

# **QUALITY AND ENVIRONMENTAL MANAGEMENT OF COCOA IN ECUADOR**

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## **A CASE STUDY OF THE INTERNAL CONTROL SYSTEM OF WIÑAK PRODUCER ORGANIZATION**

**A Research Project Submitted to Van Hall Larenstein University of Applied Sciences, in Partial Fulfilment of Requirements for the Degree of Agricultural Production Chain Management, specialization Horticulture Chains**

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## LIST OF ABBREVIATIONS

AC	Approval Committee
ICS	Internal Control System
IFOAM	International Federation of Organic Agricultural Movements
PO	Producer Organization

## GLOSSARY

- **Farming unit:** the area and/or facilities (both organic and non-organic) for which the individual farmers/member of the groups are responsible
- **Operator:** the actor who signs the contract with the certification body and which is responsible for maintaining the ICS. The operator should have a legal form and structure. Main types of operators are co-operatives, farmers' organizations or exporters that contract smallholder farmers.
- **(Group) Production unit:** The area for which the operator is responsible, including production, processing and export.
- **Smallholder small scale farmer:** A small farmer is a farmer who directly cultivates land using principally the manual labour of his own family. Compared to his region he has little capital. This is also the reason why his operation is not mechanized and why his use of external inputs is low. To market their products small individual farmers are organized in smallholder organizations. (Naturland, 2002)

## ABSTRACT

The mayor part of agriculture practitioners are small farmers and often are located in remote areas with long travel times from one place to another. Overall revenues from their agricultural production is also too small to allow a viable farm inspection by an external inspection body for each farmer, reasons for what smallholder groups have been certified on the basis of internal control systems for many years. An ICS is a central body within farmers group that ensures the compliance of all smallholders farmers with an organic standard.

The objective of this study is to assess Wiňak producer organization current internal control system in meeting their internal quality regulations as well as the external requirements on organic cocoa production.

The research has a qualitative and quantitative approach based on: case study, survey, literature, empirical data and documents of the PO. Survey to farmers, members of Wiňak PO in the field and interviews to staff in office of the organization is done by semi-structured questionnaires. The study explores the elements of Wiňak ICS to verify which one of them requires to be enhanced. To investigate strategies for a continual improvement of the ICS, the research also analyses the structure, position in cocoa value chain and services provides by Wiňak PO. To know if there are differences between big, medium and small farmers in the understanding of internal and external requirements of organic production and satisfaction with the services delivered by the PO, the research use an Anova statistic test (SPSS).

Results show that key elements to be enhanced are: Internal regulations, training of farmers and internal inspectors; limited personnel of the PO that makes conflicts of interest more likely to occur; yield estimates need to be updated and a risk assessment need to be developed. No long term relationships with stakeholders of cocoa value chain are established by the PO. It was found a good level of understanding of external requirements of organic production within farmers; understanding of internal regulations got a low qualification. Satisfaction with services provided by the organization was good. However no statistical differences were found between big, medium and small farmers.

Findings of this research are used to make the following recommendations: designing a training program, performing a detailed risk assessment, gathering documents and procedures in an ICS Manual, prevent conflicts of interest and build an approach for continual improvement.

**Key words:** Producer organizations, smallholders, Internal Control Systems, organic certification

# CHAPTER 1 INTRODUCTION

Cocoa production in Ecuador is mostly from a native variety called “National-Up” that has a better flavour and aroma and is used as a raw material for fine chocolates manufacturing, so the production is mainly intended for exportation (Anecacao, 2008). Cocoa beans production of farmers is being sold to intermediaries, who mixed the beans of different producers, decreasing the quality and the incomes of the farmers. European Union is the main market from Ecuadorian cocoa beans (Anecacao, 2008). These countries demand and paid better prices for a product with certifications like organic production and fair trade. Wiñak producer association is planning, in the long term, to entry directly into the European market so they applied for organic certification, according to the BCS control criteria (Certifying body) that are an interpretation of the Organic EU regulation 834/2007 (BCS, 2011). The organization has implemented and internal control system (ICS) to guarantee the organic quality of the product (Schoenmakers and Augstburger, 2001) and to use it as an internal tool to enhance its quality performance. The producer organization requires being consistent on the quality requirements to maintain the certification and to continuously improve the produce and services delivered to it internal and external costumers.

## 1.1 Background of Wiñak Producer Organization

WIÑAK producer organization became a legal organization in July 29, 2010. It is located in the Amazon region of Ecuador, town of Archidona, Napo Province in the community of “San Diego”. Farms of the organization are located in an average altitude of 630 meters above sea level. Average temperature is 24° C with an annual rainfall of 3000 mm and an average humidity of 85%. The topography of the area is irregular with small slopes; the soils are silt-clay.

The organization was created in response to a need of the producers of this region to be represented and to create a marketing channel for the cocoa they have cultivated as a result of a previous productive project called “Rukullakta” developed since 1996 to 1999, with funds of the International Canadian Development Agency, to improve the living conditions of the producers. The output of this project was the establishment of 333 ha of cocoa plantations near the cities of Archidona and Tena. To market the cocoa that was planted, a productive project called: Optimization of Cocoa Supply Chain in “Tena” and “Archidona” was implemented with the financial support of the Ecuadorian Cooperation Fund for Development and the Spanish Agency for International Cooperation. Technical assistance was provided by an NGO called Center of Self Development. This project operates from 2000 until December 2010.

WIÑAK producer organization has 211 members, distributed in 29 communities that grow “National” cocoa variety in farms with extensions between 0.25 to 5 hectares. The organization got the organic certificate in May 31, 2011, granted by the certifying body BCS Oko-Garantie GmbH. The scope of the certification is European Union market. As indicated before, the producer organization requires accessing its Internal Control System for the continuous improvement of this system and to improve the capacity building of the Organization.



Picture 1: Community of Santa Rita part of WIÑAK Producer Organization



Picture 2: Members of WIÑAK Producer Organization in a meeting

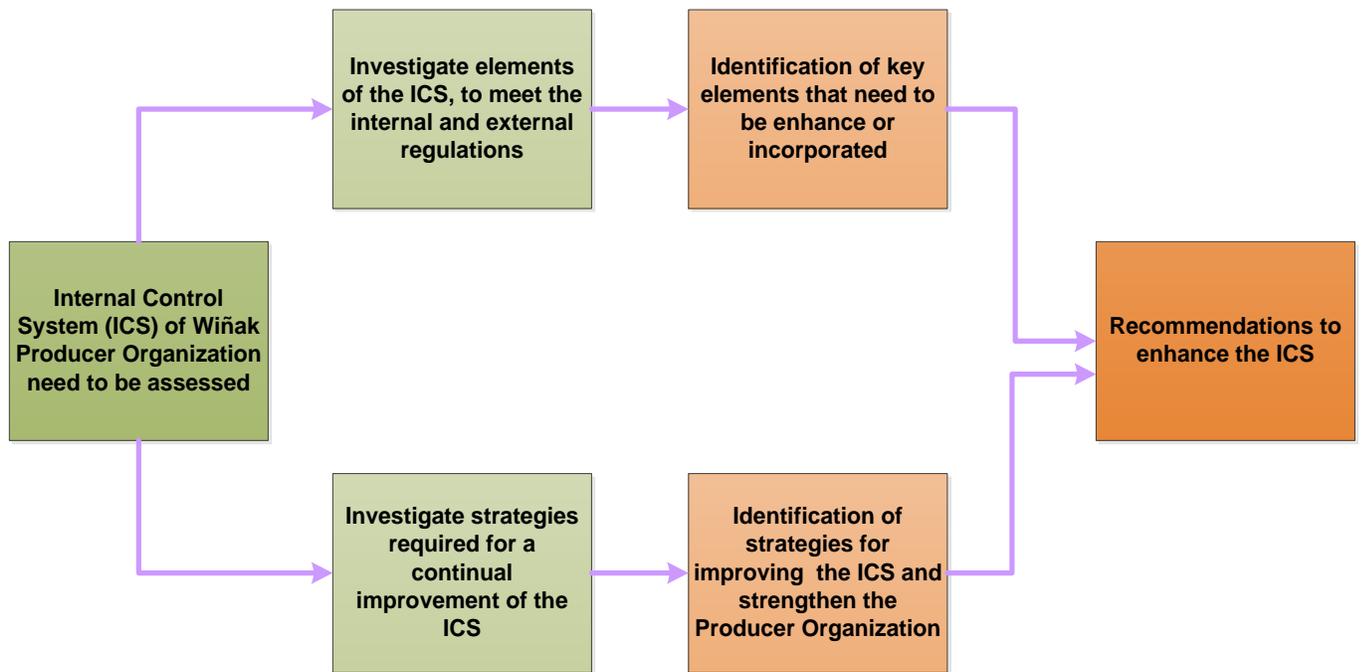
## 1.2 Research objective

To assess Wiñak producer organization current internal control system in meeting their internal quality regulations as well as the external requirements on organic cocoa production and formulate recommendations in case of deficiencies.

### 1.3 Research Framework

To assess the internal control system of the organization, the research had two parts. The first part evaluated the elements of the ICS comparing them with a Non-Compliance Matrix of ICS elements developed by IFOAM (Appendix 1). This process verified the elements that need to be improved or that are missed. After this evaluation the study carried out an analysis to state the strengths and weaknesses of Wiñak ICS. The second part investigated strategies required for a continual improvement of the internal control system in relation with the organizational structure, position in the value chain and services that the PO provides. The final output of this research are recommendations to enhance the ICS. Figure 1 summarizes the information stated above.

Figure 1: Research Framework



### 1.4 Research Questions

1. Which are the key elements of the producer organizations' Internal Control System for meeting the internal quality regulations and external requirements (Organic EU regulation 834/2007) in organic cocoa production?

Sub-questions:

- i. What are the elements of the producer organizations' Internal Control System?
- ii. Which are the internal regulations of the producer organization for organic cocoa production?
- iii. Which are the requirements of the EU Regulation for Organic Food and Farming (No. 834/2007) and how they were implemented in Wiñak Producer Organization?
- iv. To what extent the elements of the internal control system contribute to fulfill the internal and external regulations of the producer organization?

**2. What strategies are required for a continual improvement of the producer organization internal control system?**

Sub-questions:

- v. What is the organizational structure of the producer organization and how does it influence the internal control system?
- vi. What are the services that the producer organization delivers to its members? Are the different sizes of farmers satisfied with these services?
- vii. What is the position of the producer organization in the cocoa value chain?

