

**Voluntary certification schemes as tools to promote rural development in Colombia:**

**A Case Study of Good Agricultural Practices in Plantain Produce**

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## Abstract

In recent years the appearance of private standards and codes of conduct has shaped the functioning of agri-food chains. These private standards, codes of conduct and quality meta-systems are similar concepts that evolved as a response to food scares and the growing expectations of consumers about quality and other attributes. Large retailers and supermarket chains have developed private standards in order to reduce risk when handling products in globalized food chains. Some quality standards beyond of considering farming practices and sanitary aspects of produce, introduce ethical, social and environmental considerations. Good Agricultural Practices (GAP) belong to this kind of protocols that despite of being applied in private standards have extended its usage to public voluntary and compulsory schemes and has been promoted by institutions such as FAO. GAP is a group of practices focused in record keeping and traceability regarded as an instrument to pursue sustainable farming. This study case examines a project for implementation of GAP through the private standard Global-GAP in plantain produce in Colombia. The project objectives were to implement GAP in 70 smallholders' members of an association and certify 25 in the Global-GAP protocol. The aim of the study case was to illustrate the process of implementation of GAP in Colombia as well as explore the capacity of farmers to implement the standard. The case is developed through interviews to different stakeholders performed in 2009 when the project was developed and in 2012 to follow the progress in the project goals. In addition, official documents and reports were consulted to build the case. The results show how farmers were able to implement GAP despite of their difficulties when internalizing record keeping habits. Despite of the positive attitude of farmers and their compliance with the requirements of the protocol, certification was denied because of the poor organizational skills of the association. Lack of cohesion in the association and the poor integration of stakeholders are regarded as the main causes for the non-attainment of goals. At the present most farmers have abandoned the usage of GAP showing the importance of engaging institutional actors and building capacity in the associations in order to perpetuate the knowledge provided by this kind of projects. The results of this study case could contribute with the planning of implementation campaigns in similar contexts, reinforcing institutional intervention and focusing in the proper integration of stakeholders.



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## 1 Introduction

Agriculture is a subject of great interest in environmental governance because of its multi-dimensional impact in human existence. In the first place, it has the function of providing agricultural goods with the challenge of making them available, clean and safe for our consumption. Then, the environmental impact caused by the production of such goods and the task of optimising agricultural practices without affecting productivity. And finally how can we guarantee the subsistence of farmers under current market and societal conditions.

Regarding the provision of clean and safe agricultural goods and specifically food, the public awareness in industrialized countries has increased in the last decade (McInerney, 2002). As a result, institutions and private actors have changed in order to apply more demanding safety standards or to create new regulations to avoid the effects of emerging hazards (Henson & Jaffee, 2007). In doing so, private actors have responded to the public demand for safe and cleaner products with the creation of private safety standards. Such standards have become a factor of market differentiation, benefiting the participants in the competitive process and shaping a new way of supply chain governance, not only in industrialized countries but also in developing countries food markets (Henson & Reardon, 2005). In addition to the health and safety concerns, quality standards have evolved to include multiple attributes, like in the case of Good Agricultural Practices (GAP) and other quality assurance protocols. These codes of conducts are aimed to guarantee a quality audit to the whole supply chain from primary productions to retail (Henson & Reardon, 2005).

In environmental terms, industrialized countries, especially members of the OECD have been also pioneers in applying specific measures to mitigate the impact caused by agriculture (OECD, 2003). The policy instruments used by those countries have been called "Agri-environmental schemes". Each country has applied different policies according with their political, environmental or cultural context; ranging from the application of environmentally friendly practices and direct payments to modest measures and voluntary schemes (OECD, 2003). Although these countries have been leading the implementation of such measures, the need of minimizing the impacts of agriculture has motivated the creation of agri-environmental schemes in a global scale. In the case of Latin America and the Caribbean, agri-environmental governance does not constitute a coherent structure of policies, but has moved forward the creation of trade standards, improvement of health and



environmental conditions and raising competitiveness in national and international markets (Saborio, 2006).

Accordingly, the solutions given to the different concerns posed by agriculture have converged in creation and application of “standards” in a global scale. Private or public standards have been proposed as a strategy to deal with the challenges posed by agriculture. These challenges include the improvement or maintenance of the farmers’ livelihoods through the enhancement of their competitiveness in the market, health and sanitary conditions, and other social benefits included in quality standards.

The objective of this study is to analyse the implementation of Good Agricultural Practices (GAP), in the context of a Colombian plantain produce. In Colombia, institutions have progressively promoted voluntary certification schemes such as organic agriculture and GAP. Especially GAP has been heavily promoted through projects aiming to create the capacity in farmers to fulfil the requirements of standards as Global-GAP (former Eurep-GAP). Such projects, like in our case, frequently offer financial aid to cover the third party certification. So, this case study will revise the implementation process of the GAP project, the farmers’ attitude and the outcomes regarding certification and their capacity to implement the changes proposed. It will also contribute with the discussion about the effectiveness of standards like Global-GAP to implement GAP and benefit farmers in developing countries.

## 1.1 Objectives

The aim of this paper is to analyse the process of implementing Good Agricultural Practices through projects promoted by public institutions in Colombia. Specifically, this study aim to describe the process of GAP implementation as well as the capacity of farmers to adapt their practices to Global-GAP standards.

This paper will answer the following research questions:

- What is the role of different actors during the implementation process?
- How efficiently are resources allocated to farmers?
- What is the attitude of farmers towards the project?
- In what extend are farmers able to understand and apply the requirements of GAP and meet Global-GAP standards?
- What is the role of private standards promoting rural development in Colombia?

## 2 Background

In the last 40 years an important population growth stimulated agricultural production as well as the mechanization of farming practices (Pretty, 2008). Mechanized farms combined with low prices in agricultural products lead to decrease the number of employees and exclude the less competitive producers. This situation has compromise the sustainability and existence of a majority of agricultural units in Latin America and the Caribbean which small size and familiar character reduce their opportunities to compete in the market (FAO, 2004). Globalization has played an important role in this situation exposing agricultural markets to international competition (Pingali, 2007). Latin America, as a region in the process of agricultural modernization has been improving technologies to increase productivity and widen market opportunities. Although, these countries have been successful participating in global markets, smallholders have found difficulties to enter in the market of high value products that imply larger investments and participate in supply chains dominated by large retailers (Reardon, Codron, Bush, Bingen, & Harris, 2001; Pingali, 2007).

Despite of the marginalization of farmers, agricultural modernization in Latin America and the Caribbean has been an engine promoting the growth of non-agricultural sectors, helping to raise countries GDP's, stimulating infrastructure investments and improving the competitiveness of these regions (Pingali, 2007). By the other side, the inclusion of these regions in globalized markets have promoted severe environmental changes. In the last 30 years cultivated areas have increased as well as the levels of agrochemicals applied (Joyce, 1997). As a result, the quality of soil and water has decreased and biodiversity has been affected in the process of agricultural transformation (Redclift, 1989).

Although different policies could be applied in order to mitigate the problems caused by agricultural modernization; agri-environmental governance responds to neoliberal parameters, assigning a crucial role to market mechanisms. The next sections will develop the use of standards as market and institutional mechanisms. In addition, it will picture Colombian agriculture, and specifically plantain cultivation, in order to facilitate the reader the understanding of this case study conditions.

### 2.1 Standards in Agro-Food Chains

Supply and demand triggers have motivated the development of private standards. Being considered as policy instruments, these private measures have been promoted by international institutions in order to facilitate trade incorporating quality, safety and environmental criteria (OECD, 2003). The

evolution of private standards in agri-food chains has been prompted by retailers' interests and consumers concerns, but international institutions as the WTO and national authorities have participated creating frameworks and stimulating their usage (Mutersbaugh, Klooster, Renard, & Taylor, 2005; Henson & Humphrey, 2010).

The development of standards responded from the supply side to the need of retailers to coordinate supply chains and standardized products requirements (Timmer, 2008). Through the creation of standards, leading retailers could compete with major food processing chains gaining access to quality-based markets (Amekawa, 2009). In the demand side, health related problems like mad cow disease; avian influenza and GMO's increased the concerns about food safety in industrialized countries (McInerney, 2002; Henson & Reardon 2005; Amekawa, 2009). In these circumstances, public authorities in the North committed to strengthen the regulatory framework that could make retailers assume liability of the products they were selling ( Amekawa, 2009).

So, in order to regulate the development of standards, the WTO negotiated with its members a framework for the design and implementation of such standards; the Sanitary and Phyto-sanitary (SPS) Agreement (Amekawa, 2009). The SPS agreement allowed country members to formulate new regulations to protect health and sanitary conditions in agro-food chains (Henson & Jaffee, 2007).

Although governments have responded to this trend revising regulations and institutions, the private sector has been more active in the creation of quality standards (Henson & Reardon, 2005; Busch, 2011). Nevertheless, public concerns have gone beyond the search for healthy and clean products, and have been including other attributes in the concept of quality (McInerney, 2002). These attributes are related with production conditions, in social, environmental and ethical terms, ranging from organic production, fair trade, animal welfare, etc. (Henson & Reardon, 2005). Such response has been reflected in the creation of quality assurance protocols that include several attributes in single voluntary standards (Amekawa, 2009). In this scenario appeared Good Agricultural Practices (GAP) as a code of conduct applied both by private and public actors at national and international levels and promoted by national governments (Iizuca & Bourbon-Galvez, 2009).

The development of standards has followed a trend in consumer demands starting with more stringent safety measures with the subsequent inclusion of other quality concerns. Retailers responded creating their own safety standards using quality attributes to present themselves as concerned about social and environmental issues (Fuchs & Kalfagianni, 2010). In addition, retailers have strived for differentiation through these quality based mechanisms, following the consumer

trend of preference from price-based to quality-based products (McInerney, 2002; Henson & Reardon, 2005).

Private standards can be seen as a new way of governance in which private and public actors interact in order to raise quality and other attributes in the agri-food chain. Nevertheless, being private measures and market mechanisms their compliance is not monitored by governments. It would be impossible for governments to follow the rapid development and variety of standards. So, the responsibility of verifying standard compliance has been transferred to third party certifiers (Fuchs & Kalfagianni, 2010). TPC are private or public institutions in charge of evaluating and certifying the compliance of producers applying standards in terms of products and processes. TPC certify public and private standards and are often accredited by national or international institutions (Anders, Souza-Monteiro, & Rouviere, 2010).

Being voluntary standards, the process of being certified starts with the application of the producer or supplier to a specific TPC. Then, the TPC performs a pre-assessment of documentation, facilities and production conditions in order to determine the likelihood to be certified. After that, a field survey is performed and if the producer or supplier complies with the standard conditions it is allowed to label its products as certified. The cost of the process is assumed by producers or suppliers (Hatanaka, Bain, & Busch, 2005).

## **2.2 The use of private standards in developing countries**

The agri-food sector in developing countries was previously managed in an informal way with little control or formal certification. Nevertheless the rise of large supermarket and food manufacturer companies and their interest in coordinating supply chains between regions have motivated the growing use of private standards (Reardon & Berdegué, 2002; Henson & Reardon, 2005; Timmer, 2008). The need of retailers and supermarkets to implement private standards was also motivated by the lack of inadequate existence of public standards. In developing countries governments have often the capacity to enforce public standards only in the export market, leaving the domestic consumer unprotected (Timmer, 2008). In addition, the development of public standards has been focused on public goods, as plants and animal health, leaving private goods outside of their range. However, there are some cases where standards on food safety have been developed, unfortunately governments in developing countries lack of the capacity to monitor and enforce them (Henson & Reardon, 2005).

There are different perspectives to analyse the growing influence of private standards and the participation of developing countries in global trade. In the first place, globalization has benefited agriculture in these countries allowing their integration to global markets, exposing them to international competition and contributing in the development of specialized markets with the potential of raising economic returns for farmers (Pingali, 2007). Food markets in these countries have been also affected by globalization, as a consequence of changes in life styles and diets and the exposure to foreign products.

