenario:

- Rehabilitation of all of Lower Shebelle, from Afgoi in the north to Bulo Marerta in the south, some 50,000 to 60,000 ha irrigable land.

or

- Rehabilitation of the main banana area between Janaale and Bulo Marerta, which amounts to about 30,000 ha of irrigable land (Merka District).

2<sup>nd</sup> Scenario:

- Full rehabilitation to the original design capacity. This will be the slowest and most expensive option, but will ensure maximisation of the irrigable area and achievement of its full crop production potential.

or

- Partial rehabilitation and repair. This option will be faster and cheaper, but will not achieve maximum irrigation or full crop production potential.

or

- Partial rehabilitation as an emergency approach, followed by full rehabilitation at a later date. This would give some results quickly as well as providing for eventual development to full irrigation potential.

3<sup>rd</sup> Scenario:

- Rehabilitation of all three main canal systems, along with the associated secondary and tertiary canals, in one operation.

or

- Rehabilitation of each main canal system in turn, which would have the advantage of the first one acting as a pilot scheme for the others.

During Phase II of the Strategy Study, the amount of work to be done and the best method of doing it will be assessed, paying particular attention to the need for redesign of the canal system, where necessary, to enable low cost maintenance by the communities and to make water available to the entire command area. The rehabilitation-plan would ensure coordination of effort between the implementing agencies and NGOs, a logical approach to the

rehabilitation work, as well as a programme for future maintenance and training of farmers. Proposed actions should be achievable, within a reasonable time scale, sustainable in terms of community maintenance and should aim to maximise the use of water resources.

In view of the specific expertise required in the field of irrigation engineering, it is proposed to include an additional irrigation engineer into the study team for Phase II.

#### **4.2.2 Institution Building**

To ensure sustainability of the implemented measures, it is essential that the stakeholders are involved at all stages of programme design, execution and operation. Therefore, the second key element is appropriate support activities aiming at the enforcement of local institutions and stakeholder organisations to enable these to operate and maintain the (rehabilitated) system.

There are no government institutions, so Phase II of the study would involve discussions with the farmers associations, particularly the small scale farmers association - Somalta'ab, and SHEFA – the Shebelle Fruit Association for the larger banana farmers, to determine their strengths and weaknesses, assess training and organisational needs, as well as requirements for buildings, storage, equipment, communication and transport.

#### **4.2.3 Agricultural Activities**

To ensure economic viability of the recovery programme, it is essential to maximise the return per unit of irrigation water. The third key element of the recovery strategy is support to the farmer community for the improvement of agricultural practice, farming systems and crop varieties to achieve higher production levels. Also market access and marketing techniques must be improved, eventually strengthened through consistent purchase operations by food-aid and relief programmes.

During Phase II of the study, the current situation regarding land use and crop areas in terms of farmer numbers, land tenure, farming systems and crop production levels will be assessed. The estimated effects and benefits of rehabilitating the irrigation system on future crop production, both in terms of farm incomes and increased food security will form one of the crucial parameters for the assessment of the economic viability of the different rehabilitation scenarios.

The results of the current crop trials would be studied and recommendations made as to their importance and relevance for improving crop production. Factors to be looked at would include: irrigation methods to make more efficient use of water, integrated pest management to minimise the need for purchased chemicals, higher yielding varieties – especially for maize and new crops for diversification of the farming system. Methods of increasing banana productivity, such as high density planting, would also receive attention.

The success of the 2003 export effort on bananas will be examined, as well as the problems and bottlenecks the banana growers are facing. Availability of labour, crop inputs and machinery would be included in the assessment. Similarly, the crop production and marketing problems of the small farmers will be evaluated with a view to recommending a strategy for increasing crop yields and productivity.

#### **4.2.4 Support to implementation**

The interventions will follow the principles of participatory planning and implementation. The communities of beneficiaries must show cooperative commitment to the operations and are requested to provide material contribution to investment and maintenance amounts. The operations will essentially be stakeholder driven, assisted by implementing partners providing technical assistance and playing the role of facilitators.

External implementing partners in the field would be the group of NGO, already present in the area since several years. These organisations have developed an excellent understanding of the social context and demonstrated their ability to maintain external and local field-staff operating under hardship conditions in the area of intervention. During the last year, under the (EU financed) coordinated action programme, valuable technical documents for intensified coaching activities in institution building and irrigation network rehabilitation have been elaborated by CEFA staff.