## **CHAPTER 2 LITERATURE REVIEW**

### **2.1 Defining a Group Certification and Internal Control System (ICS)**

#### **2.1.1 Why a Group Certification?**

A majority of agriculture practitioners worldwide are smallholders and often are located in remote areas with long travel times from one place to another. Also, the overall revenue from their agricultural production is too small to allow a viable farm inspection by an external inspection body for each farmer. For these reasons, about 15 years ago, smallholders in developing countries in cooperation with certification bodies have been developing systems to assure compliance with organic standards for producers as a group (IFOAM, 2007). Smallholders generally do not have the ability to establish her/his own marketing channels, bookkeeping, finance and receive training/education, also there is no a good communication, and an absence of storage and processing facilities. It is interesting to note that through a group certification, small producers are able to address those issues which a smallholder can not deal by him/herself (Elzakker and Rieks, 2003).

Group certification is used in the organic sector as a way to allow small producers in developing countries that are organized as cooperatives or farmers organizations, to certify products for western markets via an internal control system (ICS). ICS is a starting point for addressing smallholder issues, as it is a functioning mechanism in the organic sector to lower certification costs and allow small producers to access certification and export markets. (FAO, 2004)

According to IFOAM (2007) a smallholder group certification implies that there is:

- A central body or operator, being responsible for ensuring the group's compliance to applicable standards. The group can be a self-organized cooperative or a farmers association or simply a buyer or processor who contracts farmers (contract production).
- A formal internal control system (ICS) in place.
- One single certification for all individual production as well as processing and handling activities registered within the group. Individual operators within the group may not use the certification independently.

#### **2.1.2 Defining an Internal Control System (ICS)**

Internal Control Systems were originally developed to assist smallholders in marketing, record keeping, all kinds of paperwork and communication with the certifier and competent authorities. (Elzakker and Rieks, 2003) As states by FAO (2007), Internal Control Systems are the organic group certification mechanism for small producers in developing countries.

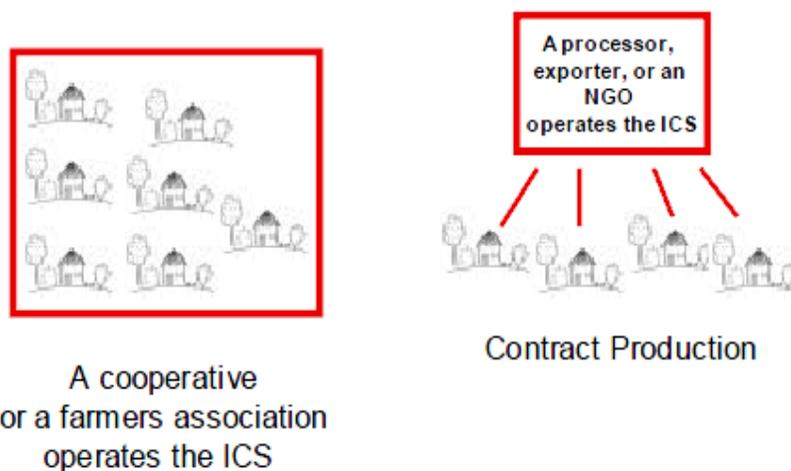
IFOAM (2007) definition of an Internal Control System is that it is a documented quality assurance system that allows the external certification body to delegate the annual inspection of individual group members to an identified body/unit within the certified operator.

Another concept mentions that an ICS is a system that guards the integrity of the organic quality of the product. It is a system in which all persons dealing with the product (growers, buyers, store keepers) are identified, registered, instructed on the requirements for organic certification and contracted to ensure compliance. The activities of these persons are then monitored in a system of regular visits and documentary control. Besides this, the persons involved are made aware of their common responsibility for the product, which implies a certain social control. (Schoenmakers and Augstburger, 2001)

In a ICS a central body (operator) ensures and verifies that all individuals farmers comply with the respective standards. Each farmer needs to sign a contract with the organization in which they declare their commitment to following the specific internal regulations of the project. (Elzakker and Eyhorn, 2010). This leads us to the types of smallholder groups that are eligible for smallholder group certification (IFOAM, 2007) as shown in figure 2:

- Group of farmers (e.g. a cooperative) sets up an internal control system and also organizes joint buying and marketing for their organic produce from farmers in the organic program. The group owns the organic certificate.
- Processor and/or exporter (sometimes this can be an NGO) contracts small farmers to produce certain organic crops for the company. The processor or exporter is the ICS operator and organizes all internal control procedures. The company owns the organic certificate.

**Figure 2: Types of small holder group certification**



**Source: IFOAM (2004, p.4)**

To finalize the section of the Internal Control System definition, it's interesting to mention a finding of The Secretariat of the Social Accountability in Sustainable Agriculture (SASA) project that made a research on different Internal Control Systems of producer groups in developing countries: Thailand (rice), Burkina Faso (mangoes), Costa Rica (coffee) and Uganda (cotton). SASA project made an examination of the different kinds of internal control used by SASA organizations, finding that beyond the primary objective in the IFOAM ICS (to control internally the compliance with the production standards and assure the specific quality requirements) other internal control functions ranged from financial and product traceability to systems with developmental goals or continual improvement approaches that could support capacity building amongst producers. (FAO, 2004)

## 2.2 Defining the elements of an Internal Control System (ICS)

Organic certification bodies have certified smallholder producer groups since the mid-1980 with principles and basic benchmarks laid down in IFOAM's Accreditation Criteria. However in 2003, IFOAM finished a process to set more precise levels and definitions for implementation of ICS inspection and certification like definitions of an ICS, basic elements, evaluation protocols, appropriate re-inspection rates, risk assessment tools and others. (FAO, 2004). NATURLAND, is a private farmers association that promotes organic agriculture in Germany and all over the world and also has accessible and clear information concerning Internal Control Systems, reason why it was used as another source of information. Table 1 below illustrates common ICS elements when comparing IFOAM (2004) and NATURLAND (2002) information.

**Table 1: ICS Elements**

<b>1. Internal Regulation</b>
<b>2. Qualified Personnel</b> 2.1. Quality manager 2.2 Internal inspector 2.3 Member of the approval committee
<b>3. Training and Advice</b> 3.1 On farm level 3.2 For internal inspectors 3.3 For other personnel
<b>4. Internal Farm Control</b> 4.1 Physical farm inspections 4.2 Documentation
<b>5. Monitoring the production flow</b>
<b>6. Risk Assessment and Critical Control Points</b>

A description of these elements is indicated below.

## 2.2.1 Internal Regulation

Each smallholder organization needs to define its own internal regulation related to various aspects concerning the group. These regulations have to be followed by all members, associates or contracted parties. It is important that the regulation can be easily understood by everybody so they must be set up and presented in a way that takes into account the reading and writing level of members. (Naturland, 2002)

Every member has to be informed about the internal standards in written form. In case this is not possible regular meetings with all members have to be organized to inform them about the internal standards and requirements for certification. (Naturland, 2002)

The organization has to elaborate an Internal Regulation with the content summarized in table 2.

**Table 2: Minimum Requirements for Internal Regulation**

1. Organic production standards in compliance with a standard with legal character such as Organic EU regulation 834 or a private standard like Naturland or IFOAM.
2. Rules of participation for farmers in the organization, including a procedure for conversion to organic farming.
3. Internal standards have to include a procedure for excluding individual farmers in case of violations of the standards/requirements as well as a procedure for sanctions.
4. Internal regulation should cover formal commitments



Source: Naturland (2002, p.23)

Organic internal standard is the internal production guideline, which outlines all farm production requirements, this means everything that an organic farmer will be expected to comply with. (IFOAM 2007)

Usually a summary of the organic internal standard is given to farmers as an annex to the contract, or the most important requirements are simply listed in the farmers' contract. For communication of the most important aspects to the farmers it may be a good idea to include illustrations in addition to text. If farmers are illiterate, the certifier may require a description of procedures on how the farmers can still have access to and understanding of the internal standard (e.g. illustration of standards). (IFOAM 2004)

## 2.2.2 Qualified personnel

Qualified personnel are required in order to guarantee the quality of organic products produced by the smallholder organization.

ICS staff is very important for the success and efficiency of the system. It is important that one person has overall responsibility for the ICS. This person is usually called 'ICS Manager' or 'ICS Coordinator'. The different tasks of the ICS need to be delegated to different people like

extensionist/internal inspectors, purchasing officers. In the end it is important that somebody is in charge and is qualified to do the work for each procedure of the control system. For the integrity of an ICS it is also crucial that conflicts of interests are avoided. One measure is that an inspector may not inspect his friends or family farms. (IFOAM, 2007)

The type of staff needed and the main tasks they will have to perform are described as follows: (IFOAM, 2004)

1. **The ICS Coordinator or ICS Manager:** There has to be a an assigned ICS Coordinator who is in charge to coordinate the internal control system, organize the internal inspections, coordinate between field staff and approval staff, co-ordinate the external inspection and act as a the contact person for the external inspection body.
2. **Internal inspector:**
  - There has to be a sufficient number of qualified internal inspectors.
  - The internal inspector must be sufficiently qualified to perform a thorough and objective internal inspection.
  - There has to be a CV, a contract with the description of her or his duties and conflict of interest declaration available for each internal inspector.
3. **Organic Approval Committee:**
  - The set-up of an internal approval committee is necessary for organizations with a high number of farmers participating in the organic programme, assigned to take the internal approval decision.
  - Approval personnel must be qualified and neutral to take objective approval decisions.
  - There has to be a CV, a signed declaration of conflicts of interest, a written contract with list of responsibilities available for all approval personnel.
  - Members of the Approval Committee are: Chairperson, Secretary and project supervisor (ICS Manager)

Minimum staff requirements for ICS are:

**Table 3: Minimum Staff Requirements**

- |   |   |
|---|---|
| <ol style="list-style-type: none"><li>1. Appoint a qualified person as quality manager.</li><li>2. Appoint qualified persons as internal inspectors.</li><li>3. All personnel must be aware of their responsibilities.</li><li>4. Conflicts of interest must be avoided.</li><li>5. Clear assignment of responsibilities within the Internal Control System (ICS).</li><li>6. Keep farm files on all staff members.</li><li>7. Set up an internal approval committee if applicable.</li><li>8. Present an actual and dated list of the internal inspectors as well as of the members of the approval committee and update this list continuously.</li></ol> |  |
|---|---|

Source: IFOAM (2004, p. 7) and Naturland (2002, p. 22)

## **2.2.3 Training and Advice**

### **1. On farm level**

The main objective of the training is to inform and train farmers on the relevant aspects of organic farming and, especially, make them aware of the contents and implications of the internal regulation for organic agriculture. For those cases involving the conversion from traditional (especially indigenous) practices the need for training focuses more on the filing of records and the documentation needed to obtain a certification. (Naturland, 2002). Some smallholder groups decide to provide training and advice in field visits, some chose training meetings. (IFOAM, 2007)

Continuous training of farmers is a very important part of an organic programme and is in the responsibility of the ICS operator. Some aspects to take in consideration are: (IFOAM 2004)

- Each farmer needs to receive at least one initial advisory visit by the extension service or in an organized training.
- The participation and content of the training needs to be documented.

