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**INSTITUTIONAL ARRANGEMENTS AND STRUCTURE OF THE
BANANA AND TROPICAL FRUIT MARKETS IN PRODUCING
COUNTRIES AND THEIR IMPACT ON INCOME LEVELS OF
SMALLHOLDERS - COLOMBIA¹**

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Colombian exporting bananas (1995-2010):

**market and structure developments oriented to
small-scale producers**

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Introduction

Within the last fifteen years the Colombian banana sector redefined its priorities. From concerns about the violence in the regions of production, the new concerns are on exchange rate and pressures of international prices. The balance of land's ownership and relationships between producers and traders change composition every day. Small-scale farmers are aware of these changes but until now are not able to avoid them. Thus, they need additional support to improve organizational processes, product quality, credit availability among others to adjust to the coming conditions of the market and the arrangements through the supply chain.

The purpose of this document is to review the market and institutional structures of the Colombian banana industry in order to make recommendations targeted to improve small-scale producers' added value through the supply chain. In the first part, there is a preliminary characterization of the banana sector in Colombia (1995 – 2010) to review and analyze the major developments and influencing factors on the supply chain. This section has a domestic perspective accompanied by some milestones from the international market that affected directly the Colombian banana sector. In a second section, it examines the supply chain particularly the primary stages: production and trading. At this section, an analysis of the costs of production and FOB prices will give a preliminary perspective of the margins that have to be taken into account to improve added value to smallholders. In the third section, there is a review of the main institutional arrangements that support and are related to the banana sector. Finally, the fourth section draws conclusions and recommendations based on the previous analysis and the perceptions of agents directly related to the supply chain.

1. Market Structure and Development of Banana in Colombia (1995-2010)

In this section, there is a brief description of the banana industry in Colombia, compiling some of the institutional and market milestones affecting the development of the banana industry in Colombia. It should be noted that the approach of this study is domestic, but aspects of international order as the Common Market of Bananas from the European Union affects the development of the institutional framework and market in Colombia.

1.1. *Characterization of the production of banana exports*

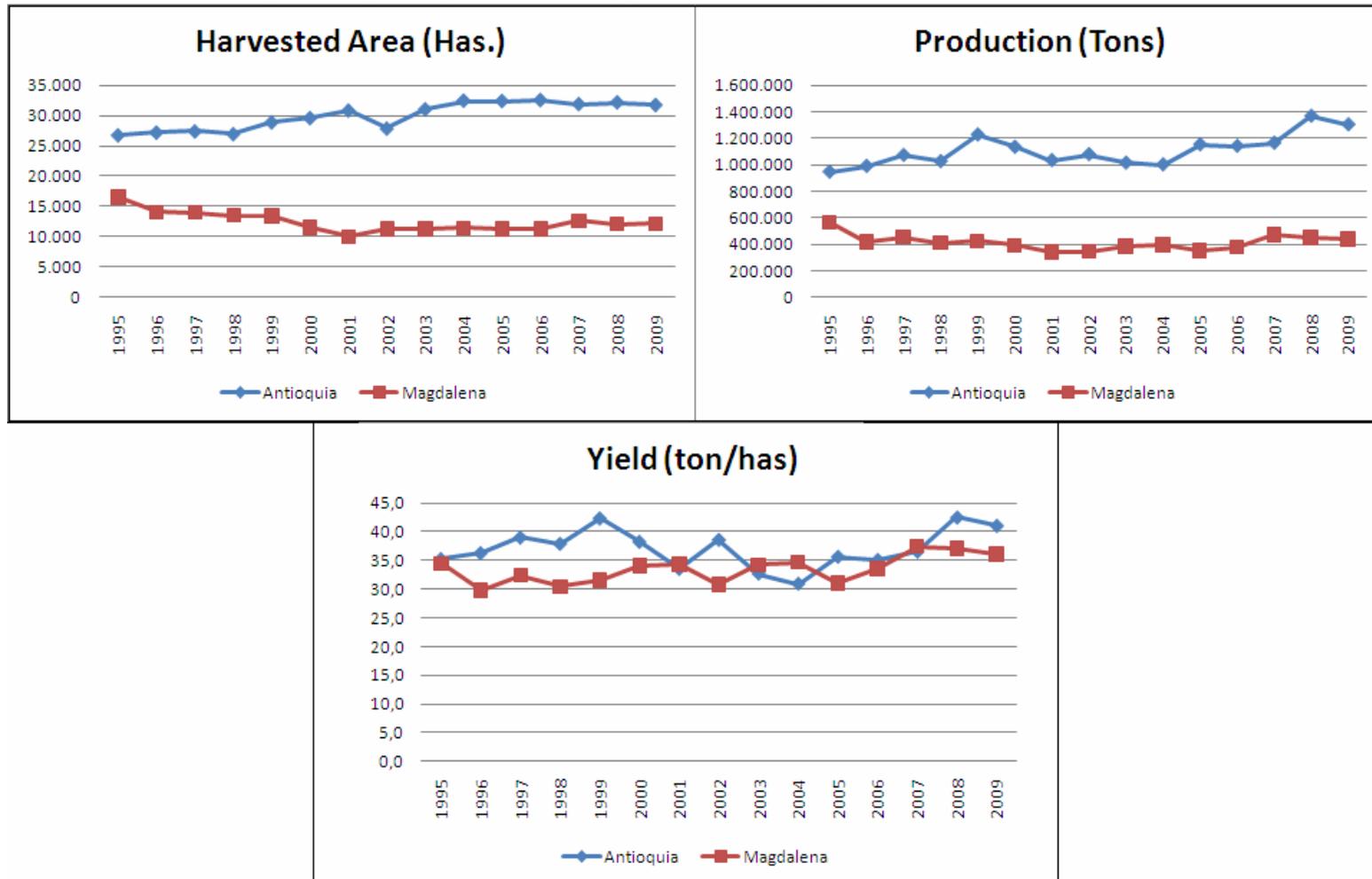
Banana production for export in Colombia is divided geographically into two departments: the northeastern region of the department of Magdalena and the northwestern region of the department of Antioquia (Urabá). Bananas for domestic consumption (so called Criollo: common varieties and murrapo²) are produced in several Departments of the country: Antioquia, Tolima and Valle del Cauca, but this paper focuses exclusively on exporting bananas.

According to the Association of Banana Growers of Colombia – AUGURA (1999 - 2009)³, the production area of Magdalena was in sharp decline since the early 90's, with a break point in 2001, when it began a process of stabilization (in area) that continues during the 2000s. By contrast, the area of Urabá increased the plantation area since 1998 with a sharp decline in 2002. From 2003 on there is a recovery and remain relatively stable with slight declines at the end of the first decade of 2000s. The reduction in area affects directly the Magdalena production, maintaining an average of 395,000 tonnes in the decade (2000-2009). In the Urabá, production has been increasing, with a peak production in 2008 to 1,366,957 tonnes. Yield has been quite variable, with averages for the period 1995-2009 of 33.5 ton/ha. for the Magdalena and 41 ton/ha. for Urabá (see Graph 1).

² Variety of bananas, smaller in size and sweeter than the most exporting variety Cavendish.

³ AUGURA data comes from affiliated growers and traders. Vilorio (2008) features differences between information from AUGURA and the Departamento Nacional de Estadística – DANE (State's statistics agency). Data differences in some cases is insignificant but for specific years differences are more than 10%. The Encuesta Nacional Agropecuaria (2009) (Agricultural census) based on DANE figures claims a production area of 42,655 hectares, producing 1,724,707 tons, meanwhile AUGURA estimation is 44,500 hectares. For this document most of the information is based on AUGURA data which suppose to be reviewed every year and up to date.

Graph 1. Exporting banana area, production and yield in Colombia (1995-2009)

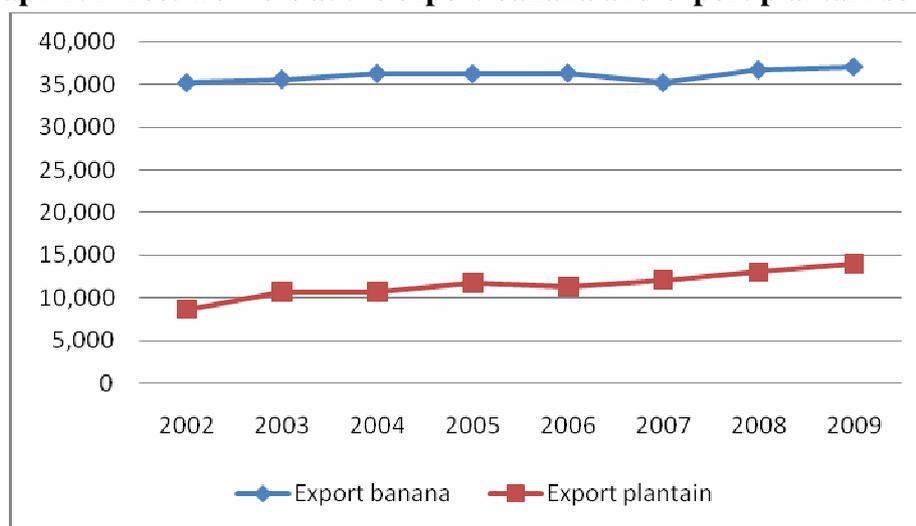


Source: Own elaboration based on AUGURA

By the '90s, productivity was similar to both regions. As confirmed by Bonet (2000), the type of tech-production in Urabá increased its productivity gap against the Magdalena. Also, as shown in the next section, climatic factors and area reduction affects yields differently between both areas. Paradoxically, the rise of the sector in Magdalena by the 90s and further deterioration has similar reasons to the ones by the early twentieth century, as stated by Meisel (2004:21) "the banana sector in Magdalena decreased due to (...) combination of pests (Sigatoka), deterioration in soil, labor disputes and increasing government intervention (...) and the increase in the relative costs of production."

Regarding employment data, the Ministry of Agriculture and Rural Development – MADR provides employment data for the period 2002-2009, which shows that the industry employs directly in production an average of 36,077 people.

Graph 2. Direct workers at the export banana and export plantain sectors



Source: Own elaboration based on Agronet - MADR 2010

For 2009, the total directly employed population corresponds to 1.5% of total employment in agriculture and 2% if one takes into account only permanent crops. Indirect jobs generated by this activity has only estimated figures, accounting for 60,000 in Urabá and 15,000 in Magdalena (AUGURA, 2010). At this point it is noteworthy that a group of export plantain producers (in Urabá), mostly with small-scale infrastructure has an increasing participation to reach international markets. In the sector of plantain

for export 14,021 people are directly employed, that is 38% (and increasing) of employees of the banana sector.