These changes have boosted the entrance of large supermarket and food retailers in developing countries, bringing with them their own standards and incorporating local farmers to their supply chain practices. Raising the quality standards of local produce has often yielded a considerable increase in international trade, becoming an important tool for economic development (Reardon & Berdegú, 2002; Henson & Jaffee, 2007). Some evidence from Senegal shows that the possibility of trading with Europe benefited the coordination in supply chains and boosted positive institutional changes. Despite of the fact that agriculture changed from small business to larger agro-industrial production, poor households and small farmers benefited from a more active labour market (Maertens & Swinnen, 2009). Other studies also show how the adoption of standards increased the amount of trade for Sub-Saharan countries (Henson & Masakure, 2011).

By the other side, the proliferation of private and public standards has been also considered like a protectionist measure to limit imports. The poor coordination among countries prevents the integration of low and middle-income countries to markets in industrialized countries (Henson & Jaffee, 2007). In addition, private standards have also been considered to threaten the subsistence of smallholders, which find difficult to comply with bureaucratic requirements and cover the cost of initial investments and third party certification (Hatanaka, Bain, & Busch, 2005; Campbell, 2005; Higgins, Dibden, & Cocklin, 2008; Timmer, 2008). Some authors have even pointed private standards as promoters of inequality among smallholders in developing countries. The cost of initial investments and competition with larger farm units becomes in a common cause of bankruptcy among low-income farmers (Salette & Cavalcanti, 2004; Herzfeld, Drescher & Grebitus, 2011).

Despite the growing interest and different perspectives about the increasing use of private standards in developing countries, some authors propose private standards and quality assurance protocols as tools for rural development and agricultural sustainability (Campbell, 2005; Henson & Jaffee, 2007). There are not conclusive results on this matter; however it is a subject of great interest in development and agriculture research and there are still many authors searching for evidence to

evaluate the impact of standards in rural development for low and middle income countries (Gomez, et al., 2006; Amekawa, 2009; Lee, Gereffi, & Beauvais, 2010; Henson & Humphrey, 2010; Henson, 2011).

In the next section, good agricultural practices (GAP) are explained in order to introduce the reader into the requirements included in a quality assurance protocol. GAP is a generic name including some of the attributes desirable in farming. These attributes become more specific in the case of applying to a Third Party Certification, like Global-GAP.

### **2.3 Good Agricultural Practices**

Good Agricultural Practices (GAP) are instruments to pursue social, economic and environmental sustainability for agricultural producers. The official definition of FAO for GAP is “to apply the available knowledge for the sustainable use of natural resources producing in a gentle manner healthy and innocuous agricultural goods at the same time than promoting economic viability and social stability “(FAO, 2004). This approach has been encouraged by FAO after the appearance of different norms and codes of conduct related with agricultural practices and products. Nevertheless, the concept can be used in different contexts. For instance, it is the promotion of voluntary certification schemes by governments, civil society and private actors and also a regulatory framework to prevent or minimize the contamination of food (FAO, 2003).

FAO, has emphasized the promotion of this approach for primary production, especially in developing countries through the study of cases where the adoption of GAP has been beneficial and also when has been detrimental. Positive outcomes are commonly related with the engagement of producers; the use of market incentives, and well targeted capacity building efforts. By the contrary, non-successful cases are related with lack of support (credit, market assistance and capacity building), difficulty in meeting the requirements of certification, inconsistencies in governmental policies and the belief that the process leads exclusively to reach export markets (FAO, 2003).

#### ***2.3.1 Disincentives and Incentives for the adoption of GAP by small producers***

The main disincentives for the adoption of GAP are the lack of specific markets to commercialize their products, the existence of more rigorous standards for developed countries, conflict between international and national standards, high costs such as inputs, traceability, recordkeeping and a poor cost-benefit analysis for the implementation of GAP (FAO, 2003). By the other side, promoters of GAP can use incentives such as financial support, longer and better terms in credits, improved infrastructure, capacity building for farmers and their institutions, research in developing GAP for

minor crops, etc. Without considering the inner benefits related with increased yields and lower level of inputs and waste, better environmental conditions, and better market access and positioning. (FAO, 2003)

## 2.4 Global-Gap: Previous Eurep-GAP

This standard was launched in 1997 as a European initiative promoted by retailers and supermarkets responding to quality and safety concerns (GlobalGAP, 2007a). The proliferation of private standards during the 90's motivated European retailers to create a common code of conduct integrating environmental objectives with more complex attributes (Amekawa, 2009).

So, Eurep-GAP counted from the beginning with the support of the private sector. Retailers were concerned for the development of common certification standards with the aim of reducing the audits and cost of dealing with contractors with different certification schemes (Global-GAP, 2007a). Under globalization conditions, it was necessary to create a more global standard to control the imports to European supermarkets and standardize the application of GAP beyond Europe. That need was solved through Global-GAP, launched in 2007 (Global-GAP, 2007a).

The popularity and reliability of Eurep-GAP was achieved through the application of a "super audit" system, which synthesized other audits like hazard analysis and critical control points (HACCP) in a quality meta-system for Good Agricultural Practices. It started with fruits and vegetables, and was extended to flowers, oil palm, coffee, aquaculture and livestock (Amekawa, 2009). The focus of Global-GAP is pre-farm gate practices from the propagation of the material to non-processed end product, so it deals to fresh products. This approach reduces the cost and difficulties of covering the whole value chain, increasing their acceptability among retailers and farmers (Amekawa, 2009).

Producers can apply to Global-GAP and get certified after complying with the standard outlines. Such certification can be done through certification bodies that audit compliance following Global-GAP rules. Producers in the process of being certified follow control points and compliance criteria (CPCC) for the different areas of the agricultural production. CPCC modules are divided into more general production issues, denominated "Scopes", and criteria covering specific details of production "Sub Scopes" (Global-GAP, 2007b).

Compliance consists in three types of control points; there is a list of 42 Major Must, 122 Minor Must and 91 Recommendations. Food Safety issues are covered by Major Must while Minor Must and

Recommendations cover environmental and animal welfare issues (Fuchs, Kalfagianni, & Clapp , 2008).

During the audits, the non-compliance of CPCC entails either warnings or suspension. The TPC usually grants periods to take corrective actions before cancelling the certification (Global-GAP, 2007b). It is important to clarify that Global-GAP is a system targeted to members in the production chain, so it is not label on products or transmitted to consumers<sup>1</sup>

## **2.5 Plantain Cultivation**

### **2.5.1 General aspects on Plantain produce**

Plantain is a tropical fruit from the Musacea family endemic from the southeast of Asia. The two most known species from this family are: *Musa paradisiaca*, which is the plantain and *Musa sapientum* or banana. Plantain and other Musacea cooking species are produced along the humid tropic, especially in Africa, Latin America and the Caribbean. They are an important source of carbohydrates and contribute with the food security of millions of people in the areas where is cultivated (Munro Olmos et al, 2005). Plantain production systems are traditional in the majority of cases being associated with other crops as coffee, coconut, and other traditional crops. Nevertheless, in some countries it can be found as an exclusive crop.

### **2.5.2 Socioeconomic Aspects of Plantain Cultivation in Colombia**

In Colombia are cultivated about 358 000 ha of plantain producing 2.5 million tons per year, from which 95% is kept for the domestic consumption and the rest is exported (Rodriguez Martinez & Rodriguez Saavedra, 2001). Plantain occupied the fifth position in cultivated area compared with coffee, which cover 3.6 million of ha (Philpott & Dietsch, 2003).

The socioeconomic role of plantain goes beyond their contribution on food security and job creation. In addition, plantain occupies a very important place in the diet of Colombians, which consume around 62 kilos per person a year, one of the highest figures in the world (Rodriguez Martinez & Rodriguez Saavedra, 2001). Most of the cultivated area belongs to small farmers, indicating its role to support the economy of rural areas (Rodriguez Martinez & Rodriguez Saaavedra, 2001).

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<sup>1</sup>Official website of Global-GAP <http://www.globalgap.org>



A hectare of plantain generates in average 0.75 jobs that extrapolated to the cultivated area mean 288 375 permanent jobs. This is equivalent to 58 000 families of five persons dedicated to plantain production (Rodriguez Martinez & Rodriguez Saavedra, 2001). Nevertheless, the revenues generated are not very high, considering the difficulties for commercialization. Most plantain producers are small farmers that sell at farm gate. In this scenario middlemen play an important role coordinating purchase, transport and sale, getting a big proportion of the value added during the process (Rodriguez Martinez & Rodriguez Saavedra, 2001).

### 3 Methodology

This case explores the implementation of Good Agricultural Practices in one of the most important agricultural areas in Colombia. A case was chosen to show the implementation process, the allocation of resources and the stakeholders view and participation. In addition, the capacity of farmers to adapt their practices to GAP was analysed. The project was followed in different stages, providing valuable information about challenges, actual roles and performance of stakeholders; in addition it was possible to follow the progress and document operative decisions and failures. The sources of information are project documentation and archives and semi-structure interviews to different stakeholders.

The study started in March 2009 when the project manager Lina Maria Rios was interviewed in order to know the details of the project. After revising the project documentation, semi-structured interviews were applied to farmers. The project involved 70 farmers; nevertheless one of the objectives was the certification of 25 of these farmers with Global-Gap. Considering that the final number of certified farmers would not exceed 25, a sample of 12 farmers was chosen following availability and willingness to participate in the study as criteria. The farmers were interviewed between the 13 and the 19 of April 2009, spending between one and two hours with each of them. During the same period the two technicians providing advisory to the project were interviewed. In July the project manager was interviewed again to follow the project progress, as well as to revise new documentation. During the same month the director of the organization grouping farmers (Musaceas) and the SENA general director of GAP projects in Colombia were interviewed. In December 2009, after finalizing the project further documentation was revised. Finally in March 2012, the project Coordinator, the director of Musaceas and a member from the Institution managing the Alianzas Project were interviewed to know their perspective and experience after concluding the project.

In order to answer the research question about the role of private standards in promoting rural development in Colombia, a literature review of the topic was performed and included in the discussion contextualised with the evidence obtained during the case.

## 4 Case Study

### 4.1 Location

Quindío is a province from the heart of Colombia with an extension of 1246 km<sup>2</sup> representing 0,16% of the Colombian territory. There are three main landscape units, the west flank of the central mountain range, Armenia cone and La Vieja river Valley. These landscape units have their own climate and soil conditions favouring different uses and agricultural management. The cone of Armenia is the most productive area in agricultural terms; their volcanic and highly productive soils have benefited the establishment of crops, especially the settlement of coffee plantations and associated crops, as plantain (IGAC, 1996).

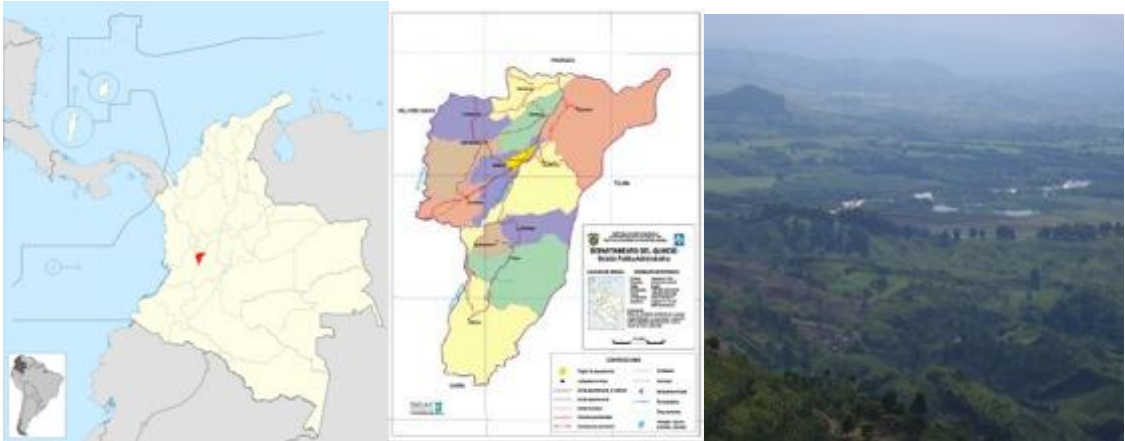


Figure1. Maps of Quindío in Colombia (Left) and Quindío and its municipalities (centre), and a photograph of the agricultural landscape in the region  
Source: Google Maps, IGAG and own photo

## 4.2 Project Background:

### **“Alianzas Productivas”**

In 2006 a project sponsored by the Ministry of Agriculture benefited 157 smallholders to apply a technological package in order to improve productivity in plantain crops and foster rural development in Quindío. The project called “Alianzas Productivas” which means Productive alliances, had as objective to improve the socio-economic level of the families participating in order to contribute with the sustainability of their farms. The concept of GAP was not considered in that stage and the main goal was raising productivity. The participants belonged to small associations from six municipalities in the region, which were grouped in a larger association to fulfil the project objectives. All of them have a limited income and plots with an average of 3.8 ha (Gomez, et al., 2006).