### **2. For internal Inspectors**

Regular training of internal inspectors is inevitable. The internal control system therefore has to provide for all necessary information and techniques the internal inspector might need in order to execute his tasks. This training can be achieved through in-house courses as well as through participation in seminars and courses organized by other parties. (Naturland, 2002). Also training can be done by workshops or by accompanying experienced colleagues on inspections. (IFOAM, 2007)

It is important to consider (IFOAM, 2004):

- Each internal inspector needs to receive at least one training by a competent person per year.
- The date of participation and content of the training of all ICS staff needs to be documented in the staff files.

### **3. For other personnel**

Training needs to be provided also for all personnel handling the organic product during all steps of product flow, regarding the necessary requirements of identification, separation of different qualities and documentation. (Naturland, 2002) Trainings of ICS personnel must be continuously, in order to be aware of organic farming practices, certification requirements and important internal procedures.

Minimum training requirements for ICS are:

**Table 4: Minimum Training Requirements**

1. One training course on organic agriculture has to be offered to farmers at least once a year.
2. Internal inspectors have to participate in a training course at least once a year.
3. A summary of the training courses offered by the organization has to be made available to the external inspector.



Source: IFOAM (2004, p.28) and Naturland (2002, p.23)

## 2.2.4 Internal Farm Control

### 1. Physical Farm Inspections (Internal Inspections)

The main purpose of physical farm inspections is to prove whether all farmers registered in the organic programme are working according to the production standards set up as part of the internal regulation. In case of deviations, the system has to make sure that farmers, who are violating these production standards are immediately removed from the programme and that their products will not be mixed with those of certified organic farms. (Naturland, 2002)

Each registered organic farmer is inspected by the internal control once a year by qualified internal inspectors. According to IFOAM (2004) internal inspections must consider the following aspects:

- There is one documented internal inspection per calendar year.
- The inspection must be carried out in presence of the farmer (or his/her representative) and must include a visit of the whole farm, storage of inputs and harvested products, as well as brief check of post-harvest handling and animal husbandry. The internal inspector verifies if the internal organic standards have been respected and if the conditions of last year's internal inspection have been fulfilled.
- The visit is documented in the Farm Inspection Checklist, which is signed by the internal inspector and acknowledged by the farmer (or his/her representative).
- In case of severe non-compliances, the results have to be reported immediately to the organic manager and all measures taken according to the internal sanction procedures.

Important Internal Inspections requirements are:

**Table 5: Internal Inspections requirements**

1. Every operator has to be inspected once a year by the internal inspector.
2. In case of serious violations, farmers, who are violating the production standards must be immediately removed from the programme and that their products must be separated and not mixed with those of certified organic farms.
3. The internal inspections and the results have to be documented.



Source: Naturland (2002, p. 23)

## 2. Documentation

The internal control needs to be documented. Since smallholder farmers can often not be expected to keep their own documentation, as it would be required for certification, the ICS keeps all basic farm documentation for the farmers as well as the documentation of the actual internal control. (IFOAM, 2007)

The following documents must be available for each farmer: (Naturland, 2002)

1. Formal commitment of growers to fulfill the internal standard (written contract)
2. Farmers list which includes at least the following information:
  - Location (community, colony, field)
  - Farmer's code
  - Name and surname of the farmer
  - Entrance date of the farmer to the respective organic programme
  - Total surface of each farm
  - Surface cultivated with organic cash crops
  - Surface used for cash crops in conversion
  - Conventional surface
  - Amount delivered to the organization last year
  - Crop estimation for next year
  - Name or code of the internal inspector
  - Date of internal inspection (at least one)
  - Result of the internal inspection (approved or sanctioned)
3. List of farmers being sanctioned together with respective sanction
4. Completely filled in inspection report forms of 100% of the farmers registered in the organic programme
5. Updated farm maps
6. Annual internal inspection report

According to IFOAM (2004), minimum farm documentation is:

**Table 6: Minimum Farm Documentation**

**The following documentation is needed for each farmer. The documentation is usually kept in farm files:**

1. Formal commitment of growers to fulfill the internal standard (written contract)
2. Basic Farm Data Form/ Farm Entrance Form with field history.
3. Update production information.
4. Farms maps.
5. Annual internal inspection report.



Source: IFOAM (2004, p.23)

### 2.2.5 Monitoring the product flow

The responsibility of the ICS goes further than the inspection of farm production activities. The ICS operator also supervises the purchase of organic produce from the farmer and subsequent

handling steps (as long as the product is under responsibility of the ICS operator). (IFOAM, 2007)

During purchase, the person responsible must have an updated list of the registered organic farmers at hand. He is obliged: (Naturland, 2002)

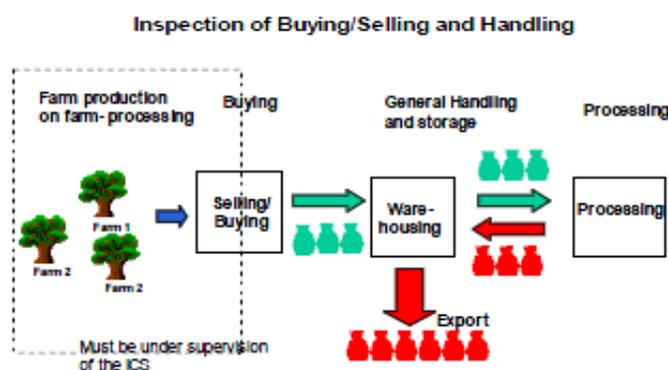
- Only to buy from farmers named on this list.
- To differentiate between the different qualities (organic, in conversion, conventional).
- Not to purchase more quantities than stated on the approved farmers list in the column “harvest estimation”.
- To keep detailed records on the quantities (with respective qualities) bought from each farmer.
- To store organic products completely separate from those of non-organic quality and by this to prevent the mixing of different qualities.
- To transport organic products in closed bags/containers that are properly identified according their quality (organic or in transition or private labels).

The smallholder organization is responsible for clearly identifying the crop of each farmer, using for example a code number assigned. When a farmer delivers his product he signs a delivery note where he ratifies that the product comes from his organic unit. The organization has to implement a documented purchase system, to make the supervision of the product flow possible.

Minimum documentation requested to evaluate the product flow are:

**Table 7: Minimum documentation requested to evaluate the product flow**

1. Documented purchase system with samples of all documents (i.e. delivery notes; reception notes)
2. Product entrance and exit receipts from the warehouses.
3. Reports on processing activities.
4. Yield estimates and list of realized sales.



Source: Naturland (2002, p.27) and IFOAM (2007, 16)

## 2.2.6 Risk Assessment and Critical Control Points

Risks that jeopardize organic quality must be known and taken into account in all internal procedures. Therefore the ICS must do a risk assessment; all necessary measures must be taken into account by the ICS to minimize risks. (IFOAM, 2007)

When establishing the Internal Control System, critical aspects that could affect the quality of the product and the certification process should be identified. Each organization is advised to make a list of all possible risks. This recommendation is especially valid for organizations that are starting an organic programme. For this purpose, the quality manager shall prepare a list of all possible risks. (Naturland, 2002). It is recommended that risk assessments are made by the producer group itself, as the risks determine to some extent how the internal control system is designed. Ideally it should be a separate chapter in their description of the ICS. Risks may change over time so it should be done thoroughly every (few) years. (Elzakker and Rieks, 2003)

Important remarks related with Risk Assessments are:

**Table 8: Risk Assessment**

1. A detailed initial risk assessment must be completed once.
2. The risk assessment has to identify risks on the farm level as well as during buying, processing or (export) transporting, as far as the product is under responsibility of the ICS operator.
3. The ICS takes all measures to minimize the identified relevant risks.



Source: IFOAM (2004, p. 15)

The initial risk assessment is first step toward raising awareness of critical aspects to be tackled in the ICS. It is recommended to repeat the risk analysis exercise regularly to be aware which of the previously identified risks might still be jeopardizing the organic quality and what are the most important risks at present. (IFOAM, 2004)

## 2. 3. Requirements of the EU Regulation for Organic Food and Farming (No. 834/2007)

On January 1<sup>st</sup>, 2009, the new EU Regulation for Organic Food and Farming (No. 834/2007) replaced the former EU Regulation 2092/91. (IFOAM EU GROUP, 2009).

General changes between these two regulations are: (IMO, 2008)

- A description of the objectives and principles of organic production has been included in the new legislation for the first time.
- The scope of organic production has been extended to cover aquaculture, wine, seaweed and yeast.

- There is now a set of criteria for the approval of new inputs (the current list of approved pesticides remains).
- Included for the first time are principles for food and feed processing, which will result in reviewing how organic food and feed can or cannot be processed.

A summary of the requirements of the Organic EU Regulation that are more related with smallholders situation that grow cocoa, are indicated in table 9: (IFOAM, 2004).

**Table 9: Requirements of EU Regulation for Organic Food and Farming (No. 834/2007)**

<b>Aspect</b>	<b>Requirement</b>
Definition of Production Unit	- Production unit includes: main organic crops, other conventional cash crops, home-consumption-crops and animal husbandry.
Off farm Inputs	- Only phytosanitary products and fertilizers listed in Annex II of EU Organic Regulation No. 2092/91 and 834/2007 are permitted. - Not allowed products shall not be stored within storage premises of the organic production unit.
Conversion (Transition) Period	- The transition period is defined based on the last date when inputs or prohibited techniques were used. - For perennial crops as cocoa a three-year transition before the first harvest of the organic product needs to be fulfilled. - During the period of time being identified as the transition period, the farmer is categorized as a farmer in transition. He needs to be included in the internal control and registered in the producers list presented for the external inspection
Part Conversion	- If the organization still has members which could not yet convert all of their crops to organic agriculture, it needs to develop a conversion plan of these crops to organic farming, including training for the farmers and prevent any contamination risk for the organic crop until full conversion of all farm units.
Seed and Planting Stock	- Use of species and varieties adapted to the local conditions of the area. - Seeds and reproduction material of organic origin for the organic crops. - Only if such seeds or planting stock is not available, conventional seeds and planting stock may be used, usually this needs to be approved by the certifier. The seeds and planting stock must not be treated with prohibited products. - It has to be ensured that the seeds are not genetically modified.
Soil Management	- Soil management on organic production shall maintain and/or build up organic soil matter, structural stability and biological activity. - This is achieved by cultivation of soil building plants (e.g. legumes, deep rooting plants) as intercrops or rotation crops, incorporation of manure and organic matter (e.g. compost), maintenance of cover vegetation or mulching, other measures to prevent erosion.
Plant Protection	- Pests, diseases and weeds are controlled by choice of appropriate species/varieties, appropriate rotation/intercropping, mechanical measures, protection of natural enemies.
Harvest and post harvest procedures	- The amount harvested is compared with the estimated yield assuring that farmers cannot deliver more than produced by themselves. - Separation and identification according to quality (organic, in transition, conventional) during all stages of the production process.