The Departamento Nacional de Planeación - DNP (National Planning Agency) elaborated the Domestic Agenda for Productivity and Competitiveness (2007a & 2007b). Its purpose was to suggest productive “bets” for Urabá and Magdalena to consolidate and/or increase their advantages and shares in international markets⁴.

Regarding the Uraba the DNP states as advantages: "The abundant labor supply and expertise for the production, availability of suitable land with excellent lighting conditions, rainfall and humidity, the proximity to the port of Turbo, the production infrastructure and the existence of a research center" (DNP 2007a: 36).

On the other hand, Magdalena focuses on organic bananas, using the small-scale organizational structure. The advantages mentioned by the DNP are: "the characteristics of the port of Santa Marta where the depth allows large ships to dock. In addition, the port is sheltered from winds, located in a closed bay, to just few miles and sailing time to the east coast of the U.S. as well as Japan and the rest of Asia. For the geographical position of the region the fruit gets more hours of sunlight per day during its production cycle and changing temperature between night and day are unlikely. These two climatic conditions in Magdalena will give the fruit its exceptional quality, as well as lower operating costs (by 30% less than other regions of the country)" (DNP 2007b: 23).

1.2. Chronology: institutional and market framework

From the Colombian point of view, the development of the banana sector in the last 15 years are divided into three key periods also corresponding to three presidential terms that have marked the sector’s development from the economical and social perspective.

⁴ The Agenda Interna para Antioquia (Urabá) (Regional planning agenda) states: “to consolidate the positive trend of banana production and export of bananas from Antioquia” (DNP 2007a: 36). In Magdalena, the agenda appoints specifically to organic bananas: “In 2015, Magdalena will have at least 15,000 hectares of bananas, a minimum yield of 500 boxes (18kg) per year per hectare and a cost of less than USD 3per box in order to start exporting organic bananas.” (DNP 2007b: 23)

1.2.1. 1995-1998: financial crisis due to political, climate and market uncertainty

This period was characterized mainly by a social outreach to the sector. However, due to allegations of corruption given to the central government, main social aims could not be consolidated.

The President of Colombia, Ernesto Samper, promoted economic incentives for non-traditional exports, among others: bananas and flowers. The most expected incentive for the banana industry, was the so called “Certificado de Reembolso Tributario” -CERT, a tax rebate for producers/exporters actually exporting. From the bulk of products with CERT, bananas had an additional rebate. While most products enjoyed a 2.5% rebate, the central government allocated 5% for bananas. At that time, the measure was justified in this sector for reasons such as: employment coverage, social problems in the banana-producing regions and the effect of revaluation in an export oriented product. A further factor which justified the additional support was the climate crisis. In 1996, a devastating period of storms (the worse in the study period) affected (10,000 hectares and over 25,000 families).

From the standpoint of financing, two public entities were responsible for lending to producers and traders. In the first instance, the Banco de Comercio Exterior - Bancoldex, approved loans to promote exports, and on appeal the Instituto de Fomento Industrial – IFI and the Fondo para el Financiamiento Agropecuario - FIANAGRO, made support for infrastructure and sanitary issues. Although the loans were originated in these two entities, producers/traders were able to ask for those credits through commercial banks. It should be noted that the structural conditions of the sector 15 years later were not enough time to pay financial compromises to many producers (see section 1.2.3). In fact, traditional exporters from Colombia (UNIBAN and BANACOL) had to refinance their debts with the declaration of potential bankruptcy. Therefore, government served as guarantee to support loans and refinancing programs. Despite intentions, CERT guarantees and government backed loans came late, mainly due to bureaucracy. Additionally, at the end of this period commitments with the WTO, force the government to announce a gradual dismantling of the CERT incentive.

As a result of constant weather problems, the government established an insurance against climate disasters. Even as emerging suggestion at that time, it was the beginning of a more consolidated insurance system for the subsequent decade. Also, guilds especially AUGURA in Urabá and GUINEOS in the Magdalena motivated trading companies to implement socially and environmentally friendly schemes, this as outreach to world market demands. In spite of the efforts to advance in socio-economical matters, the guerrillas were considered at this time as the biggest obstacle to the competitiveness of the sector, the waves of violence that included murder and kidnapping gave to the economic and social development of the sector a feeling of worsening.

1.2.2. 1998-2002: Monitoring governmental policies, social tension and continuous economic uncertainty

The government that took office in August 1998 with President Andres Pastrana had as a main objective to have a peaceful approach to insurgent groups. Despite the efforts, the turf war between guerrillas and paramilitary groups in the banana regions did not improve the competitive conditions of the previous period, union leaders were killed and so-called "targeted" assassinations were quite common.

Climate change also affected the production areas, particularly in Magdalena, with new outbreaks of diseases such as Moko and Black Sigatoka. As usual, floods and windstorms appear in the Magdalena area, causing millions in economic losses.

Related to financing issues, in January 1999 many producers/traders had not yet received refunds from the CERT, moreover export licenses were removed, since the WTO and the European Court of Justice declared them illegal. Export licenses were an arrangement between Colombia and the European Union (under the so-called Framework Agreement) to give control and certainty to the quota management of Colombian exports.

From time to time, aid arrived to producers, but Magdalena guilds complained that such aid was higher for Urabá than for Magdalena. Magdalena's situation was so critical in 1999, that many banana producers were asking support for diversification of products. As a result, in 2000 President Pastrana made an agreement with local authorities from

Magdalena to reconvert 3,000 hectares of bananas into 2,000 hectares for palm oil⁵ and 1,000 hectares for cocoa.

Debts from 1996 were declared unpayable by many producers and force the government to make new proposals for refinancing before commercial institutions and public entities. Among the measurements made in early 2001, a special CERT was reactivated for bananas and the central government reimbursed debts by CERT for about USD 74 million. The financial support was insufficient, 634 producers of Magdalena were declared in moratorium of payments. Furthermore, advances on the insurance (established in the previous period) were momentaneous in a legal limbo (June 1999), since the Caja Agraria (a State-owned bank to support agriculture) was in process of liquidation. Only in September 2001, the government began to support the farmers (banana only) subsidizing part of the monthly insurance fee.

The more concrete progress in the sector at this period was presented in July 2001 when the National Agreement on Competitiveness for the Banana Sector was signed. A commitment to public, private sectors and academia created to propel the banana industry into international markets. Agreements included refinancing programs, international promotion and technical support. It should be noticed that in this period is one of the greatest contributions in social terms by AUGURA, launching a program of social and environmental management for the banana sector (BANATURA). The program started with 20 pilot farms in the region of Urabá .

1.2.3. 2002-2010: From stability to growth and consolidation

Although this period has been characterized by uncertainty in international markets, particularly the European Common Market on bananas and the volatility of the exchange rate, a factor that has significantly helped the regional competitiveness was the “relative” pacification of the banana producing regions.

The period begins with a tense calm: a forced withdrawal of the occupation by guerrillas replaced for the occupation of paramilitary groups instead. As time passes and civil society is strengthened, paramilitary groups demobilize (partially) too, the working unions explicitly reject illegal groups and together with associations of growers and

⁵ Diaz & Bayona (2008) state that 10 hectares reconverted from banana to palm oil means 9 less workers.

trading companies encourage social activities, to permeate violence. An important international milestone in this period was the acceptance of Chiquita (2007) in its responsibility of financing paramilitary groups and the assumption by other companies that have done the same. Chiquita receives a monetary punishment from the U.S. justice but workers, once affected by violence, expressed their disagreement with the decision of the U.S. courts, since they were not taken into account and properly compensated.

The rapprochement between public and private sector has their peak in May/June 2004 with the direct mediation of President Alvaro Uribe Velez in the longest strike (with 16 days) since 1989; wage differentials and lack of regional infrastructure were the trigger elements. Employers and workers reached an agreement and the government pledged to make investments over USD 4.5 million, mainly for irrigation infrastructure. Since then the collective agreements are arranged relatively easy, with little differences in rates of wage adjustment.

Something that did not change so much from previous periods, were the devastating effects of rains and floods, particularly in Magdalena. Each year by November storms and winds cause damage and destruction in the region. Although an insurance system was in place some time ago and even it diversified into other agricultural products, small-scale farmers (mostly uninsured) were the most affected.

Until that time, the banana sector was highly dependent on financial support and CERT as only tools for competitiveness. Thus, the government supported by the guilds promotes new destination markets and signed sanitary protocols with non-traditional markets such as China, Russia and countries of the Far East. In addition by 2002 Uraba's local government with the support of AUGURA promotes a productive reconversion to agricultural products (different to bananas), textiles and appeal industry and livestock. All those sectors with certain activity at the region started to produce commercially in 2003. Organizations like the Servicio Nacional de Aprendizaje – SENA (State's agency for technical education) and the Business Incubator from Antioquia were fundamental for the development of these projects.

In the banana sector itself, social programs and environmental management promoted by BANATURA took off and were no longer pilot projects to become engines of

productivity in the sector. The set of projects promoted by BANATURA were supported in the technical development by a joint effort between AUGURA and SENA.

With the gradual dismantling of the CERT, tools such as the agricultural insurance are necessary to support the sector. While, the main concern for competitiveness from 1995 to 1998 was the regional violence, for the period 2005-2010 was the constant appreciation of the peso against the dollar⁶.

A specific support for the dollar's decline was the hedging incentive of foreign currencies (exclusive to flower and banana sectors). It was created in November 2004 and defined as a contribution of Col\$ 200 for every dollar exported. However, the incentive had problems of implementation due to lack of information and corruption, as suggested by the guilds and government respectively. Only in April 2005, a portion of resources is distributed (less than the amount proposed in the first instance). Just a month later, due to commitments with the International Monetary Fund (May 2005), this type of aid for export (subsidies) were excluded and no longer available. So, the only government supports rest on direct payments for fumigation (January 2006 to April 2007), credits (May 2006 and October 2010), export promotion support (June 2006), and hedging programs against the falling exchange rate and international prices (January 2007 and October 2010).