Most of the producers involved were landowners and the family members frequently provided the labour. Due to the low income of the participants, the project was committed to support them technically and economically until the goals of the project were accomplished. The project established contracts with commercial partners to guarantee a stable price, and also created a rotatory fund. Although the ministry would cover the cost of the project, the cost of supplies would be taken from the price of produce when sold and saved in the rotatory fund. This fund was considered like a saving account available for farmers after five years with the aim to strengthen the association and benefit its members (Gomez, et al., 2006).

### ***GAP Projects Promotion in Colombia***

In 2007, The National Service of Learning (Servicio Nacional de Aprendizaje) SENA established an agreement with Asohofrucol, the institution managing the Found for the promotion of Horticulture and the Fruit sector in Colombia. This agreement aimed to support business initiatives to help producers in the achievement of international standards of quality. The coalition among these institutions created a fund with the goal of supporting 2500 producers in the implementation and certification in Good Agricultural Practices (SENA, ASOHOFrucol, 2007).

The total funds arose to COP 5000.000.000<sup>2</sup>. The fund covered 50% of every project budget, contributing with no more than COP 200.000.000 for each initiative. The organization formulating the project was responsible for raising the funds missing through partnerships with other private or official institutions (SENA-ASOHOFrucol, 2007).

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<sup>2</sup> COP: Colombian pesos; current exchange rate: 0.00045 euros

It is important to mention, that besides of SENA, other institutions have been promoting the adoption of GAP. For instance ICA (Colombian Institution for Agriculture) has been making efforts mainly in research and development of standards. In the last years, ICA developed a certification scheme in a GAP protocol developed for the Colombian context. In addition, it has been supporting initiatives to help producers in the implementation of GAP and promoting the certification of its voluntary standard. The resolution 4174 from November 2009 decrees the ICA certification system for GAP. Although the implementation process of GAP implies costs for farmers, this certification scheme is voluntary and its adoption is free of cost (ICA, 2009).

### 4.3 Project Description

The Project of Implementation of GAP in plantain produce in Quindío was presented in 2008 by Musaceas (the association created by the Alianzas Project) and would benefit producers participating in the Alianzas project (Universidad La Gran Colombia- Seccional Armenia., 2008).

The farmers associated in Musaceas produced a total of 1260 ton/year in 105 Ha, from which 20% is lost during post-harvesting. In addition, the crop has low returns; since COP 280<sup>3</sup> are invested to produce one kilo of plantain that is sold for COP 300. The fact of not having a planning or record system for the production, besides of using non qualified labour and having phyto-sanitary problems lower productivity and increases the production costs (Universidad La Gran Colombia- Seccional Armenia., 2008).

Responding to the problems mentioned above, the project would increase productivity and reduce the use of agrochemicals through the implementation of GAP. In addition, one of the objectives was the certification of a group of 25 farmers in the Global-GAP standard.

The project applied education and implementation to empower the members of Musaceas. In addition, the GAP proposal would involve producers in the production chain through education and the establishment and monitoring of Good Agricultural Practices instructive plots. The application of GAP could create a synergy with the Alianzas project helping them to achieve a more sustainable farming and easing the attainment of the former project goals (Universidad La Gran Colombia- Seccional Armenia., 2008).

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<sup>3</sup> Approximately 0.12 euros

In terms of commercialization, the project included trading agreements with retailers that offered good prices for producers and stability in the negotiation process. This alliance guaranteed that the economic returns for farmers mirror the efforts of implementing GAP and increasing quality in general terms (Universidad La Gran Colombia- Seccional Armenia., 2008).

In other regard, the project will encourage the implementation of clean production and biologic alternatives for pest management, making agricultural practices more compatible with environmental protection. The project will also develop a GAP manual for plantain and a booklet about associative organization and business initiatives (Universidad La Gran Colombia- Seccional Armenia., 2008).

## 5 Results

### 5.1 Implementation

This section will describe the implementation process, the stakeholders and the farmers' attitude during the project. In addition, it will show the different stages on the implementation of GAP projects.

#### 5.1.1 *The Organization: Musaceas*

As previously stated Musaceas is a second-order producer organization in Quindío. It group producers of plantain, and was created as a requirement for the Alianzas Project. At the beginning of the process, 12 small cooperatives compromised to be members, however during the process some of them have disappeared. At the present, just seven cooperatives belong to Musaceas.

Since the creation of Musaceas, the association has been improving as well as its member's attitude (Musaceas director in 2009, personal communication, April 22, 2009). The strengthening of the association as a goal of the Alianzas project has been achieved smoothly, although it has been difficult considering some problematic points. The first obstacle was the lack of credibility of members, which were suspicious about development projects. Another obstacle was the lack of managerial skills of the board. Musaceas did not count with funds to operate before receiving the Rotatory Fund, and the board members being volunteers dedicated their spare time to the association. The Alianzas project provided some training to the managing board in administrative tasks and associativism, helping them to know how to manage the association producing funds to

operate in a more professional way (Musaceas director in 2009, personal communication, April 22, 2009).

So, since 2006 a group of plantain producers participated in the project of increasing their productivity. Musaceas was a very important part of the process, proposing and managing new projects that would cooperate in the achievement of the Alianzas project goals as well as in their own development as association. In 2011 the Alianzas project concluded and Musaceas received the Rotatory Fund to continue the process of strengthening as an association. The productivity goals of this project were not achieved, mostly due to climatic conditions that increased the occurrence of phyto-pathologies. At the present Codesarrollo, the institution managing the Alianzas project is still monitoring the performance of Musaceas as well as following their commercialization patterns (Codesarrollo Social Manager, personal communication, March 7, 2012).

In 2011 Musaceas became autonomous in the sense that it could afford to pay the staff, to have an office and take the control of their own activities without depending of institutions. In the present Musaceas is very active, formulating proposals and granting loans to its members with very low interest rates. It has been working to improve the conditions of farmers, and even managed to partially sponsor weather insurances for members, that have saved many of them from bankruptcy (Musaceas director in 2012, personal communication, March 6, 2012).

### **5.1.2 Formulation Process and Stakeholders**

In 2008, Musaceas started the process of formulation of a GAP project sponsored by Asohofrucol and SENA. Although Musaceas would be co-executor and beneficiary of the project, it involved other stakeholders to provide an institutional framework to guarantee the viability of the project

*The institutions participating were:*

- La Gran Colombia University as executor of the project, administrating resources, elaborating documents and participating in all the process.
- Fundación Intal to get support in one of the products of the project: Processing of plantain at industrial scale.
- Servicio Nacional de Aprendizaje SENA, branch Quindío to support the technical advisory and education process.
- Proplat S.A and ASOCOAGRO as a commercialization partners.

The project was also obtaining resources from the municipalities where the project was developed. Despite of being formally involved in the project, there were difficulties to engage them in the project activities (GAP project coordinator, personal communication, March 18, 2009).

This study case involves different institutions and project names, so in order to provide the reader a better understanding of the case the following organizational chart will show the relation among them.

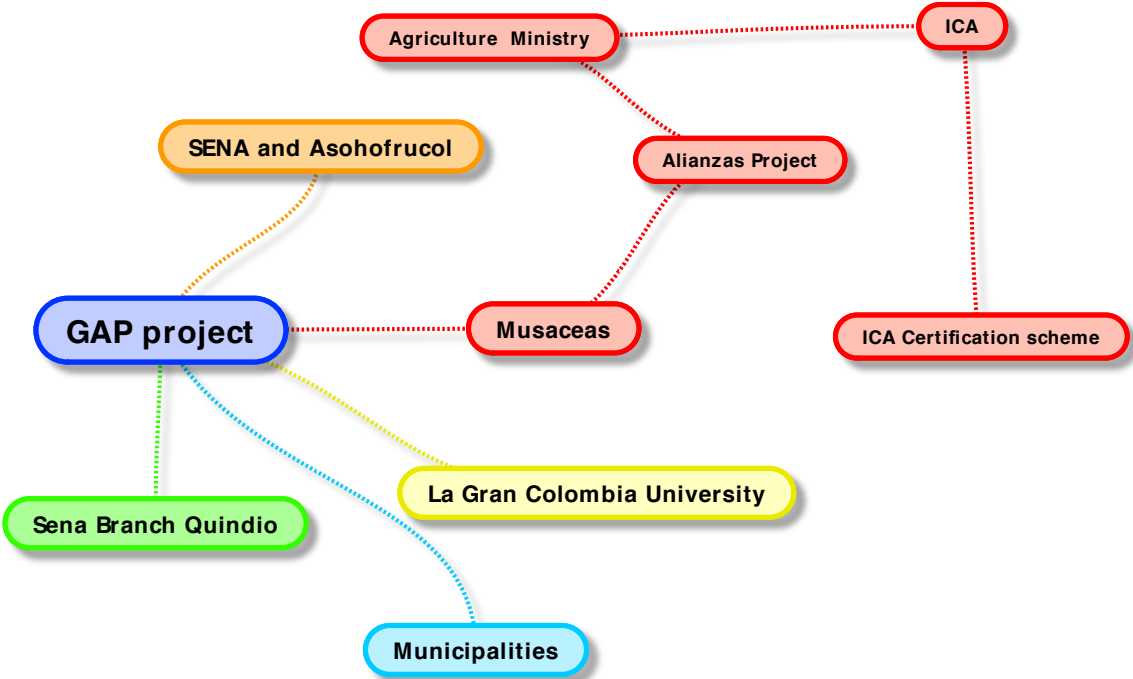


Figure2. Organizational chart with the institutions and projects involved in the study case

The first step in the implementation process was the socialization of the project. A first approach to Musaceas members allowed the communication of the project scope as well as to identify the possible participants. During this first approach 83 producers were interested in participating. Socializing the project was important to show the producers the benefits to participate, motivating them to join. After a while, some of the producers disserted and just 70 were formally committed to the project (GAP project coordinator, personal communication, March 18, 2009).

After the socialization stage a diagnosis of the producer’s socio-economic level, competitiveness and GAP requirements was performed (Universidad La Gran Colombia- Seccional Armenia., 2008).

### **5.1.3 The Process of Implementation**

Despite of being Musaceas the institution formulating the project, its contribution was limited to the technical advisory offered by the Alianzas project personal in terms of improving the farming techniques and the provision of supplies and equipment. Personnel from La Gran Colombia University, specifically Lina Maria Rios, project coordinator, two technicians and two internship students from SENA branch Quindío, formed the operative team working in the implementation of the project. This team was interacting with producers in all the stages of the project.

After the diagnosis, the operative team created standard procedures for the crop and designed the forms to register all the practices performed to plots. They mapped every farm; determining plots, species planted, number of plants and age, and started the establishment of signalling for the different parts of the farm (Rios , 2009).

Aware of the deficiencies of producers in terms of GAP, the operative team of the project used a training and application methodology (GAP project coordinator, March 18, 2009). The topics treated in this stage of the project were: Integrated Farming Management, Safe Pesticide Usage, Hygiene for People, Tools and Equipment, First Aid, Record Keeping and Documentation Management, Waste Management, and Reforestation Techniques (Rios , 2009). A recipe book containing all the compliance points was used to follow the progress of producers. In this recipe book, each compliance point had a schedule of application that was followed by the operative team. Producers were visited once every two weeks and their progress was registered to schedule the next activities. In the case of non-compliance, the causes were established and if necessary a reinforcement of the training was given (GAP project coordinator, personal communication, March 18, 2009).