	<ul style="list-style-type: none"><li>- Deliveries are documented (a delivery order is signed by the farmer or he receives a copy of the sales document).</li><li>- Separation according to quality during the processing after the harvest.</li><li>- Separation and identification according to quality (organic, in transition) in the warehouse.</li><li>- Transport in correctly identified and closed bags that do not allow the mixing or exchange of the product.</li><li>- Labeling of the product according to the quality (organic, in transition, conventional)</li><li>- The use of products combating insects in the warehouses is restricted.</li></ul>
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## CHAPTER 3 METHODOLOGY

### 3.1 Data Collection

The research has a quantitative and qualitative approach, based on a combination of survey and case study. Data collection was done through a survey and interviews.

#### 3.1.1 Case study

A case study of the internal control system of Wiñak producer organization was conducted through interviews. Two members of the ICS staff were interviewed: one representative of Wiñak Directory and one internal inspector. These interviews addressed information related to the elements of the ICS, internal and external organic requirements, organizational structure of the PO, services delivered to the members of the organization and relations with stakeholders. (Related with sub questions 1, 2, 3, 4, 5 and 6)

A verification of ICS elements was carried out through an interview to the representative of Wiñak Directory, based on a check list of IFOAM to find the key elements of Wiñak control system. An additional questionnaire was designed to get more specific information. Questionnaire for the interviewees is indicated in Appendix 2.

#### 3.1.2 Survey

A survey was carried out on the members of Wiñak producer organization. In the survey research, the most distinctive characteristic is that the data is gathered from relatively large number of research units. A large number, within this context, is understood to be at least between 60 to 80 units (Verschuren and Doorewaard, 2010). Using this statement, sixty farmers were randomly selected and semi-structured questionnaires, in the local language (Spanish) were used to collect data. Three clusters of farmers were established: big, medium and small farmers (20 for every group) The clusters were established to identify if there are differences in the farmers' understanding of internal and external requirements according to the trainings they have received and if the farmers are satisfied with the services provided by the producer organization, in order to formulate accurate recommendations. Questionnaire for the survey is indicated in Appendix 3 (Related to sub question 2, 3, and 6). The survey collected the following information:

- Farmers' understanding of organic internal and external requirements
- Farmers' satisfaction with training and others services performed by Wiñak Producer Organization

Farmers were divided in three groups according to land size, taking in consideration that this factor influence rural livelihoods. Guidelines of progress for rural livelihoods appear to be characterized by a relative success to maintain and enhance farmers access to different

sources like land, skills and credit (Bebbington, 1999 cited in Besorak, 2009). Using this statement, reason for this clustering, was arbitrary based on a chance to study the farmers according to their access to land that seems to have a connection with more means to better livelihoods (The biggest land size, better access to other factors that influence livelihoods like higher yields, higher incomes, more access to education, better skills) As will be seen in section 4.1 (figure 6), when clustering producers by size, half of the farmers falls into medium size (51%); the other half is composed by large and small farmers in almost the same percentage (27% and 22% respectively) To determine whether the majority group, medium producers, have different perception of organic regulations and in satisfaction compared with big and small farmers was another reason that motivated the clustering of farmers according to land size.

The hypotheses formulated were:

- $H_0$ : There is not a difference in the understanding of organic internal and external requirements between big, medium and small farmers.  
 $H_1$ : There is a difference in the understanding of organic internal and external requirements between big, medium and small farmers.
- $H_0$ : There is not a difference in satisfaction level with training and others services delivered by Wiňak Producer Organization between big, medium and small farmers  
 $H_1$ : There is a difference in satisfaction level with training and others services delivered by Wiňak Producer Organization between big, medium and small farmers

### **3.1.3 Desk study**

Materials used were latest books, internet sites, publications and documentation of Wiňak producer organization. The literature review was done to understand the elements of the ICS, compared them with Wiňak ICS and formulate recommendations to improve the internal control system.

## **3.2 Data analysis**

The data was analysed according to the research objective, to find if there were statistical differences according to SPSS. Then compared with relevant literature in order to formulate recommendations for the enhancing of the internal control system of the producer organization.

### **3.3 Limitations of the study**

Data collection was conducted from July 11 to 23, when the period of purchase of cocoa beans by the producer organization was finished. The purchase period begins in February, continues in May until June. This could have affected the visualization of one element of the ICS related with the monitoring of the product flow and the post harvest management.

The main objective of the research was to evaluate the internal control system of Wiñak Producer Organization, so the study concentrated more on analysing the elements of this system within the organization. This situation limited a deeper study of financial factors as it will require assessing the revenues, expenses, assets, liabilities and analysing them to gain a complete insight of the organization sustainability.

# CHAPTER 4 RESEARCH CONTEXT

## 4.1 Wiñak Producer Organization

Wiñak Producer Organization is located in the Amazon region of Ecuador, town of Archidona, Napo Province in the community of “San Diego”.

WIÑAK in the native language of the region, that is “Kichwa”, means Progress. The organization is made up by native inhabitants of the upper zone of Napo Province and the natural reserve called “Sumaco”. Figure 3 illustrates the area where the producer organization is located.

Figure 3: Location of Wiñak PO in Ecuador



Source: Google map (2011)

The farmers grow cocoa “National” variety in an agroforestry production system, known in the native language as “Chakra”. Chakra is a system of shifting agriculture that includes diverse agroforestry systems developed in clears of the forests, in the production space. (MAGAP, 2010) Families in the “Chakras” combine subsistence and marketing crops. Some of the crops cultivated, apart from cocoa, are banana, cassava, coffee as show in table 10.

Table 10: Products cultivated by Wiñak PO

Product	Area (ha)	Harvest (tons)/year
Cocoa	255.5	51.1
Cocoa + Coffee	2.75	0.55
Cassava and banana	2.75	0.55
Banana and timbers	25	5
<b>TOTAL</b>	<b>286</b>	<b>57.2</b>

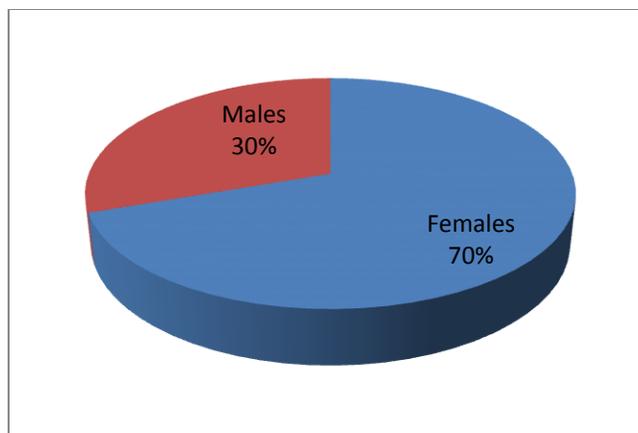
As described in table 10, total cocoa production of members in the organization is 51 tonnes per year. However in 2011 Wiñak PO was not able to purchase 100% of this volume to the farmers, because the organization did not receive on time, the funds that donors of the PO had to transfer them to buy cocoa since the beginning of the harvest season (February). This capital was transferred in May, so Wiñak PO was able to buy only 20% of the total production (10.6 tonnes). This volume will be used in section 5.7 to describe the position of the organization in cocoa value chain.

The producer organization got a legal status in July 2010, in an attempt to formalize a marketing channel for cocoa that was planted during “Rukullakta” project and to continue a second productive project: Optimization of Cocoa Supply Chain in “Tena” and “Archidona” financed by the Ecuadorian Cooperation Fund for Development and the Spanish Agency for International Cooperation. Technical support was provided by an NGO called Center of Self Development. This project enabled the organization to own a collection center with adequate infrastructure to collect and sell cocoa. The facilities include offices, reception area, cocoa fermentation boxes, drying plastic tunnels and storage room.

This project operates until December 2010, leaving the organization a capital of 15,000 USD that were transfer to the PO in May 2011. This fund has been being used by the organization to continue operating, situation that makes evident that the organization has a limited financial capacity and sustainability. Currently members of the organization are not paying a membership fee yet.

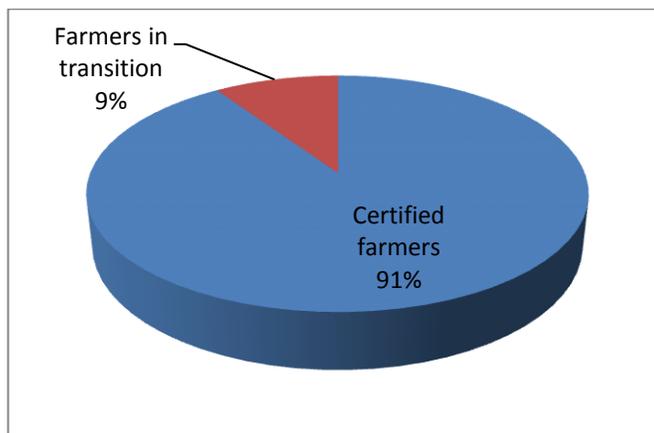
Review of the current information about the members of Wiñak PO shows that the organization has 211 members, distributed in 29 communities. It’s interesting to mention that the 70% of the members are female (147) and 30% are males (64). (Figure 4)

**Figure 4: Female and male members of Wiñak PO**



The producer organization got the Organic Certification in May 2011. The number of certified members is 191 and 20 are in the transition period. Percentages are shown in figure 5.

**Figure 5: Certified and in transition farmers of Wiñak PO**

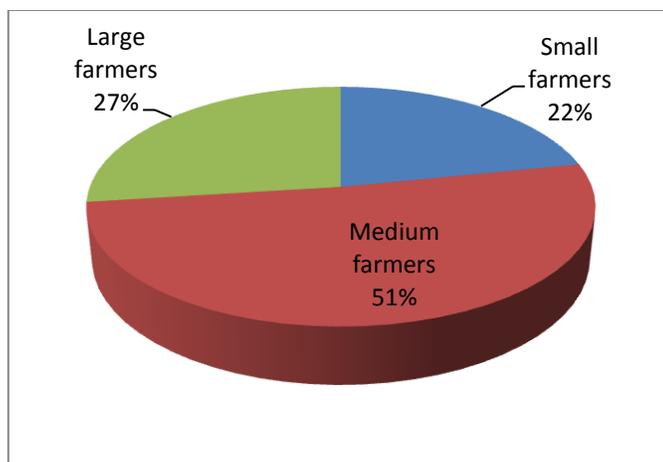


For the study, the farmers were divided in 3 groups, according to the area each member own, as follows:

- Small farmers: From 0.25 to 0.75 hectare
- Medium farmers: From 0.76 to 1.5 hectares
- Large farmers: > to 1.5 hectares

Figure 6 shows percentages of each group.