2. Producing and trading bananas

The banana industry in Colombia depends on changes of international prices, is characterized by economies of scale and is highly concentrated in the trading stage (multinational and national companies with international marketing projections) (IICA, 2005). A main institutional arrangement to ensure the competitiveness of exporting banana was the so-called: Agreement on Export Competitiveness for Bananas (June 2000) and the Competitiveness Agreement for Bananas from Magdalena (March 2001). These agreements encourage the participation of different sectors (public and private) to develop strategies to enforce the sector against the main problems that affected it at the time: violence, climate change and to a lesser extent the exchange rate. It is in the

⁶ Vilorio (2008:21) di dan extense analysis of revaluation effects in the banana sector at the Magdalena region: "pressure for the peso appreciation are related with the massive entrance of capitals and Foreign Direct Investment (mainly due to oil and gas), improvement in the exchange terms, increasing exports, increasing inflow of remittances and foreign debt".

middle of 2000s when the exchange rate becomes the most important variable in determining the policies and sector projections. For each of the periods described above, institutional arrangements have been made to address the problems, this section describes the actors in the supply chain, and the subsequent section introduces related and supporting industries describing some instruments of policy.

2.1. Production agents

Urabá farms are mainly medium and large-scale. On the other hand, Magdalena is broadly concentrated on small-scale growers with less than 15 hectares. Farms for export are certified in quality assurance standards, environmental management and, increasingly, in good agricultural practices (backed by GlobalGAP).

Structures, on one hand of large-scale and on the other hand by small scale, can be seen more clearly in the Magdalena region, where they coexist. Large-scale producers (large and medium) are directly linked to international traders having all the infrastructure and technology to develop its business. According to Villalobos (2008), large and medium producers represent 25% of all producers and 85% of cultivated area. In contrast, small-scale producers are basically a family group that performs all the work of cultivation and harvesting, but due to poor technologies, productivity is significantly lower, accounting for 75% of all producers and 15% of the cultivated area (Villalobos, 2008).

Table 1. Growers Distribution in Magdalena (2008)

Farm size	Number of Growers 2007/1	Number of Growers 2008/2	Área (Ha) 2008/2
Less than 1 Ha	491	19	13
Between 1 and 5		475	1102
Between 5 and 10	148	100	724
Between 10 and 20		55	812
Between 20 and 50	101	45	2405
Over 50		77	7200

Source: /1 ASBAMA /2 AUGURA

Small-scale farmers must purchase supplies through contractual arrangements with the traders and it is through producer associations the only way to establish some sort of bargaining power for the purchase of inputs and selling their own production. Producers

must ensure the quality and characteristics demanded by traders as established in the contracts that in many cases forces exclusivity of sourcing.

Land ownership by small-scale farmers is also diverse, ranging from self-owned, leased or owned by the trader but worked on small plots by small-scale farmers. The latter scheme has gained strength since it ensures a constant and consistent supply of bananas to traders.

In general, the associative system and/or cooperatives of small-scale producers have a level of standardization in processes and products, which enhances their relationship with traders. Cooperatives help in financing and marketing the production. When a cooperative brings together a group of smaller cooperatives, it becomes a “second floor cooperative” to support marketing and technical operations, financing, management and in some cases social projects (Villalobos, 2008). Cooperatives eventually give security, backup and reduced intermediation which may ultimately be reflected in better prices and certainty on contract conditions.

Table 2. Associations scheme in Magdalena (2008)

ASSOCIATIONS	COOPERATIVES	FARMS	HECTARES	TRADING COMPANY	SOCIAL ORGANIZATION
AUGURA	Agroban	27	174,75	PROBAN	FUNDAPROBAN
	Coopromag	45	128,50	CARCAS LTDA	
	Arhuacos	52	164,80	PROBAN	FUNDAPROBAN
	Coobafrio	65	193,70	PROBAN	FUNDAPROBAN
	Asobanar	54	768,90	EXPOCARIBE	FUNDAUNIBAN
	Coopebam	28	100,79	DOMESTIC SALES	
	Coobamag	45	130,84	BANACOL	CORBANACOL
	Empreban	37	98,73	PROBAN	
	Independientes +UNIBAN	46	1255,10	UNIBAN	FUNDAUNIBAN
	Independientes +BANACOL	24	1929,16	BANACOL	CORBANACOL
Independientes +DOLE	8	660,00	DOLE		
ASBAMA	OWN FARMS FROM TRADING COMPANIES	26	1445,99	TECBACO	
		22	516,27	EXPOCARIBE	FUNDAUNIBAN
		12	213,00	BANACOL	CORBANACOL
		2	125,41	LA SAMARIA	
		1	239,30	C.I. BANADDEX	
	Coobafrio	1	6,70	PROBAN	FUNDAPROBAN
	Eduardo Díaz-Granados	1	50,00	BANASAN	

Source: AUGURA quoted by Villalobos (2008).

In the region of Magdalena, which shows the configuration of small-scale producers and associations can be observed the concentration of the trading companies also in production.

By observing the pattern of association, it is clearly identified that when taken individually, the number of farms (496, some owned by trading companies) has to negotiate with no more than 10 trading companies, which clearly appoints an oligopolistic pattern by traders.

The literature on costs of banana production in Colombia is very limited due to on one hand to strategic reasons and on the other to the dispersion between different scales of production. Espinal, (2005: 39) estimated the cost of production for a farm of less than 5 hectares in Magdalena in about USD 3.17 per box (productivity of 1,664 boxes/ha./year). On the other hand, a farmer of 100 hectares had a cost of USD 3.5 dollars per box (productivity of 1,921 boxes per hectare per year). For 2001 in the Urabá the cost of a box of bananas was estimated at USD 3.83. Viloría (2008) quoting a study by the Banco Agrario de Colombia estimated the cost of production per tonne in Col \$ 778,226 for an average production of 20 tons / hectare (1,103 boxes/ha./year). The Banco Agrario estimation concluded that banana growers could break even with a production of about 22.8 tons per hectare (1,257 boxes/ha./year). Other estimates quoted by Viloría concluded that reasonable returns for a producer should consider a productivity of 2,600 boxes/ha./year.

The Ministry of Agriculture and the Corporación Colombia Internacional (CCI) have made some approaches to the issue of costs in the banana industry for smallholders too. Although estimates can be very general, they do represent an approximation to the behavior of the costs in a short time period for this sensitive group of producers.

As shown in Table 3 with the structure of costs per hectare for September 2010 from a small-scale producer (less than 15 hectares), the first year of cultivation, involving preparation and suitability of the land, cost represents 22% of the total (Col \$ 4,098,613; USD 2,277).

Table 3. Costs of production (Col\$) of banana exports (first year)

Cycle:15 years

Type of grower:Small (Less than 15 Has)

Date:September 2010

	Total cost	Share %
DIRECT COSTS	16.716.227	89,9
Land adequation	4.098.613	22,0
Adequation	4.098.613	22,0
Planting	816.745	4,4
Culture Maintanance	6.263.255	33,7
Working force	6.183.144	33,2
Inputs application	80.111	0,4
Harvest	372.402	2,0
Inputs	3.730.735	20,1
Propagation material	3.084.540	16,6
Soil fertilizers	596.217	3,2
Fungicides	42.912	0,2
Insecticides	7.067	0,04
Tools and equipment	1.423.363	7,7
Tools	1.155.267	6,2
Equipment	268.096	1,4
Transport of inputs	11.112	0,06
INDIRECT COSTS	1.887.298	10,1
Lease	550.000	3,0
Management ¹	501.487	2,7
Contingences ²	835.811	4,5
TOTAL COST	18.603.5	100
Yield (Kg/Ha)	9.720	
Unit Cost (Kg)	1.914	

(1) 3% over direct costs

(2) 5% over direct costs

Source: Sistema de Información de Precios de Insumos y Factores. Ministerio de Agricultura y Desarrollo Rural - Corporación Colombia Internacional. Calculations: Corporación Colombia Internacional.

In the cultivation itself working force represents 33.2% of total cost (Col \$ 6,183,144; USD 3,435). Finally, the propagation material with 16.6% of the total represents the highest cost in terms of inputs (Col \$ 3,084,540; USD 1,714).

For the cost analysis at the second year, cultivation practices represent 62.9% of the total (Col \$6,020,002; USD 3,344), far from this share, in a second place is the soil fertilizer with 6.9% of the total (Col \$ 670,536; USD 239).

Table 4. Costs of production (Col\$) of banana exports (second year)

Cycle:15 years

Type of grower:Small (Less than 15 Has)

Date:September 2010

	Total cost	Share%
DIRECT COST	8,472,834	87.3
Culture Maintanance	6,100,113	62.9
Working force	6,020,002	62.1
Inputs application	80,111	0.8
Harvest	1,422,977	14.7
Inputs	670,536	6.9
Soil fertilizers	596,217	6.1
Fungicides	42,912	0.4
Insecticides	31,407	0.3
Tools and equipment	268,096	2.8
Equipment	268,096	2.8
Transport of inputs	11,112	0.1
INDIRECT COSTS	1,227,827	12.7
Lease	550,000	5.7
Management ¹	254,185	2.6
Contingences ²	423,642	4.4
TOTAL COSTS	9,700,661	100
Yield (Kg/Ha)	42,120	
Unit Cost (Kg)	230	

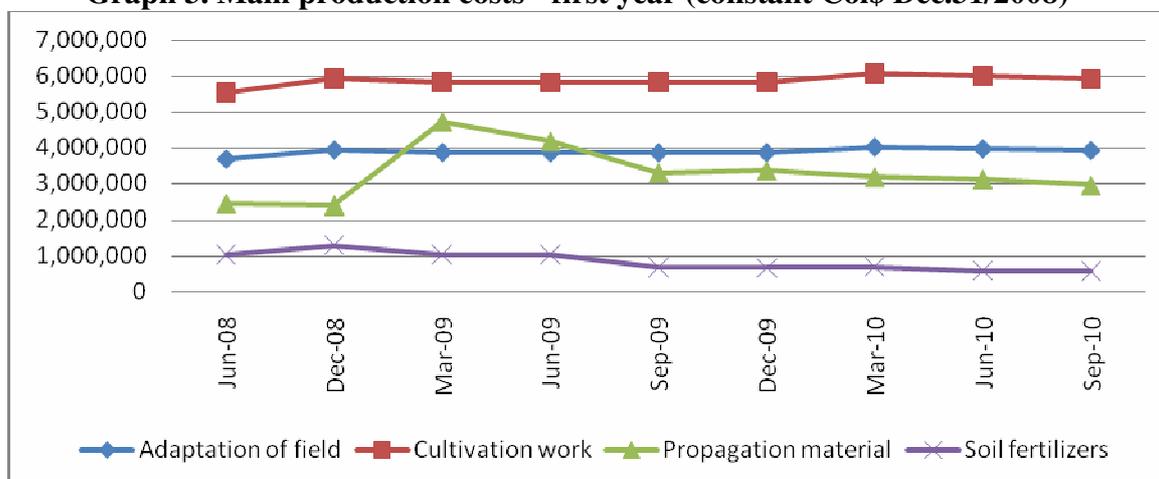
(1) 3% over direct costs

(2) 5% over direct costs

Source: Sistema de Información de Precios de Insumos y Factores. Ministerio de Agricultura y Desarrollo Rural - Corporación Colombia Internacional. Calculations: Corporación Colombia Internacional.