In respect to the increased volume and complexity of the rehabilitation works on the irrigation system and the collateral activities, the set-up of a special operation unit may however be justified. This Unit would (a) coordinate the interventions of the NGO and eventual other organisations in the project area, (b) provide special expert input and backstopping to the field staff, (c) assure close monitoring and quality control of project operations. As long as security problems are not settled permanently, this Unit would preferably be based in Nairobi.

#### **4.3 Implementing Phase II of the Study**

The field-missions during phase II of the Study are planned to take place during the months of May and June, when the water levels are high in river and canals and the crops in the fields can best be observed.

Given the crucial importance of irrigation in the recovery strategy, it appears necessary to complete the team by an additional irrigation engineer during Phase II. The experts' inputs will be the evaluation of the different implementation scenarios (extent, location, timing, mode of execution) and to contribute to selection of the most preferable option to be implemented.

However, under the option of diversification, it is justified to reduce the marketing experts intervention and concentrate on the survey of the local/ domestic markets for agricultural products of the project area.



## **5 Annexes**

**Team Phase I:** Hans Hack, Agro economist/Team leader  
Hector McKilligan, Agronomist

### **5.1 Annex I: Time-Schedule and Activities**

The execution of the Study was commissioned to EURETA under a framework contract on 20<sup>th</sup> Nov. 02.

13<sup>th</sup> Feb. 03: arrival of start-up team for the study, H. Hack, agro economist/ team leader and H. McKilligan, agronomist arrived in Nairobi

13<sup>th</sup> to 16<sup>th</sup> Feb: discussions/data collection Nairobi, interviews with (EC Somali Unit, CEFA, FSAU, former Somali Banana growers, representative of de Nadai-Group)

17<sup>th</sup> to 22<sup>nd</sup> Feb: field visit to Somalia/Merca; field trips within Janaale-Bulo Mareta area; discussions with Staff of CEFA, CARE, individual Banana Farmers, Small Farmer's Association (Somalta'ab), Banana Farmers Association (SHEFA), study of technical documentation prepared by CEFA.

23<sup>rd</sup> Feb to 03<sup>rd</sup> March: further data collection and meetings with stakeholders. Special meeting with Agriculture Working Group of SACB.

03<sup>rd</sup> March Wrap-up meeting with EC Somali Unit.

During all stages of their presence in Nairobi and Somalia, the Consultants work was effectively facilitated by excellent support, practical assistance and frank cooperation received, especially from EC-Somali Unit and CEFA staff in Merca.

The Consultants did not encounter any security problem while in Somalia.

### **5.2 Annex II: Persons Met**

Christoph Langenkamp, Rural Development TA, EU Somalia Unit, Nairobi.

Eric Beaume, First Secretary, EU Somalia Unit, Nairobi.

Alberto Fait, Coordinator (outgoing), CEFA – Somalia, Nairobi.

Francesco Baldo, Coordinator, CEFA – Somalia, Nairobi.

Guenter Wessel, Project Manager, CEFA – Somalia.

Buzz Sharp, FSAU – Food Security Assessment Unit, FAO, Nairobi.

Abdi Salat Dahir, Consultant & former Somali banana farmer, Nairobi.

Mohamed Oday Omar, Agronomist & former Somali banana farmer, Nairobi.

Mohamed Ahamed Sheikh, Snr. Agronomist, CEFA, Somalia.

Mahmoud Mohamed Nur, Irrigation Engineer/Surveyor, CEFA, Somalia.

Osman Ali Asayir, Chairman Somalta'ab (small scale farmers association), Shelembot, Somalia.

Colonel Abdu Hakim Abdullahi Sultan, Deputy Chairman, SHEFA –Shebelli Fruit Association (banana farmers association), Merca District, Somalia.

Farm staff of Dr Osman Adan Abdulla, banana farmer, Merca District, Somalia.

Farm staff of Osman Abdu Giile & Osman Ulusow, banana farmers, Merca District, Somalia.

Adan Mohammed Heyle, banana farmer, Merca District, Somalia.

Lex Kassenberg, Coordinator, CARE - Somalia, Nairobi.

Hans Nagel, Project Coordinator, SHARP (Shebelle Agricultural Rehabilitation Project), CARE, Merca, Somalia.