**Figure 6: Groups of farmers of Wiñak PO (according to area)**



## CHAPTER 5 RESULTS

### 5.1 Elements of Wiňak Internal Control System

To state the elements of Wiňak Internal Control System, the research analysed (within the producer organization) the elements indicated in table 1, based on IFOAM (2004) and NATURLAND (2002). Information of minimum requirements of each element is use to describe these elements.

#### 5.1.1 Internal Regulation of Wiňak Producer Organization

Results revealed that Wiňak Producer Organization has the following internal regulations as shown in table 11:

**Table 11: Internal regulations stated in the internal documents of Wiňak PO**

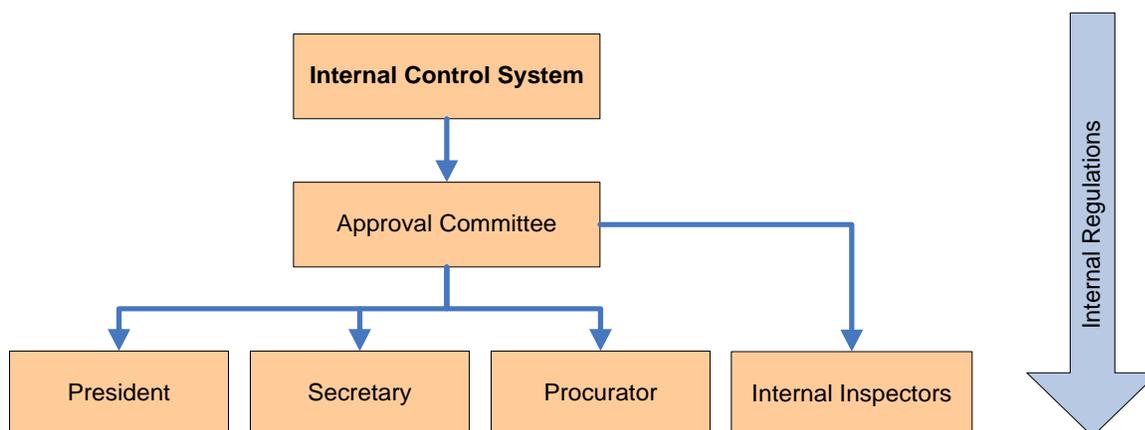
<b>Minimum requirements</b>	<b>Internal regulation content:</b>	<b>Internal Document</b>
Brief description of Organic Production Standards		Commitment Contract for organic production (Clause 1)
Sanctions applied by the PO in case of violations of organic production standards		Special Regulation for the Internal Control System (Chapter 5)
Formal commitment		Commitment Contract for organic production (Clause 1 y 2)

A more detailed description of the internal regulations is made in section 4.2, where the internal regulations are described.

#### 5.1.2 Qualified personnel

The researcher observed that the Wiňak ICS staff is form by: Approval Committee and Internal Inspectors. The approval committee is structured by a representative of Wiňak Directory, the technical team and the farmers. Between these three members, a president, a secretary and a procurator, are elected. ICS personnel structure is shown in figure 7.

**Figure 7: Wiñak ICS Organizational Structure**



Findings of ICS personnel are described in table 12.

**Table 12: Findings of Personnel in Wiñak PO**

Requirements	Findings
Quality Manager	There is not a formal position for a quality manager. The responsible for the ICS is the general coordinator of the PO. When he was interviewed he states that he received few trainings to perform his functions and he also learned by experience.
Internal Inspectors	There are 6 internal inspectors. One of the internal inspectors was interviewed. He mentioned that trainings by the NGO were few and he learned more by field practices and the guidance of a technical advisor of the productive project and another advisor from a producer organization called "Kallari"
Personnel aware of their responsibilities	Interview to the general coordinator showed that he is aware of his main tasks. In case of the internal inspector, he couldn't remember other responsibilities that are stated in the Function Staff Manual.
Conflicts of interest must be avoided	There is not in place a clear regulation to avoid conflict of interest. Interview to the general coordinator, showed that there was only one measure to avoid conflict of interest: Inspectors may not inspect the communities they originate.
Clear assignment of responsibilities in the ICS	In the Special Regulation for the Internal Control System, there are stated the responsibilities of the approval committee, but it is not a description of the responsibilities of internal inspectors.
Farm files of staff members	Files of staff members were not in place within the documentation when verified.
Set up an internal approval committee	Wiñak producer organization has an Internal Approval Committee. In the Special Regulation for the Internal Control System, there are stated the structure and responsibilities of internal approval committee.
Actual and dated list of internal inspectors and AC	There were not available a list with the names of internal inspectors and the actual members of the approval committee.

### 5.1.3 Training and Advice

Related with this element, the researcher made the following findings. (Table 13)

**Table 13: Findings of Training and Advice in Wiñak PO**

<b>Requirements</b>	<b>Findings</b>
Training courses for farmers	In the interview to the general coordinator, he explained that farmers have received courses in: Organic production, certification requirements, pruning and harvesting of cocoa. This information was then confirmed in the documentation of training records (Lists signed by the producers). These trainings were organized by the technical advisors of the NGO that support the PO during the productive project was operating.
Training courses for Internal Inspectors	Also internal inspectors were trained by the NGO in the main aspects to take in consideration during the inspections but there are no records of these trainings.
Summary of training courses	There is not available a summary of training courses organized for the farmers and inspectors. But there is available a folder of farmers training records. (Lists signed by the producers)

### 5.1.4 Internal Farm Control

Internal Farm Control elements are form by two sub elements: Internal Inspections and documentation. Findings are shown in table 14.

**Table 14: Findings of Internal Farm Control in Wiñak PO**

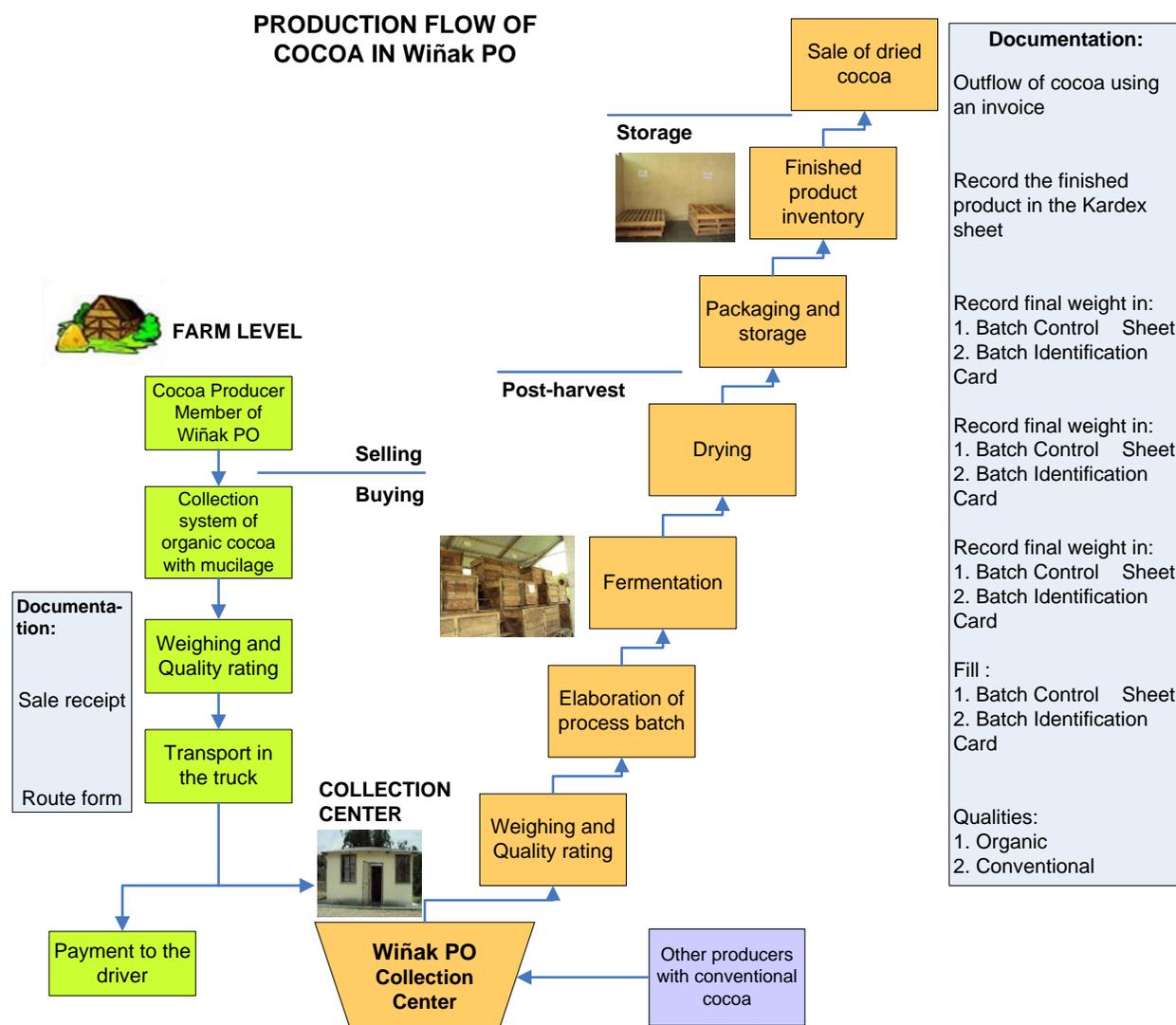
<b>Requirements</b>	<b>Findings</b>
<b>Internal Inspections requirements</b>	
Every member has to be inspected once a year by internal inspectors	For the certification of year 2011, every producer, member of Wiñak producer organization, was inspected. For next year, general coordinator is planning to make the internal inspections from September 2011 onwards.
In case of serious violations farmers must be separated from the organic programme	In the Special Regulation for the Internal Control System it is indicated that if during the first year the producer fails to comply with the regulations, he/she will be separated from the organic programme.
Internal inspections results are documented	Internal inspections reports are documented in individual folders of farmers.
<b>Documentation</b>	
Formal commitment of farmers to fulfil internal standards	Commitment contracts for organic cocoa production are documented in individual folders of farmers.
Farm data/Farm entrance with field history	Farmer's entrance forms and producer forms with basic information of farms are documented in individual folders of each farmer.

Requirements	Findings
Update production information	The producer organization has records with the yields estimations, but this information is not being updated.
Farms maps	Farms maps are documented in individual folders of farmers, but they are not drawn to scale.
Annual internal inspection report	Annual report on the results of the internal inspections has not been developed.

### 5.1.5 Monitoring the product flow

Product flow of cocoa within Wiñak PO is described in figure 8.