Beyond the training and application of the topics included in the GAP protocol, the operative team provided constant monitoring to farming integrated management and other activities that were important to attain the project goals.

The main obstacles during the operative stages were the overload of duties for the producers that have been approached by different institutions and projects. Most of them were participating in different projects, and often mixed responsibilities and concepts. This fact was referred by the project coordinator as an obstacle for the transparency of the process. Another obstacle was the inflexibility of the budget making very difficult to make changes according with the progress or unforeseen conditions (GAP project coordinator, personal communication, July 22, 2009)



Although the project included results beyond the implementation of GAP, the stages in the implementation can be summarized in the following diagram.

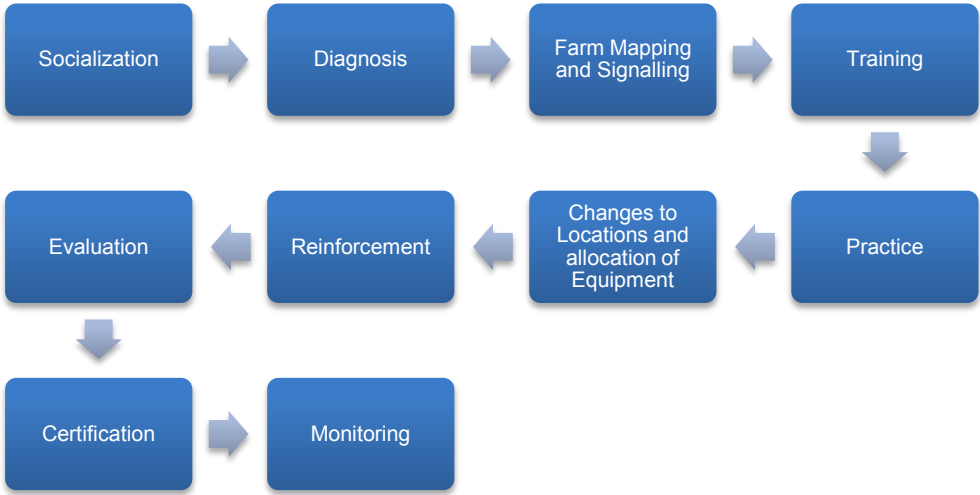


Figure3. Stages in the implementation of GAP in plantain produce

In December 2009, a final report stated the achievement of the results proposed by the project. At that time the project founding was over, accelerating the conclusion of the project. Considering that all the stages but the certification were ready, the final report affirmed that the proposed results were achieved including the certification of 25 producers. The producers were ready to start the certification process, so the operative team assumed the achievement of this goal. Nevertheless, a while after, when the TPC (Third Party Certifier) performed the first audit, there was clear that despite of having most of the compliance points, there was not an internal audit system in place in Musaceas to guarantee the continuity of the process. This fact impeded the certification and therefore the attainment of one of the most important goals of the project (GAP project coordinator, personal communication, March 6, 2012).

**5.1.4 Farmers attitude**

The farmers participating in the project are members of Musaceas and also part of the Alianzas project. The involvement of these farmers to the GAP project was voluntary, so, there was not criteria to choose them, but their own decision to participate. The participants, being part of Alianzas have been already filter to have low income and limited size plots.

In general terms the farmers expressed to have doubts when the project started. Most of them have had previous experiences participating in projects where the results were poor or inexistent. There is also some confusion about the boundaries between Alianzas and the GAP project. Some of them

complained about deficiencies in the Alianzas project when they were questioned about GAP. That was also a factor creating doubts to participate in the GAP project (H., Astaiza (April 19, 2009), O., Garcia (April 16, 2009), personal communication). One of the farmers even believed that was compulsory to enrol the GAP project in order to continue in Alianzas (O., Garcia, personal communication, April 16, 2009).

Most of them also expressed to have doubts about their time availability to participate in the project. Their lack of time was justified considering that just the family provides labour and that they also grow coffee (L., Turriago (April 13, 2009); G., Gutierrez (April 13, 2009); L.N., Molano (April 13, 2009) personal communication). Nevertheless, they decided to participate maybe thinking in the relation with the Alianzas project, the benefits they could get and even the resources that could be granted.

Once the process of implementation started farmers identified as problematic points; to follow the record keeping system (O., Garcia, personal communication, April 16, 2009), to follow the integrated farming methods due to the lack of assistance by the Alianzas project (M., Tabarquino, personal communication, April 19, 2009), and the lack of supplies to maintain the crop (O., Garcia (April 16, 2009); L., Turriago (April 13, 2009) personal communication). The last condition was caused by the Alianzas project, that according with farmers and GAP technicians was delayed to distribute the supplies and poor to provide advisory in integrated farming management.

By the other side, they emphasized that the GAP operative team provided an appropriated and constant advisory, and their assistance in integrated farming management methods covered the deficiencies left by the Alianzas project. This dedication helped to overcome the difficulties that most of the producers had with the record keeping system. The registers were the most difficult task for them to accomplish. In some cases their lack of formal education made the technical parts of the register a very challenging issue. To supply this deficiency, some of the producers involved their wives, which could understand better and implement the system in a systematic way (H., Astaiza, L., Turriago, personal communication, April 19, 2009). The participation of women was crucial in most of the cases. Wives have been empowered through the project, and demonstrate their capabilities ordering and managing registers. They felt more involved in the farm activities and contributed strongly with the achievement of the project objectives

All of the farmers saw the project as an opportunity to improve their living conditions. Some of them identified the changes in hygiene and safety as the most important outcome of the project (G., Gutierrez; L.D., Molano (April 13, 2009); O., Olarte (April 14, 2009); H., Astaiza; M., Tabarquino (April

19, 2009), personal communication). While others perceived the economic returns as the most important result (L., Turriago (April 13, 2009); J.A., Carmona; J., Alvarez (April 14, 2009); O., Garcia (April 19, 2009) personal communication).

Regarding the adoption of the concepts given by the Alianzas and GAP team, all of the farmers were applying the cultural practices and integrated management to improve the quality of their crops without depending in large scale from agrochemicals. Just one of the contestants recognized to consider just partially the technical advisory (H., Astaiza, April 19, 2009, personal communication).

Despite of this, all the farmers recognized that following the GAP project advisory it is important for their lives. Learning about the correct and safe use of pesticides made them aware of the risks they were taking before, and help them to identify possible risks in the present. Like in the case of Orlando Garcia that complained about the improper use of pesticides of his neighbour who was contaminating his source of water.

Most of the farmers interviewed were very enthusiastic towards the project; they could not suggest anything to improve it, beyond spreading this kind of projects. They claimed the inclusion of their neighbours to maximise the benefits. They felt that the farmers participating are isolated in a matrix of farms following conventional practices. Such producers would continue polluting, and even dumping their pollutants to common sources of water or other farms (G., Gutierrez (April 13, 2009); O., Garcia (April 16, 2009); H., Astaiza (April 19, 2009) personal communication).

The level of involvement of the contestants was high, mostly due to the changes they could already experience in their farms. In April 2009, when the interviews were conducted the contestants saw considerable changes in terms of order and hygiene as well as in quality of produce. All of them, considered that their improvement was significant and that they could achieve the changes proposed in the scheduled time. Although, not all of them were applying to Global-GAP certification, they were enthusiastic about complying with the protocol. Regardless of certification, all of them consider worthy their participation in terms of the changes they had experienced.

In this regard, the project combined with the previous effort of Alianzas increased the productivity from 10 kilos to 13 kilos per bunch. The cost of producing one kilo was reduced from COP 280 to COP 187; increasing the returns of producing one kilo of plantain to COP 154. This considerable escalation in the profits was achieved through the improvement of the quality, raising from 50% to 80% the amount of fist quality produce (Rios, 2009).

In environmental terms, all the contestants were active in their proposals for improving the environment of their farms. The suggestions were oriented to the protection of water sources, control of erosion and reforestation plans for their farms. At the end of the project 45 producers planted trees in their farms to protect water bodies improving the environmental conditions of their properties (Rios , 2009).

After finalizing the project, some of the producers internalized the GAP protocol and kept improving the conditions of their farms. Some of the producers participating in the GAP project were approached by ICA to implement its GAP protocol and get the certification. The standard that ICA applied specifies its control points and demands to have a technician to approve and sign the management plan. Nevertheless, the previous experience of the producers participating in the GAP project contributed in the adoption of this practices.

By the other side, it seems that producers tend to follow the indications of technical advisory personnel just during the project period. Due to this fact, many of the productivity goals proposed by Alianzas and also by the GAP project have fallen dramatically. Many members of Musaceas have misused the human and economic resources given by projects as Alianzas and GAP, and mostly the opportunity to improve their living conditions through the adoption of better management practices. The lack of a planning mentality makes difficult the implementation of technological packages where record keeping and planning are essential (L.F., Arias, personal communication, March 6, 2012).

At the present, Musaceas is looking for raising productivity and quality through a new approach that aim to increase the commitment of producers. They propose a technical package directed just to interested producers and debited from their Funds in the Association. They believed that if producers have to pay the technical advisory they would be more committed with the process. Considering that some of the producers have the potential and attitude to change and improve their crops this new approach could help them to increase the quality of their produce and consequently the profitability of the activity (L.F., Arias, personal communication, March 6, 2012).

## **5.2 Resources**

This section will describe the financing and allocation of resources available for the project. As stated in previous sections, the project was financed 50% by the SENA-Asohofrucol fund and 50% by Musaceas and other institutions participating.

The project allocated functions to each of the stakeholders. For instance La Gran Colombia University was providing the operative team, some labour for the implementation of GAP and the design of an interactive CD and the GAP booklet for the producers. In order to cover the expenses, the stakeholder provided some of the resources and the rest was financed by the SENA-Asohofrucol fund. Following the same case, the most important contribution from Universidad La Gran Colombia is 55.56% of the project management cost in kind. They were also helping to pay the technician's salaries and providing most of the cash for the design and publication of the CD and booklets. (Appendix 3)

In the case of Musaceas, it provided all of the supplies and equipment, and the infrastructure investments for the project. It provided the highest contribution in cash from all the stakeholders, and 60% of the resources for the functions it was developing. Musaceas contributed with the expenses that were most difficult to cover by producers; sponsoring 50% of the certification cost and the storage investments. A big proportion of the resources to cover these expenses came from Municipalities that were also stakeholders of the process (GAP project coordinator, personal communication, March 6, 2012). (Appendix 4)

The project budget stated that producers were just benefited with the technical advisory, training, and some elements in kind like supplies to implement the integrated farming management, first aid kits, signalling and extinguishers. The resources to improve or build storages were granted just to farmers in the process to be certified. The rest of producers had to fit their storages with their own resources (GAP project coordinator, personal communication, July 22, 2009). It is important to clarify that the supplies for integrated farming management were part of the Alianzas project. Therefore, the farmers pay them back when their produce was sold to the commercial partners. In general terms, farmers in the process to be certified would receive a greater economic support but also the formal commitment to comply with the GAP protocol in the scheduled time. The rest of producers would have less formal responsibilities with the project but a higher economic load. Nevertheless, there were informal arrangements with some of the producers outside of the process of certification. If they contributed with resources for building the storage, the project could grant them fertilizers for the same amount. So, the effort they made was compensated without affecting their economy (L.M., Rios, personal communication, July 22, 2009).

### 5.3 Training

This section will describe the training process and the materials used. In addition, it will refer the educational background of farmers related with their capacity to respond to the specific training.

Since the adoption of GAP implies a change in behaviours and practices, the most important part for its successful implementation was training and knowledge transfer. The training part of the project could be divided in training sessions and training/practice visits. While the formal training sessions were developed at the beginning of the project during two months, the visits were done every two weeks to guarantee continuity in the process (GAP project coordinator, personal communication, March 18, 2009). An important part of the methodology was to program training sessions for each location, small groups of producers and the proximity of the venue with their farms. Otherwise it would have been difficult for them to attend considering their lack of time and the distance from their farms to towns.