Taking costs with the greater participation for the first year from the second quarter of 2008 until now, the costs of adaptation of soil and cultivation practices have some degree of increase; however in terms of propagation material and fertilizers have slight reductions.

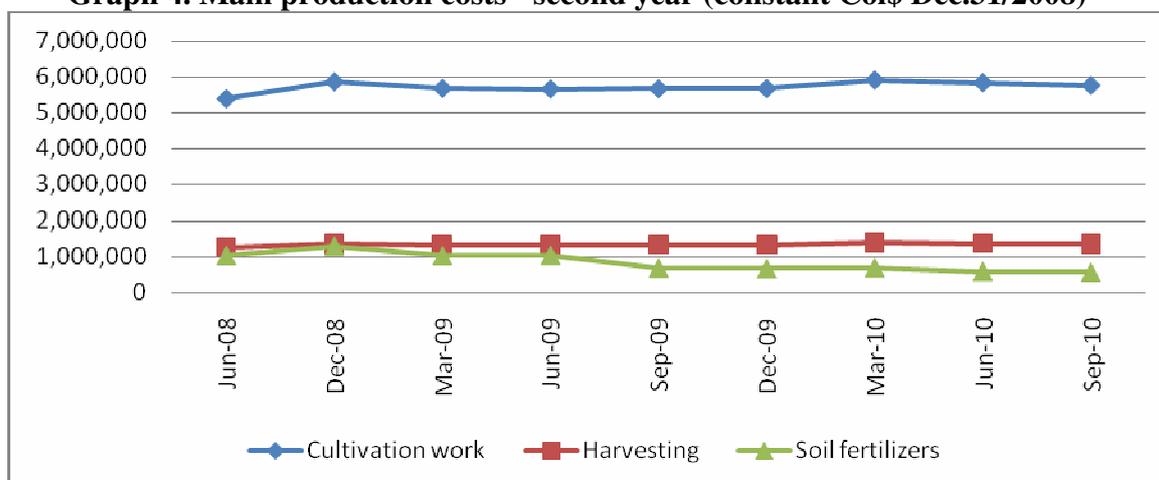
Graph 3. Main production costs - first year (constant Col\$ Dec.31/2008)



Source: Own elaboration based on SIPSA

For the second year the growing trend in cultivation practices and harvesting keeps rising, while fertilizers continue a downward trend.

Graph 4. Main production costs - second year (constant Col\$ Dec.31/2008)



Source: Own elaboration based on SIPSA

The reasons for increasing costs in the working force for cultivation and harvesting are mainly due to local inflationary pressures, while for the decline in both propagation material as fertilizer must have reducing prices associated to oil prices⁷, but especially the effects of the sharp appreciation of the peso against the dollar in recent years, which reduces the cost of inputs, mostly imported. At this point, it should be noted that the costs of fumigation⁸ and drain are mentioned constantly in forums of producers as the variable that affects production, but there is few empirical evidence on this regard⁹.

Working force is still an important variable in the sector. Following, there are some figures on the salary for banana workers¹⁰. The wage of banana workers has been consistently above the minimum wage. For example, by 2010, while a banana worker received Col\$ 566,857 (USD 277), the minimum wage in Colombia was Col\$ 515,000 (USD 252). However, as the wage of banana workers depend on a two-year agreement, usually the increase over the legal minimum wage is favorable for the first year, but it is not for the latter.

⁷Prices of imported inputs in the banana industry are highly associated to oil prices and dollar's exchange rate.

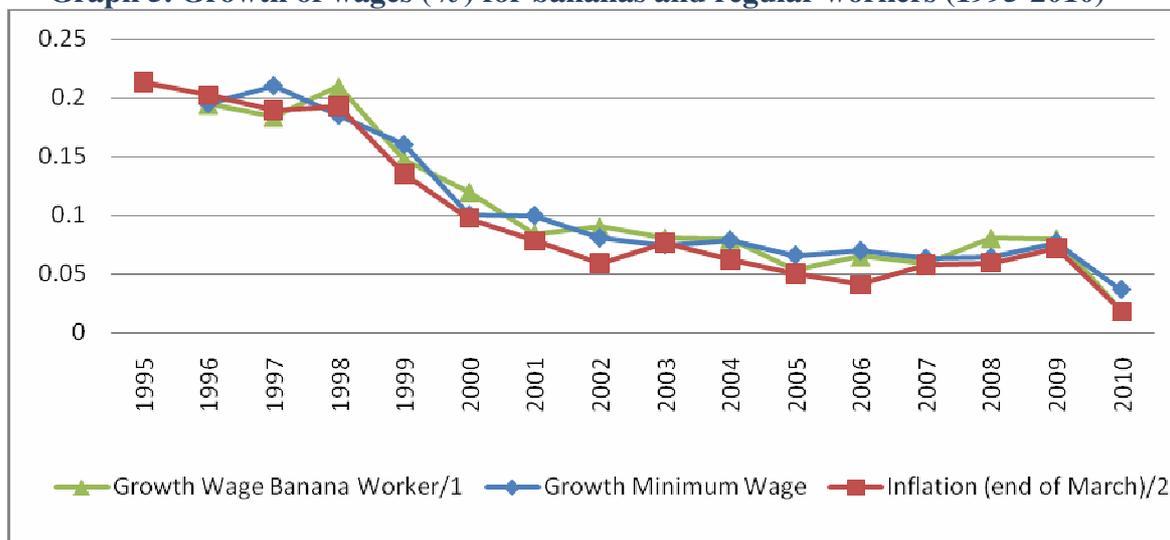
⁸ In areas with high susceptibility to black sigatoka, should be made up to 36 sprays per year

⁹ Villalobos (2008) did an analysis of production costs in the region of Magdalena. Her analysis finds that the drainage and spraying are the major cost components in the area.

¹⁰ The banana workers' wages are agreed in a convention every two years between workers, producers and traders with the mediation of AUGURA and in some cases the government itself. It must be taken into account that comparisons of banana worker's wage is set in March every two years while the minimum wage (for regular workers) is set between December and January each year.

Growth rates of minimum and banana salaries are becoming smaller since they are adjusted according to inflation rate which has a decreasing trend in Colombia since 1991 (see Graph 5).

Graph 5. Growth of wages (%) for bananas and regular workers (1995-2010)



/1 Agreement between workers, producers and trading companies

/2 The wage for banana workers is established every two years by March

Source: Own elaboration based on statistics by AUGURA and Banco de la República.

Although wages for the period 1995-2010 have exceeded inflation, the effects of devaluation have been disruptive to the exporting sector. Dollar revenues due to banana exports are the source of payments of banana workers. Particularly for the period 2004-2010, the revaluation (peso / dollar) has brought a perverse effect on the potential real income of workers.

2.2. *Links between production and trading*

The geographical concentration of crops in the Urabá, allows for a cluster configuration, characterized by vertical integration between producers and traders. Meanwhile, independent producers and cooperatives in the Magdalena sell their production (almost exclusively) to major firms. The following table shows the number of farms and production area, with direct or indirect relationship with each of the trading companies in 2010.

Table 5. Links between growers and traders (2010)

Trading company	Number of Growers	Hectares	% Growers	% Has
MAGDALENA				
INDEPENDENTS	6	55	2,47%	0,14%
C.I. TECBACO S.A	14	1.102,49	5,76%	2,74%
C.I. BANARRICA S.A	4	377,55	1,65%	0,94%
C.I PROBAN S.A	41	2.497,82	16,87%	6,22%
C.I CARCAS LTDA	3	30,15	1,23%	0,08%
C.I BANACOL S.A	11	2.248,30	4,53%	5,60%
C.I LA SAMARIA S.A	1	123	0,41%	0,31%
Total Magdalena	80	6434,31	32,92%	16,02%
URABA				
INDEPENDENTS	1	83,41	0,41%	0,21%
C.I. TROPICAL S.A	11	2.752,16	4,53%	6,85%
C.I. COINDEX S.A.	3	638,91	1,23%	1,59%
C.I. BANARRICA S.A	2	123	0,82%	0,31%
C.I UNIBAN S.A	87	15.169,51	35,80%	37,76%
C.I PROBAN S.A	18	1.182,30	7,41%	2,94%
C.I CONSERBA S.A	14	1.439,87	5,76%	3,58%
C.I BANAFRUT S.A	13	3.344,84	5,35%	8,33%
C.I BANACOL S.A	12	8.346,06	4,94%	20,78%
C.I. BANUR S.A.	2	654,95	0,82%	1,63%
Total Urabá	163	33735,01	67,08%	83,98%
TOTAL	243	40169,32	100,00%	100,00%

Source: Own elaboration based on AUGURA. By 2010 UNIBAN bought PROBAN's interest and in February 2011, BANASAN bought BANACOL's interest in Magdalena.

First thing one can conclude from Table 5 is the concentration of production in the Urabá 83.98% of total area in Colombia; the Magdalena's share is 16.01%. Additionally, 2.88% of producers are classified as independent. That is, they have no formal affiliation with any trader.

PROBAN and TECBACO are the largest traders from the Magdalena region (in number of affiliated growers and area). The same situation happens in Urabá with UNIBAN, but also BANACOL (taking only area).