Figure 8: Product flow of cocoa Wiñak PO



The researcher considered is relevant to describe the production flow of Wiñak producer organization for a better understanding of this process. Harvest of cocoa begins in February, continues in May, until June, so the purchase period is carried out during these months. Production flow of Wiñak producer organization begins when the responsible for the purchase, plans the routes to the communities that are going to be visited. Then the buyer reaches the farmers communities' and proceeds to verify the type of cocoa they have, weight the product and fills the payment receipt that is signed by both parties. The buyer paid to the producer and put the cocoa in plastic closed containers, labelled according to the quality (organic or in conversion) that are going to be transported to the collection center. For the reception, in the production and collection unit of the PO, cocoa has to be re-weighed and then put in a specific place to establish the processing batch of a day and separating according to qualities (organic or in conversion) All cocoa purchased in the same day will become part of one batch. As the product is purchased, its sale receipt, weight and price paid will be recorded in the batch control sheet. When the day ends, this control sheet will be closed and an identification card for the batch is made to be placed in the wooden bins, where the product will be fermented. After the fermentation process, the final weight is recorded in the batch control sheet and batch identification card and then the product go to the next stage of processing; drying. After this process, dried cocoa is weighed, packaged in jute bags and then stored. This information has to be recorded in a kardex sheet. Finally when cocoa is sold and invoice is made and this output is documented in the kardex sheet. All this process can be visualized in figure 8. Wiñak PO also commercializes conventional cocoa that buys from producers that are not members of the organization. Separation of the qualities (organic, in conversion and conventional) is done at all stages.

Findings show that the PO complies with the minimum requirements for monitoring the production flow. These findings are stated in table 15.

**Table 15: Findings about monitoring the production flow**

<b>Monitoring the production flow</b>	
Documented purchase system	In all steps of the process the organization has documents to monitor the purchase system.
Product entrance and exit receipts from warehouses	Every time cocoa beans are received at the collection center a product entrance receipt is made (Batch control sheet) as well when dried cocoa beans are sold. (Invoice)
Reports on processing activities	Wiñak Producer Organization has a documented purchase system, with physical records but there are not documented reports of these activities.
Yields estimates and list of realized sales	There is a list of the registered organic farmers with their yields estimations. A list of realized sales is not yet developed.

### **5.1.6 Risk Assessment and Critical Control Points**

The researcher could not find documentation related with risk assessment. An IFOAM risk assessment checklist was used to come up with risks that can affect Wiñak ICS. The complete checklist is described in appendix 4. Findings of the main risks affecting Wiñak ICS are:

- In farm level there is a high risk that government programmes that subsidize non-allowed products in organic production could encourage farmers to use them.
- In internal control, important risks are: the limited financial capacity of the organization; limited qualified internal inspectors that lead to issues relate with conflict of interests.

## **5.2 Internal Regulations of Wiñak Producer Organization**

Results found that the Internal Regulations of Wiñak Producer Organization covers the following areas:

- Organic Production Standards
- Sanctions
- Formal Commitments

### **5.2.1 Organic Production Standards**

When the researcher asked to the general coordinator for an internal document where the organic production standards are described, he answered that they do not have that document. However the researcher found that some organic production standards are briefly stated in an internal document, the Commitment Contract for Organic Production in clause 1, despite this clause is referred to the responsibilities of the producers. The standards are:

1. Strictly adhere to produce cocoa under the guidelines of the organic techniques.
2. Do not store or use chemicals or other products in the crops of the productive unit.
3. Do not use propagation material coming from genetically modified organisms.
4. Manage soil conservation and organic practices for fertilization and pest and diseases control in the production of cocoa within the entire production unit.
5. Protect the environment by avoiding the burn of any material under any circumstances or polluting the water, soil or air.

As observed these regulations are general and it is necessary to incorporate other standards related with aspects like: off farm inputs, conversion period, harvest and post harvest procedures.

### 5.2.2 Sanctions

Sanctions are described in the Special Regulation for the Internal Control System in chapter 5, as follows:

- Farmers that do not meet internal organic production standards and the individual conversion plan, will be punished, these will be done with the support of technicians and other producers.
- Approval committee members that do not attend to regular or special sessions will be convened with a fine equivalent to a daily wage of the area (10 dollars).
- When a producer fails to comply with his/her conversion plan, he/she will receive a written notification to catch up with the work within 45 days. After that, he/she will be visited to assess compliance.
- If during the first year, a farmer does not comply with recommendations related with organic production, he/she will be separated of the organic programme.
- A producer that applies unauthorized chemicals on his/her farm will be punished immediately going once again through the transition period of three years. In addition this will be communicated immediately to the certification company.

As observed, the first sanction does not state how the producer will be punished. When interviewing the general coordinator, he clarifies the regulation: the producer will be punished by having to go once again through the transition period of three years and if he persists in noncompliance of the regulations he/she will be separated from the organic programme.

### 5.2.3 Formal Commitments

Formal commitments are related with the responsibilities of the farmers and the organization. The research found that these responsibilities are described in Commitment Contract for Organic Production. The responsibilities are stated in the following paragraphs:

Wiñak Producer Organization responsibilities:

1. Provide technical assistance to producers in the standards and organic production of cocoa.
2. Organize the collection and sale of organic production schedule in agreement with the producers.

As indicated before, in the description of producers responsibilities there were found some statements related with organic regulations. These statements were written in section 5.2.1. The remaining is listed below:

Producer's responsibilities:

1. Manage the production unit with a business approach.
2. Deliver his/her production to the producer organization and support its collection system.
3. Attend to the training events organized by Wińak Producer Organization.

The research wanted to establish the understanding of the internal regulations between the farmers using the information of the survey. So, one indicator was selected within Wińak Internal Regulation to analyse this understanding level: sanctions applied by the PO. The producers were asked to indicate which are the sanctions applied when the internal regulations were not fulfilled. Findings are detailed in table 16.

**Table 16: Findings about sanctions understanding within producers of Wińak PO**

Indicator	Frequency	Percentage	Respondents answered:
<b>Sanctions</b>	20	33.3%	Suspension of purchase
	4	6.7%	Separation of organic program
	36	60.0%	Don't know
	n=60	100%	

### **5.3 Implementation of EU Regulation for Organic Food and Farming (No. 834/2007) in Wińak Producer Organization**

To determine how the Organic EU Regulation have been implemented, the research selected five indicators based on the requirements of the EU Regulation, to determine the level of understanding, of the organic requirements, between the producers who are members of Wińak Producer Organization. The indicators used were: producers understanding of seed and planting stock, off farm inputs, soil management, plant protection and harvest/postharvest procedures. The results of the study are presented in table 17 below.

**Table 17: Findings about the implementation of EU regulation for Organic Food and Farming in Wińak PO**

Indicator	Frequency	Percentage	Respondents answered:
<b>Seed and Planting Stock</b>	57	95.0%	✓ They have to buy seedlings only from organic nurseries.
	1	1.7%	X They don't have to buy seedlings only from organic nurseries.
	2	3.3%	X Don't know.
Total:	n=60	100%	

Indicator	Frequen- cy	Percenta- ge	Respondents answered:
<b>Off farm inputs</b>	35	58.3%	✓ They use natural fertilizers. ✓ They don't use any product.
	25	41.7%	
Total:	n=60	100%	
<b>Soil Management</b>	7	11.7%	X It is allow to burn residues like leaves, branches that naturally enrich the soil. ✓ It is not allow to burn residues like leaves, branches that naturally enrich the soil.
	53	88.3%	
Total:	n=60	100%	
<b>Plant Protection</b>	55	91.7%	✓ They use a manual method (phytosanitary pruning) to control pests and diseases. X One person answered he fumigate. ✓ They don't use any method.
	1	1.7%	
	4	6.6%	
Total:	n=60	100%	
<b>Harvest/Post harvest procedures</b>	59	98.3%	✓ They receive a sales receipt when delivering production to the PO. X They don't receive a sales receipt when delivering production to the PO.
	1	1.7%	
	32	53.3%	✓ They are asked for yield estimation by the PO. X They are not asked for a yield estimation by the PO. X Don't know.
	25	41.7%	
3	5.0%		
Total:	n=60	100%	

The study also wanted to verify if there are differences in the farmers' understanding of internal and external regulations. For this, the research considered the correct answers to 6 survey questions indicated in the tables 16 and 17, to assess the understanding of the producers on the internal and external requirements. Then, using SPSS, these variables were related with the number of hectares that each respondent own, through an ANOVA test, to locate whether there were differences among the three groups; small (Group 1: from 0.25 to .75 ha), medium (Group 2: from 0.76 to 1.5 ha) and big framers (Group 3: > than 1.5 ha)

For hypothesis testing the following steps were performed:

1. Formulate  $H_0$  and  $H_1$ : The hypotheses formulated were:

- $H_0$ : There is not a difference in the understanding of organic internal and external requirements between big, medium and small farmers.

$H_1$ : There is a difference in the understanding of organic internal and external requirements between big, medium and small farmers.

2. Determine the level of significance: 0.05

3. Make an appropriate choice for a statistical test: The test that measures the differences between 3 or more groups is ANOVA.

ANOVA Test, for the understanding between big, medium and small farmers showed that the significance is 0.308. (Table 18)

**Table 18: Differences in Level of Understanding, ANOVA Test**

Tukey HSD: Level of understanding

FARMER SIZE	N	Subset for alpha = 0.05
		Mean
1 (Small)	20	5.40
2 (Medium)	20	5.50
3 (Big)	20	5.10
Sig.		.308

4. Decision rule:

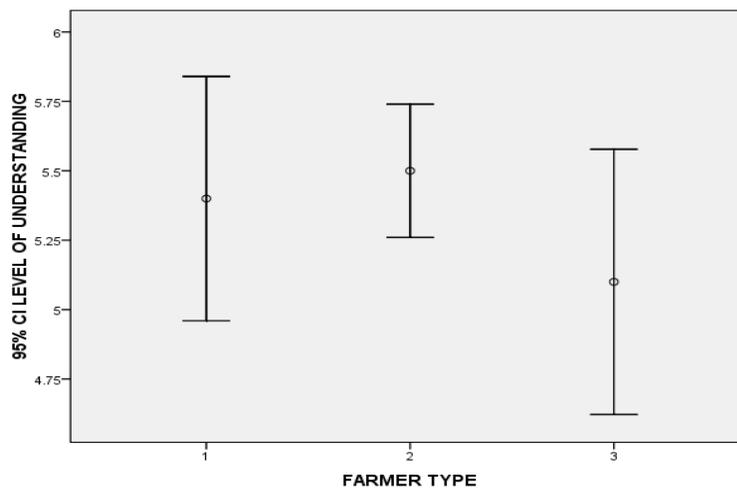
$p > 0.05 = \text{Accept } H_0$

$p < 0.05 = \text{Reject } H_0$

5. Conclusion:

An Anova statistic was calculated to test the significance of the difference between big, medium and small farmers in the understanding of internal and external requirements, but no statistically significant difference was note at the 5% level. (Anova 0.308,  $p > 0.05$ ) (Figure 9)

**Figure 9: Error bar graphic: Differences in Understanding Level of Organic Requirements**



## 5.4 Key elements of Wiňak Internal Control System

The research wants to establish the key elements of Wiňak ICS. Hence, findings of elements described in section 5.1 (ICS elements), were compared with an IFOAM non compliance matrix to identify which are the key elements. The complete check list is shown in Annex 1. Findings of this analysis are shown in table 19.