Besides of the operative team, there were trainers from SENA to support the training sessions. All of the contestants were satisfied with the methodology and highlighted the choice of the venue as an important factor for the training success. The training approach was theoretical and practical, and the materials were related with the training topic. No didactic material was given during the training sessions. This fact was pointed as a weakness for one of the contestants (O.,Garcia., personal communication, April 16 2009).

Regarding the educational background of producers interviewed just one finished the secondary education, five of them accomplished the basic level, and the rest started the secondary level but disserted school. All of them are literate and have basic mathematic knowledge. Despite of their basic educational background, none of the contestants expressed difficulties to understand the concepts included in the training. The recordkeeping was the most difficult concept for them; nevertheless the reinforcement of this concept by the operative team helped the producers to incorporate this concept to their practices.

The attitude of the operative team during the training was important because allowed farmers to feel comfortable and committed to the project (G., Gutierrez, personal communication, April 13, 2009). The technicians and project coordinator expressed that it is important to feel they are at the farmers level to make them understand the concepts.

#### 5.4 Private Actors- Trade

This section describes the participation of private actors such as retailers and the measures used to help the commercialization process for farmers participating in the project.

The SENA-Asohofrucol Fund demanded to include agreements with commercial partners. So, the GAP project included one the agreements that producers previously have as part of the Alianzas project. Nonetheless, when the contract was signed the plantain produced by farmers had a lower quality. At that time, it was advantageous for producers to have such commercial partner that was offering a stable price (COP 350) and a considerable demand of their products (Gomez, et al., 2006). The changes implemented through Alianzas and the GAP project allowed producers to raise quality, and consequently the prices of their produce (Rios , 2009).

The GAP project contributed with the creation of a trading plan for all the producers. That plan, considered their estimated production, how was fluctuating, and how could be sold. The plan allowed farmers to decide which was the best option for the commercialization of their produce (GAP project coordinator, personal communication, July 22, 2009). In this scenario, one of the associations opened a transformation plant to process its member's yield, and another farmers approached a supermarket to sell his production (GAP project coordinator, personal communication, July 22, 2009).

After finalizing the Alianzas project, Musaceas signed a contract with a new commercial partner. At the present they have a trading price of COP 550, but considering the fluctuations of the market, it is difficult to get the loyalty of producers with the association. Most of producers do not see the advantages of selling to the association in terms of the benefits they can get from it in the long term, and in many cases they just consider the immediate price offered by independent commercial partners (Musaceas director in 2012, personal communication, March 6, 2012).

#### 5.5 Certification

This section will illustrate the requirements to obtain the Global-GAP certification, the capacity of farmers to comply with the protocol and the problematic points when fulfilling the requirements of the standard.

As previously explained in the background, the compliance of Global-gap is divided in major and minor must and recommendations. There are different protocols, but the one applying to the project

is the all farm base protocol. In the next table, the control points and compliance criteria (CPCC) are specified.

Table 1. Control Points and level of compliance in the Scope All Farm Base of Global-Gap

<b>CONTROL POINTS</b>	<b>LEVEL</b>
<b>Record keeping and internal self assessment/ internal inspection</b>	
Accessible Records	Major Must
One Internal Inspection per year	Major Must
Corrective actions as a result of non conformances	Major Must
<b>Site History and Site Management</b>	
Record system for each unit of production	Major Must
Reference system for each field established in a farm plan or map	Minor Must
Risk assessment for new agricultural sites	Major Must
Management plan to minimize all identified risks	Minor Must
<b>Workers Health, Safety and Welfare</b>	
Written risk assessment for safe and healthy working conditions	Minor Must
Written health, safety and hygiene policy	Minor Must
Record for training activities and attendees	Minor Must
Certificates of competence for workers handling hazardous substances and working with complex equipment	Major Must
Health and safety training for all workers according with risk assessment	Minor Must
At least one person trained in first aid	Minor Must
Documented hygiene instructions	Minor Must
Basic hygiene training for all workers	Minor Must
Hygiene procedures implemented	Minor Must
All subcontractors and visitors aware of procedures of personal safety and hygiene	Minor Must
Emergency and accident procedures visually displayed and communicated	Minor Must
Potential hazards identified by signs	Minor Must
Safety advice for hazardous substances available	Minor Must
First Aid Kits available	Minor Must



<b>CONTROL POINTS</b>	<b>LEVEL</b>
Workers with suitable protecting clothing in accordance with legal requirements	Major Must
Protective clothing cleaned after use	Major Must
Member of management responsible for workers health, safety and welfare	Major Must
Two way communication meetings between management and workers	Recomm
Accurate overview over all workers	Minor Must
Clean food storage areas, designated dining areas, hand washing facilities and Drinking water for all workers	Minor Must
Habitable on site living quarters with basic services and facilities	Minor Must
Information about subcontractors available	Minor Must
<b>Waste and pollution management, recycling and reuse</b>	
Identification of waste and pollutants	Minor Must
Documented farm waste management plan that covers wastage, reduction, pollution and waste recycling	Recom.
Waste management plan implemented	Recom.
Farm and premises clear of litter and waste	Major Must
Premises with adequate provisions for waste disposal	Recom
<b>Environment and Conservation</b>	
Written action plan to enhance habitats and increase biodiversity in the farm	Minor Must
Tangible actions to enhance the environment for the benefit of local community	Recom.
Contents and objectives of conservation plan imply compatibility with sustainable agriculture	Recom.
The plan include baseline audit to understand existing biodiversity on the farm	Recom.
The plan include action to avoid damage and deterioration of habitats on the farm	Recom.
The plan include activities to enhance habitats and increase biodiversity on the farm	Recom.
Consideration of converting unproductive areas to conservation areas	Recom.
Monitoring of energy use in the farm	Recom.
<b>Complaints</b>	
A complaint procedure available related with issues covered by the Globalgap Standard	Major Must

<b>CONTROL POINTS</b>	<b>LEVEL</b>
Documents to the actions taken with respect of such complaints	Major Must
<b>Traceability</b>	
Documented recall procedure to manage the withdrawal of registered products from the market	Major Must

Source: Global GAP (2007b)

The project proposed the certification of 25 producers in the Global-Gap protocol in a collective modality, through the TPC Control Union (Rios, 2009). Nevertheless, the certification process was not attained mostly due to organizational causes (GAP project coordinator, personal communication, March 6, 2012). The project proposed the creation of a self-assessment committee to supervise the performance of farmers and guarantee the continuity of the certification. This committee was formed by Musaceas, one member of each association and Luis Fernando Ospina, Musaceas director in 2009 in the head of the process. He was trained to manage the Internal Auditing System of the certification process and extend his knowledge to the rest of the committee (GAP project coordinator, personal communication, July 22, 2009). Nonetheless, at the moment of applying for certification this auditing system was not in place, threatening the monitoring and continuity of the certification process. That was referred as the main cause for the not certification by the TPC Control Union, besides of the not fully compliance of some of the farms visited (GAP project coordinator, personal communication, March 6, 2012). Monitoring farmers' performance through the internal auditing is very important to keep the certification, because just one of the farms is randomly visited to check the compliance points. So, the internal auditing has the role of supporting producers to apply constantly with the CPCC, increasing the compliance and guaranteeing the stability of the process.

The farmers in the process to be certified did not expressed any problematic point for compliance, beyond of the difficulties to manage the recordkeeping system that was gradually solved with the help of the operative team. The whole group of farmers participating in the process were aware of the importance of the certification. From the group of 70 farmers, at the end of the process 45 were applying GAP. Nevertheless, just a group of 25 was chosen to apply for the global-Gap certification (Rios , 2009). The rest could apply, but did not have the resources to pay the certification process. Regardless of the certification process, all the contestants were aware of the importance of applying GAP in terms of improving their living conditions.

Unfortunately, the certification was not achieved and most of the producers participating did not continue applying GAP as full. Nevertheless, many of the changes that were implemented during the process as signalling and proper pesticide and fertilizer storage are still in place. Just practices that require planning like record keeping and some of the practices for the integrated management are difficult to follow if is not someone there to highlight it. Other important outcomes like maps and soil and water analysis are also there to continue the process when farmers get the proper stimuli to adopt a GAP protocol, by themselves or with the support of another institution. Like in the case of ICA, that use the synergies created by the GAP project to promote its own certification scheme. This certification is affordable for farmers and with the proper promotion could constitute the definitive system to foster the adoption of GAP in Colombia.

## **6 Discussion**

This study case examines the role of Good Agricultural practices in achieving rural development. Besides of analysing the process of implementation of GAP in plantain produce in Colombia, it includes the use of standards and certification schemes and their role promoting the implementation of GAP and contributing with sustainability. In that sense the debate must be divided in two sections, the role of GAP for farmers sustainability and the use of standards, specifically private standards as Global-GAP as a governance alternative in agri-food chains. The first section will debate the role of GAP, the process of implementation in the case analysed and the capacity of farmers to adapt their practices to GAP and Global-GAP standards. The second section will discuss the use of private standards vs. public governance in the agri-food sector. The analysis will focus in the role of private standards to achieve rural development in developing countries, including its implications for food security and inequality.

### **GAP as a tool to promote Rural Development in Colombia**

#### **The role of GAP in Sustainable Farming**

Good Agricultural Practices appeared as a concept to harmonize farming management in a global scale, considering hygiene and sanitary conditions during production as well as environmental and social considerations. In this sense GAP has been considered as one method to internalise the externalities produced by agriculture (Niño de Cepeda & Miranda, 2003). According to this

perspective, the private sector read the concerns of consumers and developed the GAP initiative as a market tool. For public agents this is an opportunity to cooperate with the private sector to tackle a problem that has been treated exclusively from the public realm. By the other side, farmers' motivation to adopt GAP should come not just from the demands of retailers and consumers but also from the opportunity to rectify their role in the production process as well as enhance their position in the production chain through the use of GAP. In addition to these incentives, farmers can use GAP as a system to administer their production. The pivotal role of record keeping and registering in GAP can benefit farmers establishing a system for decision taking and the control of their activities (Niño de Cepeda & Miranda, 2003).

Regarding the role of GAP in rural development, it is important to start from the importance of building capacities and transferring knowledge in the development process (Perez-Aleman, 2011). The creation of new capabilities and the adaptation of practices to global standards constitute a route to reach rural development. Perez-Aleman, cited some cases where the introduction of new standards improved farmers livelihoods. For instance, Nicaraguan dairy producers had to adapt their practices to HACCP requirements of neighbour countries to keep their market. The participation of public and private actors was necessary to reach the upgrading that finally benefited farmers and increase the country's exports.

In this sense global standards as GAP introduce innovations and knowledge flows that contribute building new capacities in farmers and create local institutions that improve production and organizational skills. The introduction of global standards creates an environment where the interaction among farmers, retailers, public institutions, private companies and NGO's contributes identifying failures and weakness in the development process and in the production chain (Perez-Aleman., 2011). In our study case, the exercise of promoting the use of GAP in a group of plantain producers helped identifying the difficulties in the incorporation of the record keeping concept, the economic obstacles for smallholders to cover the expenses of GAP implementation and the organizational problems inside producers associations. These weaknesses in the process of implementation provide insights to adapt the process and design appropriate policies and measures by institutional actors, and stakeholders in general.

Beyond the shortcomings identified in the process of implementation, it is clear that the implementation of GAP and new food safety regulation goes beyond the safety concerns of northern consumers benefiting local population in different ways. The indirect effects of the implementation of GAP include lower production costs, and therefore cheaper and better quality products for poor

consumers, better working conditions and a safer environment for producers and workers (Gomez, et al., 2011). Improving food safety in developing countries contributes with the battle against malnutrition and child mortality considering that contaminated foods are important causes of mortality (Gomez, et al., 2011). In addition, the presence of pathogens, parasites and high levels of pesticides in food impede the proper intake of nutritious elements and increases the probabilities of chronic diseases in vulnerable individuals (Unnevehr, 2007).

It is a fact that microbial organisms and micotoxins contaminate large amounts of food in the tropics (Unnevehr, 2007; Gomez, et al., 2011). So, the incorporation of practices like GAP that minimize the presence of pathogens and contaminating elements benefit directly farmers and the society in general. Farmers are often not aware of the hazards that food contamination entails or the risks associated with their activities. So, the knowledge flow generated to help them to adapt their management practices incorporating hygiene, sanitary practices, reduced pesticide usage and working safety measures contribute in their development, health and living conditions.