The interrelationship of producers and traders can see different contractual settings, where: 1) traders have their own land as producers; 2) traders rent land to produce, 3) most producers (grouped in associations) have sales contracts with traders or multinationals and in return producers receive technical assistance, health related

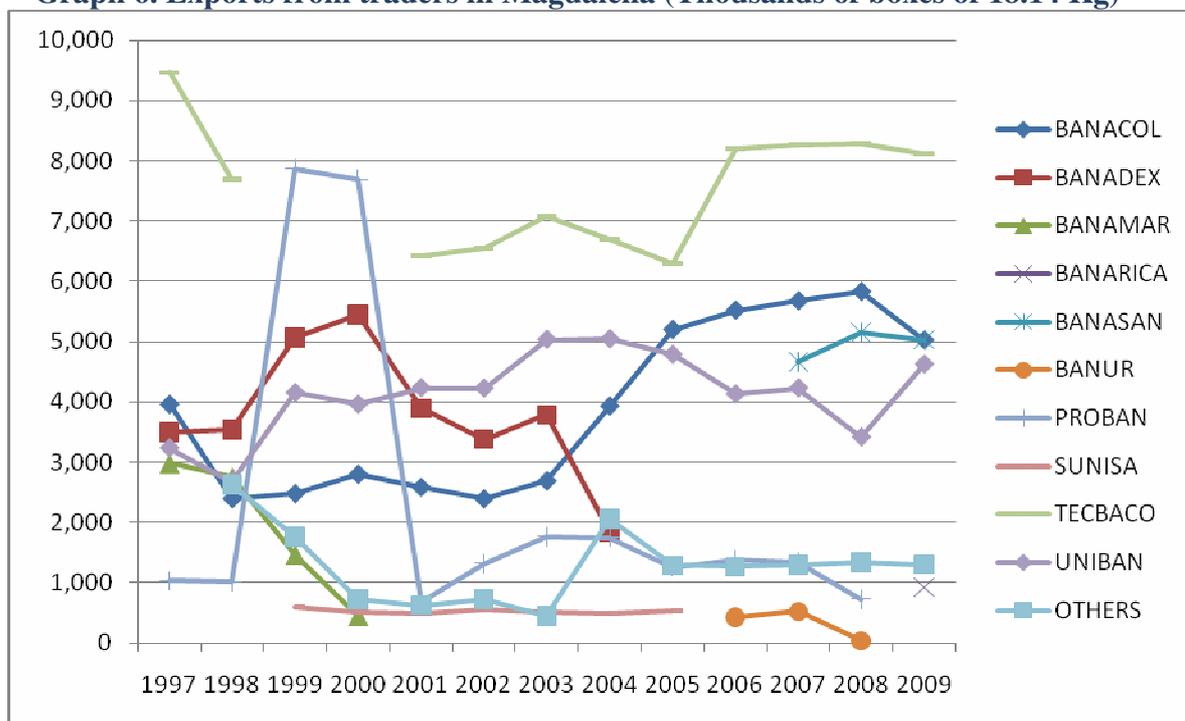
services and of course price guarantee; finally 4) depending on the behavior of international supply and therefore in international prices, traders also buy bananas without contracts (spot) to producers. Configurations 1 and 2 are best seen to show the vertical integration of trading companies, while the 3 is the most common configuration for small and medium-scale producers.

2.3. Trading agents

Traders in Colombia are eminently owned by domestic capital. Regarding multinational companies, by 2010, only Dole has direct interests of production through its subsidiary in Magdalena, Técnicas Baltim de Colombia SA – TECBACO SA who is also the largest exporter from the area of Magdalena. Important domestic firms stand BANACOL initiating a process of intensification of area since 2004 (including land acquisitions and mergers with other traders) and UNIBAN which has always maintained a strong presence.

For the late 2000, BANASAN, as a group of producers/traders came together to create its own unified trading company and join the majority of the so-called "independent" from the Magdalena region.

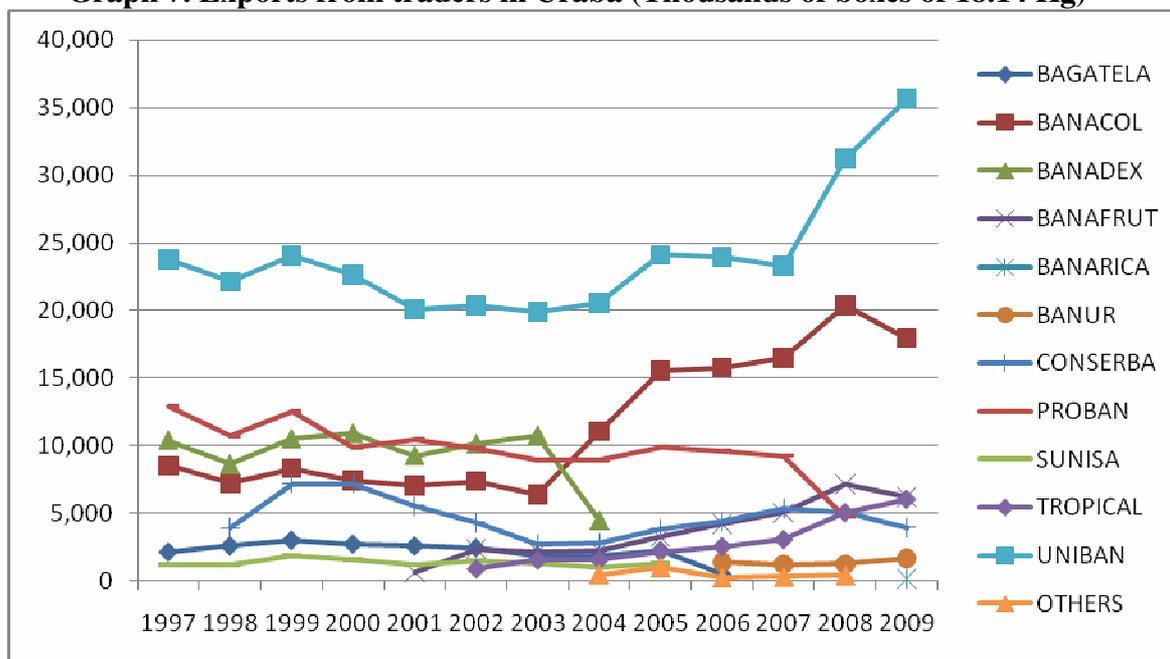
Graph 6. Exports from traders in Magdalena (Thousands of boxes of 18.14 Kg)



Source: Own elaboration based on information by AUGURA

In the region of Urabá, the most important trader is UNIBAN, which exports increase exponentially since 2007 by acquiring assets from other traders and independent land. As in the Magdalena region, BANACOL intensifies their farms since 2004 but withdrew gradually since 2010.

Graph 7. Exports from traders in Urabá (Thousands of boxes of 18.14 Kg)



Source: Own elaboration based on information by AUGURA

Major acquisitions/mergers between trading companies highlights in 2004 BANACOL with BANADEX (a subsidiary of Chiquita) (BANACOL, 2011), BANASAN bought BANACOL interest in Magdalena, and PROBANA becomes part of PROBANA.

It should be noted that both UNIBAN and BANACOL are the only Colombian companies exporting directly its own marks/labels. The rest of companies make a marketing process either with UNIBAN, BANACOL and/or TECBACO (Dole) in Colombia or any of the multinational companies (Chiquita, Dole, Del Monte and/or Fyffes).

Overall exports increase in volume (3.7% on average) and price (3.3% on average) for the period 1995-2009 despite revaluation effects, European restrictions and domestic situations as described in previous sections.

Table 6. Total banana exports in Colombia (1995-2009)

	Volume (ton)	Value (current US\$/FOB)	Value (constant US\$/FOB 2000)
1995	1.244.437,72	389.349.742	441.189.509,35
1996	1.374.424,93	426.116.849	468.363.210,60
1997	1.488.608,79	467.733.600	497.483.088,70
1998	1.407.779,52	438.246.798	458.465.109,32
1999	1.696.459,80	505.236.378	519.469.851,94
2000	1.563.946,76	433.663.655	433.663.655,00
2001	1.344.693,00	364.854.258	360.741.801,46
2002	1.459.538,57	402.031.917	387.537.995,95
2003	1.423.159,94	387.531.789	366.737.758,11
2004	1.469.147,58	394.410.785	363.043.800,63
2005	1.619.280,28	460.930.817	409.243.378,57
2006	1.564.230,43	477.876.047	416.594.932,62
2007	1.635.032,93	526.557.610	442.522.573,24
2008	1.690.346,54	609.643.683	512.219.528,94
2009	1.959.289,55	777.621.633	639.228.633,81

Source: U.S. Bureau of Labor Statistics and Agronet based on DANE statistics

However, producers and traders argue and empirical studies confirm losses (Meisel 2004, Vilorio 2008), especially small-scale producers claim to a greater extent bankruptcy.

2.4. Price trend between production and trading

According to IICA (2005), the banana price agreed between producers and traders is relatively lower in the first semester than the second. The agreed prices include: production costs, packaging, loading into the ship and export procedures.

As mentioned in Section 2.1, production costs have a significant share of labor (labor intensive), but imported inputs can greatly affect the fluctuation of direct costs.

For example a small farm (15 hectares) has costs of production for the first year ranged from 1,811 Col \$ / kg (June 2008) to 2,124 Col \$ / kg (March 2009), and for the second year in a range from 220 Col \$ / kg (September 2010) to 253 Col \$ / kg (December 2008).

Since, there is no sufficient information on costs and export values are implicit estimates (volume / value of exports) in the following table there is an estimation for

2008 and 2009 to link production cost and trading price (implicit price FOB) all led to constant 2000 USD.