**Table 19: Key elements of Wiňak Internal Control System**

	<b>ICS-Elements</b>	<b>Non Compliance Level</b>	<b>Findings</b>
<b>1</b>	<b>Functioning of the ICS</b>		
<b>1.1</b>	<b>Implementation of Internal regulation</b>		
	How developed is the internal Regulation?	Mayor Non Compliance	Organic production standards are not described in detail by the Internal regulation. Sanctions need to be clearer.
<b>1.2</b>	<b>Staff Requirements-Training</b>		
	Is there one clear responsible person for the ICS?	Minor Non Compliance	The responsible for the ICS is the general coordinator of the PO, but it is essential that there is a formal quality manager.
	Are there enough Internal Inspectors to do 100% Inspections?	Mayor Non Compliance	There are 6 internal inspectors but they are not being continuously trained.
<b>1.3</b>	<b>Internal Inspections</b>		
	Have appropriate safety measures been taken to ensure that there are no potential conflicts of interests?	Mayor Non Compliance	There is not a clear procedure to avoid conflicts of interest.
<b>1.4</b>	<b>Documentation of the ICS</b>		
	Is the ICS described in an ICS-document?	Minor Non Compliance	An ICS manual is not developed yet.
<b>1.5</b>	<b>Product Flow</b>		
	Is there a procedure for identifying infiltration from excess deliveries?	Mayor Non Compliance	A procedure for identifying excess deliveries is not developed yet.
<b>1.6</b>	<b>Risk Management</b>		
	Is there an initial Risk assessment?	Mayor Non Compliance	An initial risk assessment is not developed yet.

The above findings allow the study to investigate strategies that improve the identified key elements of Wiňak Internal Control System. In order to determine to what extent these elements contribute to fulfil the internal and external regulations of Wiňak Producer Organization, the study carried out a Strengths and Weakness analysis of the ICS. Findings are listed in the following section.

### **5.4.1 Strengths and Weakness of Wiñak Internal Control System**

The study compared the information of the key elements, interviews, surveys and the IFOAM checklist to identify the strengths and weaknesses of Wiñak ICS, resulting in the following list described in sections 5.4.1 and 5.4.2.

#### **5.4.1.1 Strengths of Wiñak Internal Control System**

- Good understanding of farmers of the external requirements for organic production.
- Good record keeping with relevant information of the producers. Each farmer has a folder with: Farmers entrance form, producer form with code, surface, community, organic yield estimation, commitment contract for organic production, inspection report, farm maps.

#### **5.4.2.2 Weaknesses of Wiñak Internal Control System**

- Internal regulation does not provide a clear description of organic production standards.
- ICS Personnel is vulnerable because:
  - In the structure of ICS Personnel there is not a key position to guarantee the quality of organic products: a Quality Manager.
  - Insufficient training courses for the internal inspectors.
- High risk of failing to meet 100% of internal inspections because there are not qualified internal inspectors to perform the inspections.
- Yield estimates information is not being updated.
- Wiñak Producer Organization has not documented an ICS Manual yet. The organization has independent documents like the Special Regulation of the Internal Control System and other procedures that have not been gathered in a manual.
- Some deficiencies in ICS documentation like the elaboration of a procedure for identifying infiltration from excess deliveries.
- Risks that jeopardize the organic quality are not taken into account. A risk assessment has not been developed yet.

### **5.5 Organizational Structure of Wiñak Producer Organization**

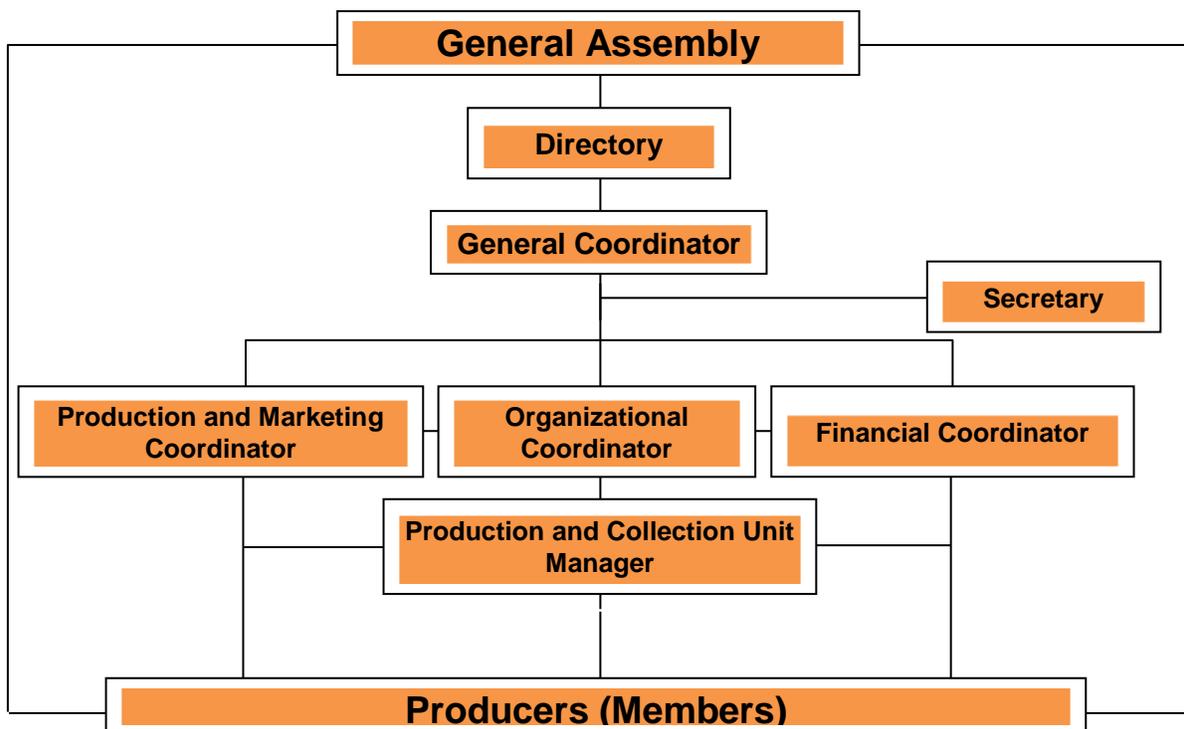
The researcher observed that Wiñak Producer Organization has the following structure. General Assembly is the maximum authority of the Producer Organization and is formed by all active members. The assembly is responsible for the financial and administrative management and decision making for the benefit and development of the organization. The Directory controls the management of the organization and its trading system through the approval of regulations.

The Directory consists of:

- A General Coordinator: Is the legal representative of the Organization and he coordinate the administrative, commercial and financial management.
- Secretary: He/she is responsible to review the documentation and write the minutes of the Directory and General Assembly.
- Production and Marketing Coordinator: He/she is in charge to improve the productivity of farmers, coordinating technical assistance and training of producers. In the statute of the organization it is stated that he/she is the responsible of the quality management. However in the interview to the General Coordinator he states that he is the one in charge of the ICS and quality management.
- Organizational Coordinator: He/she organizes the producers to improve the marketing of cocoa and promotes the integration of the members.
- Financial Coordinator: He/she is responsible to manage the accounting of the organization.
- Production and Collection Unit Manager: He/she is responsible to lead the activities of the Production and Collection Unit.

Organization chart of Wiñak Producer Organization is shown in figure 10.

**Figure 10: Structure of Wiñak Producer Organization**



The Production and Collection Unit consists of a manager, an accountant, a post harvest technician and a field technician. The unit is responsible for implementing an adequate system

of production, collection and marketing of cocoa. All the functions of this unit are described in the Statute of Wiñak Producer Organization but currently this unit is not yet implemented. The marketing of cocoa, since the date of the legal creation of the organization, has been carried out by the general coordinator and the production and marketing coordinator.

## **5.6 Services delivered by Wiñak Producer Organization**

The researcher noted in interviews that Wiñak Producer Organization main services are:

- Technical assistance.
- Purchase and marketing of the cocoa that comes from the producers, members of the PO.

The specific services provided by Wiñak Producer Organization are stated in the internal document: Commitment Contract for Organic Production, which are described in the following paragraph:

1. Provide technical assistance to producers in the standards for organic production of cocoa.
2. Cover the costs for technical assistance and organic certification in the first year.
3. Training in the documentation handling of the farm.
4. Organize the purchase and collection of the organic production in agreement with the producer.

As indicated before, the Producer Organization received financial support of the Ecuadorian Cooperation Fund for Development and the Spanish Agency for International Cooperation. Technical assistance was provided by an NGO called Center of Self Development. This organization carried out a productive project called: Optimization of Cocoa Supply Chain in “Tena” and “Archidona”, from 2000 until December 2010. Funds and technical support of this project allow the producer organization to organize itself in order to form the organization and to deliver the indicated services to its members.

The research wanted to verify the perception that members of Wiñak PO have about the services provided by the organization, investigating if there are differences in the level of satisfaction with training and price paid for cocoa, in order to formulate accurate recommendations. Based on the answers to questions in the survey, the study assessed the satisfaction level. Then, using SPSS, these variables were related with the number of hectares of each respondent through ANOVA test, to locate whether there were differences among the three groups: small (Group 1: from 0.25 to .75 ha), medium (Group 2: from 0.76 to 1.5 ha) and big framers (Group 3: > than 1.5 ha)

For hypothesis testing the following steps were performed:

1. Formulate  $H_0$  and  $H_1$ : The hypotheses formulated were:

- $H_0$ : There is not a difference in satisfaction level with training and others services delivered by Wińak Producer Organization between big, medium and small farmers.

$H_1$ : There is a difference in satisfaction level with training and others services delivered by Wińak Producer Organization between big, medium and small farmers

2. Determine the level of significance: 0.05

3. Make an appropriate choice for a statistical test: The test that measures the differences between 3 or more groups is ANOVA.