Extending the role of GAP to its effect on farm environmental conditions, it is not clear if standards can help to achieve environmental sustainability (Perez-Aleman., 2011). In general terms, the compliance points related with environmental goals in GAP protocols are weak in the sense that are voluntary, and in the case of Global-GAP their non compliance do not prevent certification (Fuchs & Kalfagianni, 2010). In the Global-GAP standard there are some points related to environmental protection. Although there are just recommended CPCC, they included the elaboration of an environmental plan, including sustainability issues and proposed actions to enhance biodiversity. Nevertheless, in the Standard 4174 from ICA the environmental goals are almost inexistent, and just included the proper management of water contaminated with pesticides to avoid contamination of water bodies as a major compliance point and the elaboration of a waste management plan as a minor duty.

Although direct environmental tasks are almost absent from GAP standards, it is important to reconsider the indirect impact of some of the improved practices and enhanced quality products on the environment. For instance, record keeping and cropping planning are oriented to minimize losses and maximize productivity which are reflected in less pressure on the environment. Pre and Post-harvesting losses mispend water, soil and energy resources. In addition, increasing productivity can help in the diminishing the advance of the agricultural frontier (Gomez, et al., 2011).

## Implementation Process

Extending the debate to the process of implementation of GAP in the case analysed it is clear that despite involving different institutions and stakeholders there were weaknesses in the process that impeded the attainment of the objectives. GAP programs are relatively new in Colombia and the institutional framework supporting them is under development. As mentioned before the successful implementation of GAP depends on knowledge circulation and therefore the existence of networks among producers and different stakeholders is vital to foster the adoption of new practices (Perez-Aleman., 2011). In our case, despite of involving different public and private stakeholders and building the project trusting on the capacity of Musaceas to work as a bridge with the different institutions, the goal of certification was not achieved and the adoption of GAP was poorly maintained among farmers after the project.

Following the process of implementation, it can be observed that the integration of stakeholders was poor and the development of Musaceas as an institution was weak in the moment of presenting the project. The creation of Musaceas was mainly fostered by an external stimulus and the level of coordination among member was poor in the first stages of its existence. Beyond that, the project was seen as a mean to strengthen the association by using the resources available by the SENA-Asohofrucol Fund. In addition, the process of writing the proposal was made by a member of La Gran Colombia University with some knowledge of Musaceas but little practical understanding of the process (GAP project coordinator, personal communication, March 6, 2012). Under this circumstances, the involvement of stakeholders was artificial and the forecasting of the budget and some of the processes unreal. This situation is evident when observing the roles of different stakeholders and the exclusivity of the operative team in developing the project with an overload of duties.

In other regard, the fact of using the synergies among the Alianzas and GAP projects instead of contributing with the attainment of goals was an obstacle in the integration of stakeholders. It created confusion from the beginning, when farmers were unable to differentiate projects and many of them enrolled the GAP project believing that was compulsory. In addition, the dependence on the supplies and technical advisory provided by the Alianzas project caused delays and affected the credibility on the GAP project. It is obvious that was little integration with the institution developing the Alianzas project, as well as with other stakeholders such as municipalities. If we consider that the ability of implementing innovations largely depends on the connection among farmers and other

stakeholders to coordinate actions (Perez-Aleman., 2011) it is understandable the poor performance of the project in achieving the goals of certification and adoption of GAP.

Besides of the interference of the Alianzas project, the poor coordination among the operative team and Musaceas was impeding the attainment of goals. This lack of communication was evident when the operative team was unable to follow the progress in the creation of the self-assessment committee in Musaceas. A better coordination could have solved this issue and therefore the main cause of non-certification for farmers. In this kind of processes, the success can be linked to institutional change and the creation of links among stakeholders (Perez-Aleman, 2011), an issue that was ignored in this project. Beyond that, the difficulties expressed during the project were common to other GAP projects and solvable with the use of adequate financial and training policies.

### **Farmers Capacity to Adopt GAP**

Regarding the farmers capacity to adopt these changes, it was expressed by the Musaceas director in 2012, that farmers do not have a planning mentality hampering the incorporation of record keeping and better management practices. Nevertheless, it would be simplistic to believe that Colombian farmers do not have the planning capacity to adopt innovations and improve their productivity and living conditions. Especially when farmers were positively involved and responding to the concepts during the project. Once again, this kind of changes cannot be achieved without creating links among farmers and the proper participation of institutional stakeholders. The case of farmers certified by ICA, shows the importance of continuity and proper stimuli to help farmers in the transition to better management practices. If the project would have involved ICA as a stakeholder to certify and support farmers after the initial project all the farmers could have been benefited and the project goals attained. Nevertheless, as in other cases (UNCTAD, 2005), in Colombia there is neither integration of institutions working on GAP nor coordination of objectives (SENA General Director of GAP projects in Colombia, personal communication, July 24, 2009), creating flows in resources and weakening the process of GAP implementation at the national level.

Regarding the problematic points, as was reported in a GAP study case in Costa Rica the main obstacles for implementation are the educational level of farmers in relation with the record keeping learning and the financial burden in adequating infrastructure to comply standards (UNCTAD, 2005). In our case, the most critical point was the establishment of the record-keeping system. Most farmers expressed difficulties to understand the concepts behind record keeping and to internalize

the habit of registering. Nevertheless, once in place the registers were useful to develop a trading plan and helped farmers to understand how much were they producing and how.

By the other side, although the operative team reported a conscious work in transmitting the concepts of GAP and reinforcing the record keeping practice, most producers abandoned GAP procedures after the project. In this sense, the creation of an institutional backup for this kind of projects could help to perpetuate in time the concepts and resources granted by a project. Associations like Musaceas could generate this backup with the contribution of extension services like SENA. In this context, the projects would have continuity and the resources invested would be assured.

In the specific case of adapting their practices to Global-Gap, the difficulties are not related with the non-compliance but with the financial burden of paying the TPC. The requirements of Global-Gap are basically the same of any GAP protocol, and the differing points do not represent any difficulties for farmers. For instance Global-GAP is including some extra CCCC in environmental and waste management criteria, but they are classified as minor musts or recommendations. Nevertheless, the cost of certification can be difficult to afford for smallholders. In our case, even when that cost was covered by the project, it was done through a collective certification, limiting the performance of individuals to the whole group performance. So, even if most producers were complying with the CCCC, the certification was denied because of the poor organizational level of Musaceas and the lack of the self-assessment committee. By the other side, if a GAP protocol is free of cost or affordable by smallholders, they can apply individually and respond to the TPC by their own actions. In this regard, Global-GAP is in disadvantage when compared with public schemes.

### **The role of Private Standards vs. Public governance in Developing Countries**

At this point, we reached the second section of the discussion related with the role of private standards in promoting rural development. In developing countries, the use of private standards is relatively new and regulation of agri-food chains has been in the public realm (Henson & Humphrey, 2010). Nevertheless, as supply chains become global the power of private food standards have reached virtually all the globe. Global-Gap was pioneer in this process, and has gradually extended its domain from pesticide usage to environmental and social aspects. Smallholders face two options in this scenario, either adopting the new standards or leaving the market. Adoption often requires large investments that are difficult to afford for smallholders hampering their entrance to the new trading channels (Lee, Gereffi, & Beauvais, 2010). Of course, the seriousness of this scenario



depends on how important are global supply chains in a country, but it seems that in time multinational and global food chains would dominate the market.

The literature shows evidence of the impact of standards leaving poor smallholders outside of the market. As mentioned above the high implementation cost limit the adoption by poor smallholders in developing countries, and in many cases threaten their livelihoods when the market channels are closed for non-certified farmers (Fuchs & Kalfagianni, 2010). In our case, considering the role of plantain in the Colombian diet and the voluntary status of private and public standards does not represent any threat for farmers' livelihoods. Certified farmers are a minority and although their improved quality is reflected in better prices, most of plantain producers harvest lower quality produce. The demand for plantain is high, and there is a share of the market for all of them. Lower quality plantain is sold to industries and traditional markets where poor and middle class consumers can buy it at moderate prices, while high quality plantain is sold to supermarkets where its appearance and size is reflected in a higher price. Although producing higher quality plantain is translated in higher returns for farmers, the link between certification or adoption of GAP and access to local markets in Colombia is still not clear.

Nevertheless, the current situation may change when the public standard developed by ICA becomes compulsory forcing farmers to implement GAP in order to keep their production licenses. This condition has to be analysed by policy makers, considering the cost of implementation and introducing the standard progressively through promotion schemes and financial aid to poor smallholders. Otherwise, the implementation of GAP in Colombia could threaten the livelihood of thousands of farmers. The analytical framework to implement those GAP promotion projects and provide financial aids would have to discriminate between crops, and its role in the local market, and many geographical and cultural factors that hamper profitability of the agricultural activity.

Regarding the appearance of a public standard in Colombia, it has been noted a tendency in the development of private standards to overlap or encourage the appearance of public standards (Henson & Humphrey, 2010). The development of the concept of GAP in Colombia has motivated the creation of a regulation that considered the relation of private standards with export products and the inexistence of food safety standards to cover the products for domestic consumption. Despite of the fact that multinational supermarket chains are also introducing private standards for local consumption products, traditional markets are still important food chains in Colombia. In this kind of markets there are minimum entry barriers and safety standards facilitating the entrance for smallholders with difficulties to meet private standards (Lee, Gereffi, & Beauvais, 2010). So, the

appearance of a public standard and the possibility of making it compulsory could cover the dynamics of traditional markets allowing a progressive upgrading in food safety for domestic markets.

Nevertheless, the existence of a public standard does not replace the role of private standards. Public standards are developed to ease the coordination among global agri-food chains, and are meant to transmit information about a product and reduce risks and costs when handling global food chains. Private standards also include attributes that are not included in public standards, and often are used as brand differentiators. (Henson & Humphrey, 2010) So, it is difficult for public standards to equal the role of private standards especially regarding the level of confidence necessary to avoid risks in global food chains.

Private standards use TPC (Third Party Certifiers) to increase the level of confidence when monitoring compliance. The TPC improve confidence in standards, because they are external, independent and in theory impartial (Anders, Souza-Monteiro, & Rouviere, 2010). In our case, the appearance of a national public certification scheme benefits the process of implementation of GAP, if use correctly. Because is free, adapted to local conditions and maybe easier to understand by farmers. But, national institutions rarely have the capacity to properly enforce compliance or guarantee the appropriated auditing process. In addition, the lack of a TPC to guarantee transparency in the process may affect the confidence transmitted by the standard to the international market. Although institutional certification schemes can be considered bias or partial, the introduction of a TPC increases costs and therefore the difficulty for smallholders to apply for certification.

So, it could be said that despite of not being equivalent to private standards the appearance of public standards is positive for developing countries. Public standards can introduce GAP concepts benefiting the society in terms of food safety and farmers when upgrading their practices, productivity and living conditions. Although their introduction should be gradual and consider the financial obstacles for farmers to upgrade their practices, their impact and objectives seem to be more suitable for the context of developing countries. Nevertheless, considering the power of multinational food retailers and supermarkets at the global scale, farmers will need to apply private standards and be certified in the future in order to get access to local and export markets.

## Implications for food security and inequality

The discourse about the implications of private standards on smallholders, food security and inequality is extensive. In the first place, the implications of private standards on smallholders go beyond the possible barriers to adjust their practices to the new protocols. The cost of implementing private standards is high and does not imply just one investment but a continual disbursement for farmers. Some studies show that the expenses of certification and upgrading must be done annually and considering the lack of premium prices for certified products, the revenues are not enough to cover them (Amekawa, 2009). In addition, the discourse is oriented in north-south relationships (Fuchs, Kalfagianni, & Clapp, 2008; Amekawa, 2009; Henson & Humphrey, 2010; Fuchs & Kalfagianni, 2010; Fuchs, Kalfagianni, & Havinga, 2011). The main concept is that private standards when focusing in raising quality for northern consumers push smallholders in the south out of the market. A gender perspective is also added to this standpoint, considering that in developing countries from 60-80% of food is produced by women (Fuchs, Kalfagianni & Clapp, 2008).