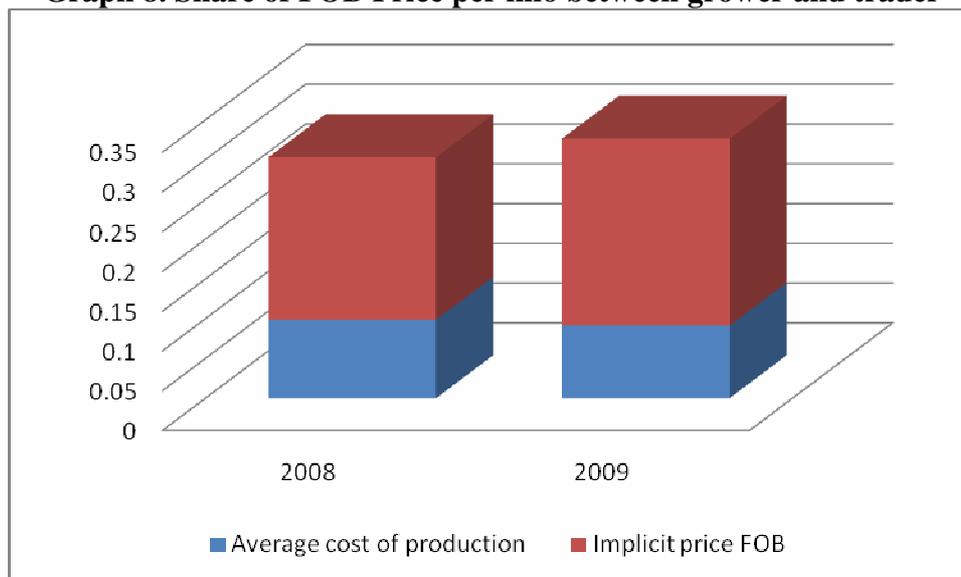
Table 7. Colombian banana prices: production and FOB (Constant 2000US\$)/kilo

	2008	2009
Average cost of production	0,0986	0,0912
Implicit price FOB	0,3030	0,3262

Source: Own elaboration based on AUGURA statistics and MADR- Agronet statistics

Thus, the average production cost is 32% of the FOB value in 2008 and 28% of the FOB value in 2009. There is a bulk of studies (see studies related to the single tariff to TRQ system of the EU) showing the share of costs in every single stage of the supply chain, however, they are based on strong assumptions and estimates; the single consensus on these studies is the higher benefits received by supermarkets, even over trading companies.

Graph 8. Share of FOB Price per kilo between grower and trader



Source: Own elaboration based on AUGURA statistics and MADR- Agronet statistics

2.5. *Added value under international standards and market opportunities*

It is questionable whether the certification standards to achieve social, environmental and / or production of unconventional banana (organic, red varieties, baby etc) are actually aggregations of value for producers. In many cases, better market prices are the result from the "aggregation" of certificates or special varieties of bananas. However, small farmers not necessarily reflects the best price unless they are insured under "fair

trade” certifications, which in any case, the price improvement is among all stages of the supply chain, specially for retailers as shown in the work of Forero et al (2008).

Environmental and social management has been present in Colombia since the mid-80s with the institutionalization of the social foundations of the trading companies and the creation of BANATURA. However, international interest groups, multinational companies and even supermarkets have pushed to have higher standards in terms of social and environmental aspects. Chiquita led a process of certification by producers with the Rainforest Alliance, which seeks primarily environmental protection standards.

Although Chiquita used to have power in the domestic market was the Euro Retailer Produce Working Group Good Agricultural Practices - EUREPGAP¹¹ (nowadays GlobalGAP) which prompted the most concern in Colombia. When in 2004, Colombia was in the negotiating process for a single tariff for bananas to the EU, alongside the EUREPGAP emerges. On one hand EUREPGAP was looking for a less and better management of pesticides in agriculture and on the other hand for improved working conditions and social management. This was an additional element to the already complicated relations between Latin American production and European consumption.

The demands for environmental and social standards at international level, can be seen both from positive to negative points of view. The positive perspective is quite obvious regarding the improved social and environmental conditions. However, from a negative point of view, the process involved a cost overrun for the producers who ultimately assumed. Major firms with their own structures might accompany the process, medium producers for their part could go to support BANATURA program, but particularly small farmers in the Magdalena, given its technical and financial deficiencies had to be excluded from these certifications (Córdoba, 2007). In 2004, when market conditions forced producers to comply with EUREPGAP if they wanted to export to the EU, the alternative “fair trade” is perceived as an outlet for small producers in this exclusion. The guarantee for a higher price and the accompanying for social development, gave to small farmers an alternative of subsistence. Constraints faced by small-scale growers

¹¹ It was a joint approach by the main European supermarkets in topics such as environmental and social management of producers.

from Magdalena are the low volumes, which force them to continue contractual relationships for conventional bananas with traders.

Gradually, though there are Fair Trade-oriented producers, they had to adapt to the GlobalGAP standards due 1) to pressure from the Fair Trade certification bodies and 2) to the needs to continue marketing on the conventional market. In this adaptation credit crunch is the biggest problem.

Organic banana production is practically concentrated in the region of Magdalena with two companies, CI La Samaria (Daabon organics subsidiary) and TECBACO (DOLE subsidiary). C.I. La Samaria, increased its production area from 670 in 2008 (Daabon, 2009) to 1,000 hectares in 2009 (Duque, 2009). The company estimated production in 2009 was about 3610 tons. On the other hand, Tecbaco buys to organic suppliers but there are no definitive estimates of the product that eventually is exported. It is estimated that the boundary of organic production in Colombia would not exceed 2000 hectares and exclusively located in the Magdalena. Finagro (2009) did an estimate of the costs of organic banana production for one hectare (1700 plants/ha.), although not mentioned in the source, it is assumed that these costs are for the first year. Irrigation systems with 27% is the item that most contributes to the cost of production per hectare, followed by the cost of meristems to 22%.¹² Organic production, environmental and social certified management are still emerging in Colombia and therein lies also the limited information. Although there may be export records, these are not of public domain and there is still much jealousy in its dissemination.

3. Institutional arrangements: supporting and related sectors

In the banana supply chain, there are suppliers of inputs (fertilizers, fungicides, pesticides, planting material etc.), most of them imported or partially produced in Colombia.

¹² Detailed information (only in Spanish) on organic banana costs see: <http://www.finagro.com.co/html/cache/HTML/SIS/Banano/costos2010/TERCER%20TRIMESTRE/BANANOORGANICO.doc>

Regarding the development of packaging, Urabá has "two factories of boxes, three polyethylene and polypropylene plants, three plants of seals, four yards, storage of materials for producers, specialized service of aerial spraying to control Black Sigatoka, integrated management system of river and sea transport" (IICA, 2005:23).

In Magdalena, only few large companies have vertical and horizontal integration relationships as in Urabá, a single example is TECBACO which has its own box company that provides the company and third parties (not only at the banana sector) (TECBACO, 2009). Instead, there is a bulk of small-scale farmers depending on contractual arrangements with trading companies.

Finally, for the shipping process only UNIBAN, BANACOL and TECBACO (DOLE) have exclusive services to the U.S. market. For most of the FOB exports by other traders, special arrangements are required through a time charter party scheme with main traders or transnational fleets.

In the institutional configuration of the sector highlights representative associations/guilds: Association of Banana Growers of Colombia (AUGURA)¹³, the Banana Growers Association of Magdalena and La Guajira (ASBAMA) and the Association of Small Farmers from Magdalena (GUINEOS). The main support of these institutions is to bridge political and socio-economical issues between producers and traders.

Just as guilds have supported the business, unions have played a decisive role to ensure industrial relations between employers and employees. The main union, SINTRAINAGRO, has had an active role in collective agreements that have given an additional premium to the wages earned by banana workers (see section 2.1), a steady improvement in living conditions of workers and population, and perhaps the greatest contribution with the partnership to promote peace in the regions.

3.1. *Research and development*

In 2001 was created the Colombian Network of Research and Development of Plantain and Banana in the city of Armenia, Quindio. Its main activity is to create an interagency

¹³ AUGURA with 97.5% representation in area (39,176 hectares) and 96.3% by number of producers (234) is the industry's most important guild in Colombia.

body to exchange information and knowledge, to increase production, productivity, improve processing and marketing of plantain and banana (Mincomercio, 2003: 39). However, this network is more dedicated to domestic banana market and has not met to formalize their activities. On the other hand, AUGURA (2011) created the Center for Research on Bananas - CENIBANANO in 1985, redefining its research agenda in: 1) Phytoprotection, physiology and nutrition, 2) Soil and precision agriculture and 3) Environment. However, CENIBANANO projects concerns about the recognition of research activities and greater dissemination of information local/nationwide.

CENIBANANO activities from the private sector are linked at the national level with institutions such as the Instituto Colombiano Agropecuario - ICA, Corporación Colombiana de Investigación Agropecuaria – CORPOICA, COLCIENCIAS, universities (Antioquia, Magdalena and Nacional) and the Biological Research Corporation. On the other hand at the international level, there are relationships with the Inter-American Institute for Cooperation on Agriculture-IICA, Bioersivity International, the Honduran Agricultural Research Foundation - FHIA (for issues of germplasm) and the Association for Cooperation on Research of Musaceas (Banano and Plantain) – ACORBAT.

Table 8. Services of CENIBANANO

<ol style="list-style-type: none"> 1. Phytopathological diagnosis for fungi, bacteria, nematodes. 2. Monitoring black sigatoka and sensitivity to uses of fungicides. 3. Recommendations on nutrition management. 4. Technical assistance on demand by producers. 5. Research and development of agricultural technology and management of the banana producing regions adapted to the country. 6. Technical department for testing the effectiveness of agricultural inputs. 7. Support and advice to test and research with producers and companies linked to the banana sector. 8. Training farmers and plantation workers in the aspects above. 9. Field for controlled experiments and demonstrations related to banana research.

Source: AUGURA, Servicios de CENIBANANO Source: AUGURA, CENIBANANO Services
http://www.augura.com.co/index.php?option=com_content&view=article&id=22&Itemid=38 (accessed in January 2011)

3.2. *Environmental and social management*

On issues of environmental and social management, the largest trading firms have created a sort of nonprofit organizations to support the sector: UNIBAN created FUDAURABA (1987) later on known as FUNDAURABA (1988), BANACOL created

CORBANACOL (December 1987) and TECBACO created FUNDEBAN (December 1988). Traders provide between 3 and 4 cents per exported box to promote activities of education, health, housing, environment, alternative productive projects and even infrastructure and public services. Such activities are primarily in the regions of production, but are not exclusive to the banana workers, but for the whole population.

The program BANATURA (Banana Natural) is also an institutional support backed by AUGURA and the Servicio Nacional de Aprendizaje (State-owned institution for training) (AUGURA, 2011). BANATURA was created in 2001 to improve practices in the cultivation and marketing of bananas in 20 farms, but 10 years later its creation is a cog that includes social and environmental aspects for a vast part of the producing region. As the target group are primarily workers and producers, the best farming and marketing practices are complemented with social-related issues such as: health, education, housing and other technical aspects of the banana industry.