Gobinda Rajbhandari, Community Irrigation Management Specialist, SHARP (Shebelle Agricultural Rehabilitation Project), CARE, Merca, Somalia.

Karanja J. Gikonyo, Project Manager, CONCERN, Merca, Somalia.

Abdirizak A. Shakur Warsame, Personnel & Inventory Manager, Shebelle Agro Products Ltd., (banana exporters), Merca, Somalia.

Amin Sh. Elmi, Deputy Manager, Shebelle Agro Products Ltd., (banana exporters), Merca, Somalia.

Johan du Toit, Agronomist, CEFA, Somalia.

Edward Baars, Agronomist/Community Mobilisation Specialist, CEFA, Somalia.

Vittorio Travaglini, De Nadai Group (former Somali banana exporters), Nairobi.

Peter Muthigani, Irrigation Engineer, CEFA, Somalia.

Dr. Manfred van Eckert,, Regional Director, GTZ, Nairobi

Arsfod Ngenoa, Programme Officer, GTZ, Nairobi

### **5.3 Annex III: Documents Consulted**

“Homboy Area and Smallholder Banana Cultivation in the Lower Juba Valley and Assessment of Agricultural Benefits”, Main Report, Sir M. Macdonald & Partners Ltd., July 1987.

“Genale-Bulo Marerta Project”, Annex IV, Existing Agriculture, Sir M. Macdonald & Partners Ltd., July 1978.

"Genale-Bulo Marerta Project", Annex VI, Potential for Agricultural Development, Sir M. Macdonald & Partners Ltd., July 1978.

"The Field Atlas of Settlements in Somalia", 2000 Edition, UNDP/DIMU, Nairobi.

"Agriculture in the Regions along the Shabelle", Istituto Agronomico per L'Oltremare – Firenze, by M.Khalif & H. Ismail, 1989.

"The Agroclimatology of Somalia", Technical Report No. 12, Ministry of Agriculture, Somali Democratic Republic, FEWS project, 1988.

"Making Ends Meet, An Introduction to Rural Livelihoods in Somalia", Alexandra France & Buzz Sharp, FSAU (Food Security Assessment Unit), FAO, Nairobi, August 2002.

"FOCUS - 2002 Gu Season and Food Security Implications for Somalia in the coming year", FSAU, FAO, Nairobi, November 2002.

"Food Economy baseline Profiles, Shebelle Riverine: Irrigated maize", FSAU, FAO, Nairobi, 2000.

"Monthly Food Security Report, Somalia", FSAU, FAO, Nairobi, February 2003.

Weheliye, Nur A., The present role of the banana sub sector in the Somali economy and its political and social ramifications. European Commission-Somali Unit, Nairobi, 1996

France, Alexandra, , Making ends meet. An introduction to rural livelihood in Somalia. FSAU Nairobi 2002.

Marchal, Roland, Survey of Mogadishu's economy. EC Somali Unit, Nairobi, 2002

UNDOS, United Nations Office for Somalia, 1997, Lower Shabelle region Study on governance, Nairobi

European Commission Strategy for the Implementation of Special Aid to Somalia 2002 – 2007, February 2002

UNCTAD, Market information on Banana: Economic Policies, Market ,Market Chain, 2002

FAO, Intergovernmental Group on Bananas and Tropical Fruits:

- Projections for Supply and Demand of Bananas to 2005, Australia 1999
- Le Marché de la Banane Biologique et de la Banane du Commerce équitable, 1999
- Assessment of the New (April 2001) Banana Import Regime in the European Community (EC), 2001
- Banana Statistics, 1999

## **5.4 Annex IV: Web-Sources on Banana Prices, Costs and Trade**

banana prices

<http://www.nass.usda.gov/hi/fruit/annban.htm>

<http://www.bananalink.org.uk/>

<http://www.citinv.it/associazioni/CNMS/archivio/strategie/confebana.html>

social costs of bananas

[http://www.eya.ca/mainresources/TWC\\_PDFs/TWC7.pdf](http://www.eya.ca/mainresources/TWC_PDFs/TWC7.pdf)

table of imports, exports etc.

[http://www.fao.org/DOCREP/003/X7470E/x7470e03.htm#P2691\\_34545](http://www.fao.org/DOCREP/003/X7470E/x7470e03.htm#P2691_34545)