Going on with the critics to private standards, the availability of better, safer and diverse products benefit mostly wealthy consumers while poor consumers have limited access to these better quality products (Fuchs & Kalfagianni, 2010). In the case of plantain, just high quality produce reaches supermarkets. Producers often have to be certified either by global-gap, retailer owned standards, or the ICA certification in order to sell to supermarkets. Despite of the efforts made to promote the adoption of GAP standards and certification, it is still a small proportion of farmers benefited by these programs. In addition, certification and GAP adoption requires capital investments, limiting its adoption for poor smallholders outside of GAP promotion projects. In terms of consumption, the poorest consumers would not have access to these high quality products due to their prices, and would prefer to buy in small shops or traditional markets where prices are lower as well as quality. In other regard, it has been pointed out that supermarket chains usually manifold the prices of fresh products in Europe and USA, while farmers get the same prices they were getting years ago (Fuchs & Kalfagianni, 2010). So, despite of offering better quality products large supermarkets ignore the role of farmers in the production chain and their the prices could be too high for poor consumers. This condition increases the inequality and could threaten food security in developing countries.

Despite all the critics, the most conclusive trade off of private governance in agri-food chains is the lack of participation of stakeholders in the process of rule setting and the poor accountability of its performance (Henson, 2011; Fuchs, Kalfagianni, & Havinga, 2011). The key problem in this lack of democratic legitimacy is that private rules set, adopted and implemented by a small group of

stakeholders have a global impact on a wide variety of actors ( Fuchs, Kalfagianni & Clapp, 2008, Fuchs, Kalfagianni, Clapp & Bush, 2011; Fuchs, Kalfagianni, & Havinga, 2011). Regarding this issue, different authors pointed out the need of creating participation chanel for governments, NGO's and smallholders in the process of standard setting (Fuchs & Kalfagianni, 2010; Henson & Humphrey, 2010; Fuchs, Kalfagianni, Clapp, & Bush, 2011). Developing countries must get more involved in this process (Henson & Humphrey, 2010; Fuchs, Kalfagianni, & Havinga, 2011), in addition governments must pay attention to the consequences of private standards on their countries and challenge the authority of this kind of governance (Fuchs & Kalfagianni, 2010).

Although the debate about sustainability of private standards is extense and there are still no conclusive answers, it is important to keep in mind the difficulty of disconecting the consequences of private governance from the consequences of the globalization process on agrifood systems (Henson, 2011). Considering that the process of globalization is difficult to control, it is important to find out the ways to either increase the levels of democracy in private standards, or create private-public partnerships to constrain the possible negative effects of private standards. The governance of agrifood chains is an ongoing process that can be shapped by the actions of different stakeholders. So, the role of farmers associations, NGO's, public actors and consumers is very important to neutralize the effects of the existent private standards and to shape a kind of governance with better sustainability grades.

## 7 Conclusions

Implementing Good Agricultural Practices is regarded as a tool to harmonize farming practices with the societal expectations regarding safety, environmental and social issues. The Benefits of applying GAP are seen mostly in the sanitary conditions of fresh products and reducing risks associated with pre and post harvesting practices. Nevertheless their implementation introduce changes in farming practices and farmers habits that foster a rational usage of resources and build a system for decision taking at the farm level. The solely introduction of record keeping benefit farmers providing a system to evaluate the incomes and outcomes in the management and contributes in the organization and tidiness of the farm.

The process of implementing GAP in Colombia has been led by institutions like SENA, that promote GAP among smallholders contributing with raising the quality of produce for local markets as well as upgrading practices to meet the requirements of export markets. The implementation of GAP for smallholders requires the contribution of extension services to supply the training and financial tools to cover the expenses of the upgrading process. Nevertheless, the implementation of GAP through private standards as global GAP implies a further financial load due to the cost of Third Party Certification (TPC). Considering this higher cost, the projects supporting the certification through Global-Gap or other private standards must be careful in the selection of beneficiaries and consider criteria such as crops and the level of cohesion in producers associations when forecasting the impact expected by the certification. In many products, there is not link between certification and economic benefits or the market channels used by the product do not request the certification. In such cases, the certification seems to be unnecessary and the upgrading to good agricultural practices can be done through public schemes like the standard 4174 from ICA.

Nevertheless, the entrance of private standards to developing countries cannot be considered as negative, because it raises the standards of food safety, environmental and social issues for farming practices. The process of convergence of different private standards in developing countries motivates the intervention of public agents and the creation of institutions that contribute in the process of upgrading. In addition, it reveals the weaknesses in the production chain and the gaps in the institutions in order to develop and promote innovation. In our specific case, the attempt to implement the Global-GAP standard revealed the lack of cohesion in the producer association Musaceas and the need to link the different stakeholders participating in the process in order to achieve better results. It also revealed the weaknesses in the formulation process and the need to include other stakeholders and consider the interaction among actors like the most important task to build capacities in the beneficiaries.

The case analysed failed to achieve the goals of certifying and implementing GAP in a group of 70 farmers, because it neglected the role of the association in interacting with producers and other stakeholders. Despite of knowing the weaknesses of Musaceas as an association the project overestimate the role of training and knowledge transfer without considering the importance of the association in reinforcing and perpetuating innovations. Although technology transfer have a pivotal role in the process, the strengthening of Musaceas as an institution to support the process was neglected having as a consequence the non compliance in the creation of a self-assessment committee for the certification.

The case also showed that farmers have the capacity to adapt their practices to GAP, but the proper institutional measures have to be in place to ease the transition and perpetuate the adoption of these measures in the time. The certification of some of the producers participating in the project with the ICA protocol showed that besides of learning the practices and interiorizing the management an institutional framework and the opportunity of getting certified without cost are important factors to foster the process of upgrading. These farmers would have to continue applying the protocol in order to keep their certificates, while the rest of participants would have probably forgotten the concepts left by the project.

The appearance of the public standard 4174 from ICA at the time the project was concluding was an interesting coincidence, that shows the opportunities of public intervention in agri-food governance. This standard is more affordable for smallholders and is an opportunity to upgrade the safety of the food chain for domestic consumption. The massive application of this standard in the future will ease the transition of farmers to private standards required for export markets. Nevertheless, its implementation has to be accompanied with proper financial and educational measures to avoid the exclusion of smallholder from the market or inequalities in the competition with large farm units.

Going on with the weaknesses in the case analysed, the interaction with the Alianzas project was an obstacle for the integration of stakeholders and created confusion among farmers that could not differentiate the outcomes of the two projects. It interfered in the attainment of goals, when farmers could not keep the pace of the integrated management practices because of the delays with the supplies from the Alianzas project. In other regard, the exclusivity of the operative team performing the project duties shows the lack of integration among stakeholders and the need to involve other institutional stakeholders to support the process during and after the development of the project.

In terms of sustainability, GAP protocols and Global-GAP seem to be weak in the level of stringency. In the case of Global-Gap its qualitative nature pose little demands on farmers beyond of having the minimum environmental and social requirements. GAP in general is not very demanding in environmental and social terms, but its focus on clean management and record keeping can be a good way to optimise the usage of resources and then the environmental impact of the activity. At this point we should consider the indirect effects of the application of GAP in sustainability. In the first place the provision of cleaner and safer food is a contribution to diminish poverty and malnutrition. Then, the application of safety measures when handling with pesticides and other hazardous substances for farming practices reduces farmer's exposure to risks improving workers conditions as well as the general living conditions of the farmer's family unit. And finally considering

the improvements in quality of produce the farmers' incomes could raise, contributing in their economic development. So, the application of GAP can be a good instrument to foster rural development in Colombia. Despite of the critics, raising the sanitary conditions, quality of produce and revenues are important contributions for rural communities. However, the question is how to counteract the entrance of private standards through adequate policies and the intervention of all the stakeholders involved in agri-food chains.

In order to continue the discussion about the role of GAP in fostering sustainability, it would be important to follow the uptake level and the effects of implementing public standards such as the 4174 from ICA. This kind of research would show the role of institutional actors as well as the possible differences among public and private standards in terms of the obstacles for implementation and effects on inequality and market access for smallholders. Considering that public standards are motivated by reasons beyond the economic interest of multinational companies, this kind of research could contribute in differentiating the role of standards from the effects of globalized agri-food chains.

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Esponda, Carolina.	Owner La Estrellita Mannor.	2009-04-16
Garcia, Orlando.	Owner La Argelia Mannor.	2009-04-16
Gutierrez, Gloria.	Owner Villa Gloria Mannor.	2009-04-13
Molano, Luz Nelly.	Owner Marly Mannor.	2009-04-13
Muñoz, Luz Dary.	Owner La Esperanza Mannor.	2009-04-13
Quintero, Gloria Patricia.	Tecnical Advisory Officer GAP Project.	2009-04-15
Tabarquino, Mario.	Owner El Descanso Mannor.	2009-04-19
Gonzales, Edilson.	Owner La Lorena Mannor.	2009-04-16
Trejos, Luz Elena.	Tecnical Advisory Officer GAP Project.	2009-04-15
Turriago, Leonardo.	Owner Buenavista Mannor.	2009-04-13
Rios, Lina Maria.	Project coordinator	2009-03-18, 2009-07-22, 2012-03-06

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Ospina, Luis Fernando.	Musaceas director 2009.	2009-07-22
Pedraza, Jesus Maria.	SENA General Director of GAP projects in Colombia.	2009-07-13
Rios, Luz Stella.	CODESAROLLO Social Manager.	2012-03-06

## 10 APPENDIX

### APPENDIX 1: Description of people interviewed for the Stakeholder Analysis

- STAKEHOLDER: Universidad La Gran Colombia- Project executor.

**Objective:** To learn about the process of formulation and execution of the project of implementation of good agricultural practices in 70 producers of plantain in Quindío. Another aim is to understand how the resources are allocated and what are the responsibilities and response from different actors.

*Person: Lina Maria Rios, Project Coordinator*

- STAKEHOLDER: Farmers

**Objective:** To know their opinion about the project, learn about their role and the effectiveness of the methodology used and their capacity to achieve the goals proposed by the project. Their recommendations to improve are also taken in consideration.

*Person 1: Leonardo Turriago, owner Buenavista Mannor. (Calarcá, vereda Santo Domingo Alto).*

*Person 2: Luz Nelly Molano, owner Marly Mannor (Calarcá, vereda Santo Domingo Alto)*

*Person 3: Gloria Gutierrez, owner Villa Gloria Mannor (Calarcá, vereda Santo Domingo Alto)*

*Person 4: Luz Dary Muñoz, owner La Esperanza Mannor (Calarcá, vereda Santo Domingo Alto)*

*Person 5: Luis Alfonso Carmona, owner Aguabonita Mannor (Armenia, Vereda Puerto Espejo)*

*Person 6: Jairo Alvarez Montoya, owner La Cristalina Mannor (Armenia, Vereda Marmato)*

*Person 7: Carolina Esponda, owner La Estrellita Mannor (Armenia, Vereda Marmato)*

*Person 8: Ober Olarte, owner La Zulia Mannor (Armenia, Vereda Marmato)*

*Person 9: Hubertino Astaiza, owner El Mirador Mannor (Buenavista, Vereda La Granja)*

*Person 10: Orlando Garcia, owner La Argelia Mannor (Buenavista, Vereda Los Sauces)*

*Person 11: Edilson Gonzales Toro, owner La Lorena Mannor (Buenavista, Vereda Los Sauces)*

*Person 12: Mario Tabarquino, manager El Descanso Mannor (Buenavista, Vereda Los Sauces)*

- **STAKEHOLDER:** Technical Advisory Personnel

**Objective:** To learn about the methods to provide technical advisory in the project, understand the difficulties and to know their opinion about the allocation of resources and ways to improve the effectiveness of GAP projects.

*Person 1: Luz Elena Trejos, Technical advisory officer, GAP project*

*Person 2: Gloria Patricia Quintero, Technical advisory officer GAP project*

- **STAKEHOLDER:** Musaceas: Second-Order Cooperative Organization grouping the farmers participating in the project.