Among the programs for environmental protection led by AUGURA there is the program Reducing Pesticide Runoff to the Caribbean Sea – REPCar¹⁴. It started with two pilot programs: 1) to plantain in Urabá and 2) banana for smallholders in Magdalena. REPCar was created in 2008 with support of the United Nations Program for Environment and neighboring countries (Costa Rica and Nicaragua) seeking to reduce pollutants discharged into the sea by banana/plantain production. The main beneficiaries on this project are small-scale producers from both regions.

Finally, as a result of international cooperation and again with the leadership of AUGURA, there was a partnership between producers, social foundations and the Dutch Embassy in Colombia to create the so-called Public Private Partnership – PPP to "reduce the vulnerability of small-scale banana and plantain growers of Magdalena and Urabá, to increase its competitiveness and generate them employment opportunities and additional income in the context of sustainable development."¹⁵

¹⁴ AUGURA has complete information about the REPCar in: http://www.augura.com.co/index.php?option=com_content&view=article&id=36&Itemid=57 accessed in January 2011)

¹⁵ Available information in: http://www.augura.com.co/index.php?option=com_content&view=article&id=33&Itemid=54 accessed in January 2011)

The objectives pursued by the PPP alliance are: 1) To prevent the worsening social situation of small farmers caused by market development. 2) To manage certification for small-scale producers in order to ensure sustainability in the market. 3) To diversify productive activities with guarantee of economic viability and 4) to coordinate regional interventions (public-private) in order to ensure efficient investments. This project has been nominated and won some recognition in Colombia and Holland¹⁶.

3.3. *Instruments to support sector policy*

In 2000, the national competitiveness agreement on banana and the 2001 agreement specifically for the region of Magdalena were two milestones in the development and sustainability of this product. Later on, the Apuesta Agroexportadora 2006-2020 (MADR, 2006) (Agricultural Export Bet 2006-2020) was a confirmation of the former public-private compromise. This general “bet” included bananas as one of the beneficiaries to receive additional incentives. Particularly for the sector the aim was to increase banana’s competitiveness and sustainability in international markets. At that stage, small producers already had preferential policy instruments such as credit lines, insurance and technical advice. However, it should be noted that although there are policy instruments, coverage and access for small-scale producers has been minimal. Among the causes are ignorance, lack of disclosure and lack of credibility in incentives.

This last point in particular has been justified in previous actions by the government. The government gave credits in 1996 to overcome the ravages of heavy rain in the Magdalena. However, 15 years later, some producers are still paying interests or in the worst cases, they had declared bankruptcy. In general, incentives are maintained and in some cases new ones have been created, but there are still aspects missing in the overall needs of the sector.

The Agenda Interna para la Productividad y la Competitividad (2007) (Domestic Agenda for Productivity and Competitiveness) highlighted the advantages and needs of the products concerned. To the advantages already mentioned in section 1.1 (DNP 2007a & DNP 2007b), a number of improvements in production areas are required to achieve this goal.

¹⁶ See: http://www.dinero.com/actualidad/noticias/premio-emprender-paz-2010-tiene-finalistas_77505.aspx (accessed in January 2011)

In Urabá (DNP, 2007a) the needs lie in improving management and efficiency of processes and costs, clean production and a program of corporate social responsibility, all issues solely related to the sector. Magdalena (DNP, 2007b) points to issues of basic infrastructure (water and gas), roads and irrigation systems, as well as improvement in security.

These differences in needs also show the degree of development of regions, which in this case is favorable to Urabá. It should also be aware that Urabá's "bet" at the Agenda is to consolidate the regional banana industry, while in the Magdalena points to organic bananas exclusively as a niche market.

As stated in section 1, the banana industry has received special support from government. In the following subsections, there is a presentation of the supports given by the government and in some cases by the private sector itself.

3.3.1. Support to producers

A tool to support a broad range of producers has been the credits from the government and distributed by financial intermediaries, mainly through the Fondo para el Financiamiento Agropecuario – FINAGRO (Fund for Financing the Agricultural Sector) which has made contributions on several fronts. As observed both in the chronology and table 9, FINRAGRO has become increasingly important regarding the amount of loans (in 2009 Col \$ 82.829 million or USD 40 million).

Table 9. FINAGRO credits for the banana sector

A. Credits for the banana sector from Finagro (millions of Col\$)		
Year	Number of credits	Value
2000	28	1.367
2001	147	4.433
2002	145	5.646
2003	324	7.840
2004	877	13.053
2005	598	13.510
2006	419	18.057
2007	321	19.275
2008	346	38.079
2009	473	82.829

B. Credit for Cultivation and Sustaining of banana cultivations 2010 (millions of Col\$)		
Period	Number of credits	Value
January to June	94	2.050
July	25	2.122
August	22	517
September	5	422
October	23	607
November	19	664
Total	182	6.049

Source: Finagro (2010)

According to the Anuario de Agrociudades (Espinal, 2005) prepared by the Ministry of Agriculture and IICA, "This credit support has sought to improve credit conditions for the sector, increased resource allocation for working capital and to execute some of FINAGRO services". (Espinal, 2005:42).

3.3.1.1. FINAGRO's incentives and support programs to the banana sector (2010)¹⁷

The Fund for Agricultural Financing is the bank of resources in the agricultural sector. Bananas are particularly benefited from their services, however, the intermediation of commercial banks results in an obstacle, since they ask for guarantees that producers do not have. For that reason FINAGRO itself has to assume that role (see literal D below). Additionally, the operation of the fund has relied on budget allocations that have affected the timely disbursement of resources, especially during emergencies.

A. Working capital financing¹⁸

- a. Sustaining agricultural production
- b. Primary processing and marketing of agricultural goods

¹⁷ FINAGRO. 2010. Información Sectorial Bananos.

http://www.finagro.com.co/html/i_portals/index.php?p_origin=internal&p_name=content&p_id=MI-184&p_options=#SUBSIDIOS (accessed in January 2011) & MADR . 2010. Componentes de política: incentivos y compensaciones http://www.minagricultura.gov.co/02componentes/06com_01a_incentivos.aspx (accessed in January 2011)

¹⁸ Detailed information on amounts of working capital financing see (only in Spanish): <http://www.finagro.com.co/html/cache/HTML/SIS/Banano/CAPITAL%20DE%20TRABAJO%2019%20OCT.doc> and investment financing see: <http://www.finagro.com.co/html/cache/HTML/SIS/Banano/INVERSION%2019%20DE%20OCTUBRE.doc> (accessed in January 2011)

- c. Support services for agricultural production
- B. Investment Financing¹⁹
- a. Planting and maintenance
 - b. Acquisition of machinery and equipment, and repair of machinery:
 - Land improvement.
 - Infrastructure for agricultural production.
 - Infrastructure and equipment for primary processing and marketing.
 - Infrastructure to support services of production.
 - c. Rural Housing
 - d. Capitalization, purchasing and business creation
 - e. Research
 - f. Technical Assistance
- C. “Agro Ingreso Seguro” credit line (being reformulated while writing this document): loans with favorable interest rates and grace periods to ensure competitiveness and permeate agricultural sector against the internationalization of the Colombian economy.
- D. Agricultural Guarantee Fund: provides guarantees against agricultural appropriations to cover up to 80% on all credit for small producers and commissions of up to 1.5%.

Table 10. Credit guarantee by FINAGRO to different types of growers

Type of grower	Amount of the credit for guarantee	Coverage	Anticipated Commission per year*
Small scale	All credits	Until 80%	1,50%
Medium scale	Credits with value for less/equal than 350 monthly minimum wages	Until 75%	3,75%
	Credits with value for more than 350 monthly minimum wages	Until 60%	3,00%
Large scale	All credits	Until 50%	4,50%

*Commission depending on period of credit

See: <http://www.finagro.com.co/html/cache/HTML/SIS/TABLAFAG.doc>

- E. Support for proper sanitary management and maintaining employment (Incentivo Sanitario para el Banano –ISB). Payment is made per hectare according to a call for grants and taking into account aspects of sanitary and

¹⁹ Investment financing has preferential rates for small producers (Fix Rate for Deposits +2%) compared to medium and large producers (Fix Rate for Deposits +5%).

employment certification by the Instituto Colombiano Agropecuario – ICA (Colombian Agricultural Institute)²⁰.

Table 11. Sanitary incentive and number of benefited hectares (2006-2008)

YEAR	Incentive per Ha. (Col\$)	# Has.	Million Col\$	
			Banana incentive	Total incentives
2006	583.1	4	26,680.0	48,614.0
2007	1,039.0	4	48,784.2	121,745.0
2008	944.0	4	46,004.0	230,000.0
Total 2006-2008	2,566.1		121,468.2	400,359.0

Source: ICA, Subgerencia de Protección y Regulación Agrícola.

- F. Incentive for Technical Assistance - ITA: ITA is part of a set of FINAGRO credits assigned to individual producers or through associations or institutions related to production.
- G. Incentive for Rural Capitalization - IRC. As part of a productive project funded by FINAGRO, IRC seeks to support new investments aimed for modernization, competitiveness and sustainability of agricultural production.
- H. Agricultural Insurance Incentive. It is a support to pay part of the insurance fee (see next section).

3.3.1.2. Insurance

Regarding insurance, the Colombian experience dates back to 1984, but it was not until 1993 when it becomes law and start its regulation. From then on, the government subsidizes part of the monthly fee of the insurance.

Insurance policies have been managed by several entities since the time of creation, which makes a feeling of institutional uncertainty. Since 1993, they were administered by the Caja Agraria, which went into liquidation in 1999 and passes to the insurance broker Previsora de Seguros S.A. (a public-private institution), until 2006 when it claims problems in the operation. Then MAPFRE of Colombia S.A. assumes the complete operation (Rivera & Toro, 2008). As noted in the chronology, the first product benefit was bananas and then spread to other crops.

²⁰ "Between 2006 and 2008, MADR allocated Col\$ 121,500 million for the Sanitary Incentive for Bananas (ISB) benefiting between 46,000 to 49,000 hectares of export banana plantations. In 2007, the ISB for the department of Magdalena covered 11,600 hectares, representing 24.7% of the national total, while the farms of Uraba took few more than 70%. "The difference corresponded to some farms in the departments of Risaralda, Quindio, Caldas, Cundinamarca, Valle and Guajira"(Viloria 2008:62).