**Objective:** To gain knowledge of the organization and the cooperative skills of farmers associated, their perspective from the project potential to achieve good results and the role of the association in the implementation process.

*Person 1: Luis Fernando Ospina, Musaceas Director in 2009*

*Person 2: Luis Fernando Arias, Musaceas Director in 2012*

- **STAKEHOLDER:** Servicio Nacional de Aprendizaje SENA, supporting the technical advisory and educational process

**Objective:** To learn about the history of GAP in Colombia, the role of SENA promoting them and their participation in the current project

*Person: Jesus Maria Pedraza (SENA General director of GAP projects in Colombia)*

- **STAKEHOLDER:** CODESARROLLO, Institution managing the Funds of the Agriculture Ministry to support Alianzas Projects.

**Objective:** To know the final outcomes of the Alianzas project and understand the perspective of the institution promoting this kind of projects

*Person: Luz Stella Rios (CODESARROLLO Social Manager)*

## **APPENDIX 2: Stakeholder Questionnaires**

### **Stakeholder: Project Coordinator**

1. What actors intervened in the implementation process of this Project?
2. How was the formulation process for the Project and what actors participated?
3. Which are the objectives of the Project?
4. How was the attitude of farmers when the Project was proposed?
5. How did the implementation process start?
6. How were the farmers chosen to participate in the Project?
7. How was the attitude of farmers when the Project is proposed?
8. Which were the first obstacles when the implementation process started?
9. How was the participation of SENA and municipalities in the first stages of implementation?
10. What methodology was used to train farmers in GAP and what is their response?
11. What is the attitude of farmers when receiving technical advisory?
12. Who is providing such advisory and what is their profile?
13. What methodology is used to follow the progress of each farm?
14. What resources were available for the implementation of the Project?
15. How is the administration of these resources?
16. What percentage of the resources is allocated for managerial and operational expenses?
17. How is the participation of different family members in the Project?
18. How is the progress registered and what indicators are used to measure farmers performance?
19. In what extend has farmer's attitude changed during the different implementation stages?
20. What are the main challenges to achieve the Project objectives?
21. In general terms, what have been the main obstacles during the process?
22. What measures related with promoting biodiversity have been proposed or implemented?

23. Would be possible to propose other measures to promote biodiversity and what could the best way to do it?
24. What do you think would be farmers' attitude towards such measures?

### **Interview 2012**

1. Did the Project include resources to buy supplies for the demonstrative plots or for the farmers in the process to be certified?
2. How was the allocation of resources, were the initial financial plans followed by the operative team?
3. How was the participation of the commercial partners, how would you assess their performance?
4. What is the current condition of farmers? Are there new commercialization channels for them? Are they following the GAP protocol?
5. How has been the following of the Project?
6. What are the main reasons for non-certification?
7. Is there specific evidence from the effect of the application of GAP in general terms?
8. Did the farmers receive a booklet with the GAP procedures as stated in the proposed results?
9. After finalizing the Project, what do you think were the main obstacles for the Project?
10. Regarding integrated management, do you have any information about phyto-sanitary problems or there is any indicative of the success of GAP controlling them?
11. In what extend the non-certification is related with the standard?
12. What would you recommend for future projects or independent producers to increase the probabilities of certifying?
13. How was the reaction of farmers when they were informed about the non-compliance for certification?
14. What other proposed results were not attained?
15. What was the reaction of sponsors in relation with the non-certification?
16. Was there any penalty for the non-compliance of the Project goals?
17. Why did you write that the producers were certified in the final report?
18. In what extend was the non-certification a major lose for farmers?
19. In what extend was the process of implementation of GAP enough to Foster the development of farmers?
20. In what extend do you see the implementation of GAP or Global-GAP certification as promoters of sustainable farming in the case of plantain?



**Stakeholder:** Farmers

1. How did the process of implementing GAP start in your farm?
2. How did you get to know that your farm could participate in the Project?
3. Why do you think your farm was chosen to participate in the Project?
4. When you got informed about the Project objectives, how did you assess your capacity to achieve them? Did you consider that those objectives were difficult to achieve?
5. What difficulties did you find in the first stages of implementation of GAP?
6. What is your scholar level?
7. Can you describe the training process for the implementation of GAP?
8. Was the information received in the training course appropriated to achieve the tasks proposed by the Project, or there was something missing?
9. Did you have difficulties to understand the concepts treated in the training course?
10. What could you recommend for improving the training process?
11. How do you consider the support or accompaniment given by the operative team?
12. What was your attitude at the beginning of the implementation process?
13. At the beginning of the project what did you think would be the final results?
14. Has your opinion changed with the time?
15. How do you think the changes implemented in your farm are going to benefit you and your family in the long term?
16. Have you notice so far any changes in your living standard, production conditions or workers attitude?
17. According with your experience what do you think about the integrated management and other management practices recommended by the project?
18. In your opinion, from the project objectives, which would be the most difficult to achieve?
19. What difficulties have you found to follow the registering system proposed by the project?
20. How do you visualize your farm at the end of the project? What are your expectations regarding the project?
21. What could you recommend for further GAP project in order to improve the implementation process and obtain better results?
22. What do you expect regarding the commercialization price of your products? What have the personal related to the project told you about it?
23. What do you consider the most important outcome from the GAP project?
24. How do you consider the investments or economic support given by the project to improve the infrastructure in your farm? Are they appropriated to achieve the goals of the project?

25. Considering your progress, how do you assess your capacity to achieve the project goals?
26. What would be the most problematic goals to achieve? Explain
27. How could these obstacles be solved?
28. If at the end of the project your farm were not certified, what would be your attitude towards GAP? What do you think is going to happen with the human and material resources invested in the project?
29. Are you participating in more than one project at the same time? If yes, what do you think about it, are there inconveniences or opportunities?
30. Do you find any complementarities between the projects in which you participate?
31. One of the project goals is to execute an environmental plan to solved problems related with erosion and protect water sources in the farm. What actions would you proposed to achieve this objective in your farm? Would you consider these actions useful or important for the farm performance?

**Stakeholder:** Technical Advisory personnel

1. How efficient do you think are resources allocated?
2. How do you see the farmers' attitude is positive for the attainment of the Project goals?
3. How is the methodology of the visits to farmers?
4. How did you follow their progress?
5. In what extent are the resources allocated for training enough to attain the Project objectives?
6. In what extend is the Budget flexible for unexpected changes?
7. Is there any coordination with the Alianzas Project technical advisory personnel?
8. How do you manage the dependence of the Project to Alianzas?
9. What is the support of SENA and municipalities to the technicians?
10. How is the communication with Musaceas?

**Stakeholder:** Musaceas

1. What the history of Musaceas as organization?
2. As a second order organization how is the relation with the member associations?
3. Which are the member associations?
4. How would be assess the organization level of these associations?
5. What tools or services is Musaceas offering to its members?

6. How was the Alianzas project initiated?
7. How would you assess the results so far?
8. What is the contribution of Musaceas to the GAP project?
9. What agreements have the “Alianzas” project to facilitate the achievement of its goals?
10. What is the role of Midas Codesarrollo in the “Alianzas” project?
11. How is Musaceas administering economic resources?
12. How is the procedure to allocate economic resources for fertilizers and other supplies in the “Alianzas” project?
13. How is the communication to others stakeholders in the GAP project working?
14. How do you assess the results of the GAP project so far?

### **Interview 2012**

1. How efficient was the allocation of resources of the Alianzas Project?
2. Where the goals proposed by the Project attained?
3. What do you think are the main reasons for the non-continuity in applying the GAP protocol?
4. How can you assess the condition of members?
5. How was the relation of farmers with the commercial partners?
6. How do you see the involvement of ICA in certifying members in a GAP protocol?
7. In what extend can you assess the evolution of the association?
8. How is Alianzas functioning in the present?
9. How can you assess the role of commercial partners?
10. What is the current Price paid to members?
11. What are the most significant problems for the association and members in the present?
12. What do you think about the non-certification in the Global-GAP protocol?
13. What would you recommend for further projects?

### **Stakeholder:** Servicio Nacional de Aprendizaje SENA

1. How does it work the National Program for the implementation of GAP?
2. How is the history of SENA supporting the implementation of GAP?
3. Besides of the participation in GAP projects what other activities is SENA performing to promote GAP's in Colombia?

4. What other GAP projects were implemented before the plantain project, and how can be their performance assess?
5. What difficulties have been recognized in previous projects and what tools or criteria were used to solve them in the plantain project?
6. In which way is SENA monitoring the results of these projects and the compliance of the responsibilities of the parts engaged?
7. What is the satisfaction degree of SENA with the results that the plantain project is having so far?
8. What is the participation degree of NGOs, Institutions and associations presenting proposals for projects of this type?
9. What other projects are currently being implemented and what is their progress?
10. What criteria were used to chose the plantain project among other projects Presented?
11. What is going to happen in the future with this kind of projects, are they going to be supported periodically?
12. Is there any tendency in the selection of projects, regarding crops or institutions involved?
13. In your opinion what is the role of GAP in rural development and the strengthening of agro-environmental policies in Colombia?
14. What would be the role of SENA in this scenario?
15. How would you assess the participation of other institutions in the implementation or promotion of GAP in Colombia?
16. What would be missing to optimize this process?
17. Are there governmental policies promoting GAP? And what are their results?

### APPENDIX 3: Global Budget by stakeholders

Stakeholder	Financed by SENA- Asohofrucol (COP)	Contribution in Kind by stakeholder (COP)	Contribution in Cash (COP)	Total (COP)
Universidad La Gran Colombia- Seccional Armenia	116.350.000	32.100.000	4.100.000	152.550.000
MUSACEAS	63.405.250	68.300.080	23.055.250	154.760.580
SENA Branch Quindío	0	5.000.000	0	5.000.000
FUNDACION INTAL	20.000.000	13.400.000	0	33.400.000
TOTAL	199.755.250	118.800.080	27.155.250	345.710.580

Source:SENA, 2008

**APPENDIX 4: Allocation of resources supplied by Universidad La Gran Colombia-  
Seccional Armenia**

Item	Financed by Fund COP	%	Stakeholder Contribution				Total COP
			Kind COP	% Kind	Cash COP	%Cash	
Project Management	8.000.000	44.44	9.100.000	55.56	0	0	17.100.000
Internship salaries	21.700.00 0	100	0	0	0	0	21.700.000
Technicians salaries	46.800.00 0	75.73	15.000.000	24.27	0	0	61.800.000
Project Coordinator salaries	38.200.00 0	100	0	0	0	0	38.200.000
Labour on farms	0	0	8.000.000	100	0	0	8.000.000
Interactive CD and booklet	600.000	30	0	0	1.400.000	70	2.000.000
GAP booklet for producers	1.050.000	28	0	0	2.700.000	72	3.750.000
<b>TOTAL</b>	<b>116.350.0 00</b>		<b>32.100.000</b>		<b>4.100.000</b>		<b>152.550.000</b>

Source: SENA, 2008

### APPENDIX 5: Allocation of resources provided by Musaceas

Item	Financed by Fund COP	%	Stakeholder Contribution				Total COP
			Kind	% Kind	Cash COP	%Cash	
Storage investments	0	0	4.950.000	47.14	5.550.000	52.86	10.500.000
Certification cost	10.000000	50	0	0	10.000.000	50	20.000.000
Labour in integrated management	0	0	8.000.000	100	0	0	8.000.000
Labour in plot management	0	0	2.000.000	100	0	0	2.000.000
Supplies for the implementation of instructive plots	53.400.000	60	35.600.030	40	0	0	89.000.030
First aid kits for producers	0	0	8.500.000	80	2.000.000	20	10.500.000
Signalling for farms	0	0	7.000.000	66.67	3.500.000	33.33	10.500.000
Equipment for the proper use of pesticides	0	0	2.250.050	52.94	2.000.000	47.06	4.250.000
Soil and water analysis	5.250	50	0	0	5.250	50	10.500
<b>TOTAL</b>	<b>63.405.250</b>		<b>68.300.080</b>	<b>0</b>	<b>23.055.250</b>		<b>150.760.580</b>

Source: SENA, 2008