However Rivera & Toro (2008: 16) state that although the agricultural insurance was created time ago, coverage is low, mainly due to "lack of a culture of taking insurance, fraud, poor supervision and moral hazard".

The insurance for agricultural risk usually covers the costs of production when the disaster occurs: excess and shortage of rain, strong winds, floods, frost, hail, landslides and avalanches of climatic origin. The fee depends on the area risk and technological development of the crop and is subsidized up to 60% (2010) by the government, although formerly the subsidy was 100%²¹.

3.3.2. Export support

Certificado de Reembolso Tributario – CERT (Tax Rebate Certificate) has been the most widely used financial tool to support non-traditional exports from Colombia. The mechanism is the return of indirect taxes and contributions (total or partially) based on the value of exports.

Exporters should demonstrate the repayment to the country of the amount exported, taking into account the destination and the payment date of shipment according to rates defined by the government (Espinal, 2005).

Table 12. Share of exports benefited by CERT

	CERT (Col\$)	Percentage of CERT over Total exports
1995	7.279.429.910	2,15%
1996	11.828.175.093	2,84%
1997	13.964.404.923	2,68%
1998	13.310.418.240	2,27%
1999	19.473.069.197	2,40%
2000	16.944.808.155	2,00%
2001	17.605.102.901	2,00%
2002	13.163.007.431	1,33%

Source: Own elaboration based on AUGURA

²¹ Resolution 48 of 2010 establishes the cultivations and existing programs for the Agricultural Insurance at 2010 (http://www.finagro.com.co/html/cache/HTML/SIS/Seguroagropecuario/MinAgricultura-Resolucion-2010-N0000048_20100129seguro.doc.)

While the CERT was available, bananas and flowers were the products with the largest support. Although there were problems in disbursements by the government, additional resources were always welcomed by the industry and criticized by other sectors.

The largest contribution by CERT came in 1999, however if compared to the value of actual exports, it was more beneficial in 1996 (2.84% of total exports) and 1997 (2.68% of total exports). One of the problems faced by the CERT was that its actual payment was made months after the support was approved. The WTO considers the Colombian CERT an illegal subsidy according to multilateral trade rules. Although the CERT remains a percentage of 0% (symbolically removed in 2002), Colombia cannot use it since there is a risk to receive lawsuits from other countries.

Among other instruments that attempt to cover the exchange rate effects is the income protection program for producer/exporters, which seeks to encourage them for risk coverage against foreign exchange. The program covers up to 90% of the value of the option and is done through the Bolsa Nacional Agropecuaria.

While support to traders is mainly financial, to producers there are both financial and technical. As seen above, there are special programs addressed to small producers, FINAGRO is for them the main source of financial aid and AUGURA became the main source of technical support.

4. Recommendations and conclusions

Export bananas in Colombia are characterized by the concentration of production and marketing by domestic firms. In the period 1995-2010 the banana industry in Colombia showed that small-scale producers have reduced their area to a great extent or have converted their production to more profitable products. Those small-scale still on business are concentrated mainly in the Magdalena region, a region that has gradually lost area and productivity in comparison to the region of Urabá (Antioquia). Departmental Development Plans remain on bananas as the product to motivate development of their regions, but in no case is explicit the policies for the productive structures. The interest on small producers came from the private sector: guilds and of course working unions.

In the chronological analysis the structure of the supply chain from producers to traders shows strong and stable links. In fact, during the three periods of study, relationships are being strengthened by guilds, government and working unions as the main agents of cohesion.

During the three periods were identified the main factors affecting the development and market structure of producers and traders. In the period 1995-1998, the conditions of violence were the main concerns in the production regions. Moreover, the Magdalena region suffered one of the worst climate disasters in the near past. Financial support for the catastrophe resulted in further problems of farmers (mostly small-scale) that made their businesses unviable. Apparently the financial support was not effectively accompanied with technical support and businesses viability was not checked appropriately. Hence before financial support, the government or a representative guild has to promote the optimal utilization of resources. For exporters, the CERT incentivized exports but given their legal infeasibility against WTO commitments, it was always dependent on the uncertainty of its continuity.

The period 1998-2002, showed the strength of the guild, AUGURA, who appropriated social and environmental issues (through BANATURA), which are essential for producers. Incentives for conversion to other products were introduced to Magdalena producers and those who continue growing bananas were advised to sign climate risk insurance. However, agricultural insurance could become a real support for small-scale banana producers but ignorance and the guarantees required by commercial banks are obstacles for further development. In a privatized banking system as prevailing in Colombia, farmers hardly have access to insurance. Thus, FINAGRO's support and especially the spread of their services would be alternatives to improve access to credit and insurance for producers.

Finally, in the period 2002-2010, the regions are perceived safer and violence goes back on the list of concerns by stakeholders. The first concern becomes the exchange rate. The continuing appreciation of the peso, hit a supply chain that is essentially exporting oriented and depends largely on an undervalued exchange rate to operate. Questions arise about the competitiveness of the sector and despite the growth in volume terms, producers and traders claim losses due to Colombian peso revaluation. Reliance on the

exchange rate questions the possibility of the sector to be competitive. The alternative that always emerges is that the sector has to increase productivity which depends heavily on research. Thus, CENIBANANO would become the promoter of innovation through scientific research.

The supply chain analysis shows a very strong concentration on area for stakeholders with over 15 hectares (medium and large). Small-scale producers are concentrated mainly in the region of Magdalena and related to trading companies through cooperatives. It is unlikely that a trader negotiates directly with a small-scale producer since it runs the risk of having a non-standardized product. Instead, the cooperative guarantees a standardized product to traders and on the other hand trader can better support a group of producers gathered in cooperatives through technical and even financial aid. The vertical integration of trading companies does not give much chance to enable cooperatives to integrate forward, especially because high investments are required. As a result, the dependence between producers and traders is asymmetric. While producers rely on trading in the sale of bananas, technical support, financial support, packaging and transport, traders depend on producers only in the provision of a standardized product. This is confirmed by the oligopolistic structure where 10 trading companies negotiate with hundreds of individual producers. Although the oligopolistic structure favors the sellers, the cost structure of production depends on external factors, the most important: the exchange rate and international prices of bananas. Regarding the exchange rate, producers have seen reductions in the prices of imported inputs (fertilizers, pesticides) but these are very volatile and agents suggest subsidized schemes to support increases. Similarly, exporters faces pressure from the international prices of bananas which is traded in dollars. Thus, dollar volatility affects directly inputs traded in pesos, of which the most important is the labor force.

Analyzing the banana workers' wages, it has been favorable when compared to the minimum wage in Colombia. Conventions between workers and other agents at the supply chain have agreed a salary throughout the study period. In addition to the salary benefits, the guild also highlights the social benefits received by workers who belong to its affiliates.

Trading companies are maintained over time, although its reliance on the production stage is increasingly lower. This follows the trend of multinationals that have gradually been withdrawn from production. It is inferred from this strategy that traders focus on their core business and leave the production risk in the hands of independent producers. The declining share of land owned by traders in the Magdalena, where every year natural disasters occur, confirms this trend.

The price relationship between producers and traders shows that the producer has a range of 30-35% in the FOB price of the trader; it is natural that this share reduces while the value chain includes other links until the final consumer. As confirmed by several authors and in different forums, is the link to retailers that puts the most pressure back on the chain. Thus, international prices are subject to the retailer demands in destination countries and this puts pressure on the negotiation of all the chain backwards. Eventually one realizes that the bargaining power of traders has shifted to the retailers, but at the expense of producers. Exceptions to the pressure on costs/prices paid to producers could be in the structures of organic and fair trade. Organic production in Colombia is taking the same course of conventional production with few traders and many potential producers. Concerning fair trade production, there is no valid and sufficient information to draw definitive conclusions. Fair Trade producers are still dependent on conventional trade and still traders buy the bulk of production. It seems that the demand for organic bananas and fair trade is still not representative for traders but it is becoming more interesting.

Traders keep control of the links in the supply chain forward (packaging, transportation) and inputs required by producers, these are additional factors of dependency. A significant support for producers has been mainly due to inter-agency arrangements promoted by AUGURA. Scientific support from CENIBANANO is essential to progress on the productivity of regions; however there is a lack of dissemination of their programs and the appropriation of their investigations with producers (especially smallholders).

Although some producers reach a significant level of technology, it is always evolving and is very difficult for small-scale producers to make changes in short periods of time. Academic institutions and CENIBANANO could help to enforce producers to receive

innovations up to date. Furthermore, the technology has to be adapted to producers' needs. Cleaner production and irrigation programs should be among the research priorities of the sector.

Other programs such as BANATURA, REPCar and PPP alliance have a clear component of support to producers with high emphasis on small-scale ones. International cooperation particularly the PPP model could be replicated and extended to other regions and even products. The backing of a strong and cohesive guild was the main guarantee to obtain the Dutch government support and it could be easily expanded once results are effective.

As noted in the chronology, financial support has been a State's policy. However, the support has lacked the necessary accompaniment and above all the certainty of guarantees. Small producers typically require more time to recover from crises than large ones and this should also be taken into account in terms of credit and insurance. FINAGRO has different funding lines, but not all producers know them. The work of the guild would be important in this activity. Also, commercial banks could support the government with new forms of credit on the way of micro-finance and micro-insurance. They have shown success in other sectors and countries for small-scale producers. Finally, export support mechanisms should seek greater certainty, while the CERT remained, it ensured support to exporters, but clearing financial mechanisms are needed to ensure coverage of the exchange rate risk, as it became priority since 2002. Some exporters have even proposed preferential fixed exchange rates for exporters, but other sectors and the government felt inconsistent with this alternative. On the other hand, the alternative of a fund of exchange rate stability is becoming increasingly important. The idea is that in good times, exporters can assign a percentage of the price to support possible future crises.

The dependence of small-scale farmers on the prevailing market structures requires recommendations to alleviate this dependence and reflected a higher quality of life. Diversification into other agricultural products to farmers eases fluctuations in banana prices. Moreover, the banana itself can derivate to other products, although unsuccessful attempts have been made in this alternative; the main problem is the institutional support during the implementation process, rather than the creation of new products.

Finally it requires greater empowerment of producer associations. It is not enough to negotiate as a whole, but also review market movements, drawing on the academic research and targeting potential commercial alternatives outside the traditional link of the conventional market.

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