ANOVA Test, for the level of satisfaction between big, medium and small farmers showed that the significance is 0.78. (Table 20)

**Table 20: Differences in Level of Satisfaction, ANOVA Test**

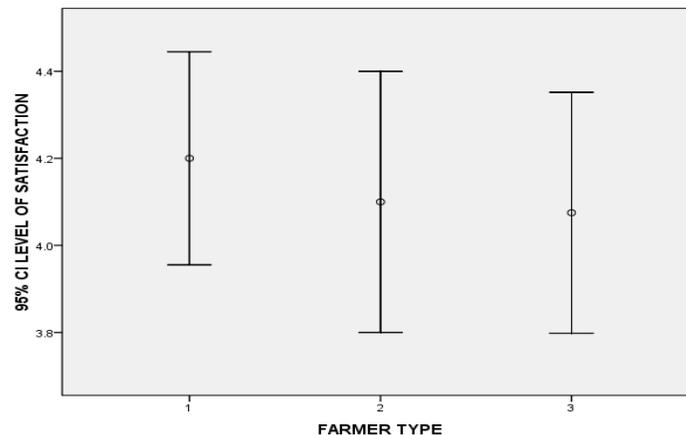
Tukey HSD: Level of satisfaction

FARMER SIZE	N	Subset for alpha = 0.05
		Mean
1 (Small)	20	4.200
2 (Medium)	20	4.100
3 (Big)	20	4.075
Sig.		.780

An Anova statistic was calculated to test the significance of the difference between big, medium and small farmers in the satisfaction level with training and others services delivered by Wińak Producer Organization, but no statistically significant difference was note at the 5% level. (Anova 0.780,  $p > 0.05$ ) (Figure 11)

Results show that over a qualification of 5, the satisfaction with services provided by the PO is between 4.2 and 4.07, with a mean of 4.1.

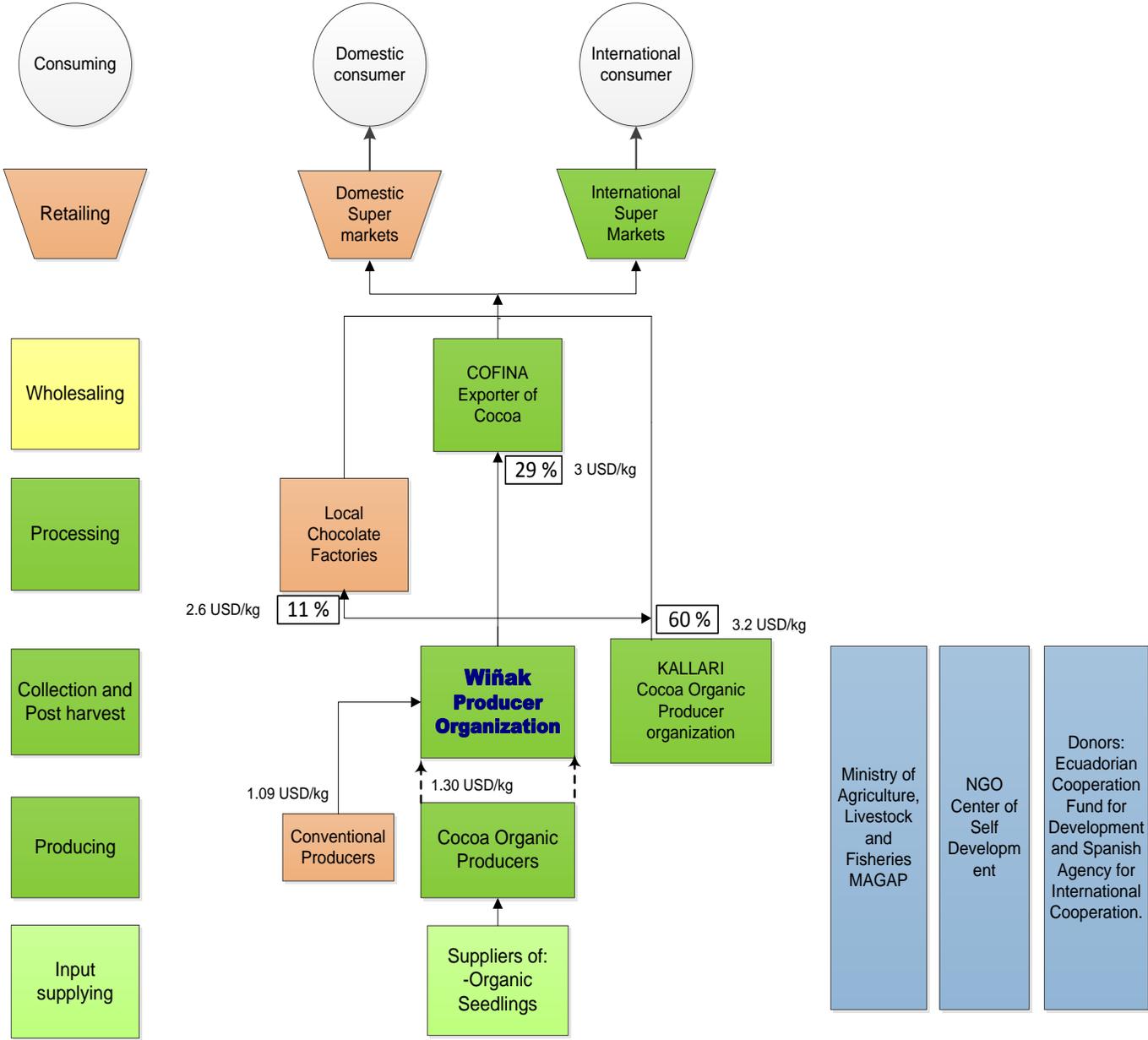
**Figure 11: Error bar graphic: Differences in Satisfaction Level with Services of Wińak PO**



### 5.7 Position of Wiñak Producer Organization in Cocoa Value Chain

Wiñak Producer Organization value chain is described in the following chain map. (Figure 12)

Figure 12: Cocoa Value Chain of Wiñak Producer Organization (Year 2011)



The researcher observed that Wiñak Producer Organization is formed by 211 members that produce organic cocoa; 191 members have organic cocoa and 20 cocoa in transition. Farmers within Wiñak PO buy cocoa seedlings that came from organic nurseries like the ones of the National Institute of Agricultural Research known in Ecuador as "INIAP". The Producer Organization purchases the organic cocoa with the mucilage in the farms of the producers, transports it to the collection center and makes the post-harvest process (Fermentation and Drying) to finally market dried cocoa. The producer organization is a marketing channel for the organic cocoa that is produced by its members, but also for conventional cocoa that is produced by other independent producers. Price paid to members is 0.60 USD per pound (1.30 USD/kg) and for conventional producers 0.50 USD per pound (1.09 USD/kg).

Production of all members (according to information of 2010) adds up to 51 tonnes per year. As explained before in year 2011, the organization purchases 20% of this production (10.6 tonnes: 9.36 tonnes of organic cocoa and 1.2 tonnes of conventional cocoa) due to a shortage of funds; this capital was not transferred on time by donors. The organization is still marketing cocoa within the country. A long-term objective of the organization is to market this production directly to customers in Europe. At the moment, main clients that buy cocoa to Wiñak PO are:

- Kallari: Is another producer organization located in the same region that commercialized organic cocoa. It is a bigger organization that collaborates with Wiñak PO mainly giving technical support. This organization elaborates chocolates under the label of "Kallari" and markets them in specialty stores in Ecuador and another part is exported to Europe. Kallari only buys organic cocoa.
- Cofina: Is an Ecuadorian company that exports cocoa beans to processors and brokers in Europe, United States and Asia. Cofina has a monthly capacity of 2000 metric tons for the preparation and selection of cocoa. (Cofina, 2010). Cofina buys organic cocoa.
- Local chocolate industries: "Bios" chocolates, "Amazonas" Chocolates, Confiteca. These industries buy conventional cocoa.

Supporters of the production organization were donors like the Ecuadorian Cooperation Fund for Development and the Spanish Agency for International Cooperation. Technical assistance was provided by an NGO, called Center of Self-Development that performed a productive project called Optimization of Cocoa Supply Chain in "Tena" and "Archidona". Little communication with the agency of the Ministry of Agriculture, Livestock and Fisheries has been established by the PO. Even though this support is available, during the interview to the general coordinator, he states that he did not consider this option yet to establish a collaboration channel between them.

## **CHAPTER 6 DISCUSSION**

### **6.1 Elements of Wiñak Internal Control System**

Elements of Wiñak Producer Organization were described in the results, based on a classification of the common elements found in literature review related with Internal Control Systems, in IFOAM and NATURLAND.

#### **6.1.1 Internal Regulation**

The first element of ICS is Internal Regulation. Wiñak ICS covers three of the four working areas recommended by Naturland. The covered areas are: organic production standards, sanctions and formal commitments. Rules of participation are not indicated, but the researcher considers that some rules are mentioned within formal commitments. However, the regulations of the working areas, within internal regulation, are described briefly; especially the Organic Production Standards that are not stated in a formal document, just a general description is written in the Commitment Contract for Organic Production in clause 1, despite this clause is referred to the responsibilities of the producers. A more detailed insight about this element will be discussed in section 6.2.

#### **6.1.2 Qualified Personnel**

Related with the personnel, the study found that the responsible of Wiñak ICS is the general coordinator of the organization and there is not a formal position for a quality manager that is a key position to guarantee the quality of the organic products. However during the interviews the researcher found that the general coordinator is a person that fulfils some characteristics that, according to Naturland (2002), a quality manager must have like: is fluent in the local language, can read and write and received training in organic agriculture.

In the case of internal inspectors, the study revealed that there were 6 inspectors but some non-compliance were found like: there is not an actual and dated list of the internal inspectors and they have not received sufficient training in internal control procedures as mentioned by an internal inspector who was interview. Also there are not records about these trainings. IFOAM (2007), states that tasks for an ICS are quite complex and demanding, therefore ICS must have qualified personnel. That is why the researcher considers that personnel is a critical factor for the functioning of the system. Another deficiency related with personnel is that there is a high risk to occur conflict of interest, for example during the interview the internal inspector mentions that he is also one of the persons that purchases cocoa. There is not a clear procedure or regulation to avoid these conflicts that jeopardize the objectivity of the ICS inspections and decisions. All measures must be taken to avoid these conflicts to occur.

### **6.1.3 Training**

Training of both farmers as well of ICS staff is very important. In the case of producers the main objective of training is to inform them on the relevant aspects of organic production and make them aware about the contents and implications of the internal regulation for organic agriculture. (Naturland, 2002). During the interview, the general coordinator states that the producer organization received technical advice of the NGO called Center of Self Development. During the productive project was operating, technical advisors of the NGO organize and gave courses to ICS staff. According to the records, farmers were trained in organic production, certification requirements, pruning and harvesting of cocoa. The researcher observed that trainings about Internal Regulations (sanctions, formal commitments and rules of participation) are not yet developed. This could be why 93% of farmers do not know the internal regulations of the organization.

In the case of internal inspectors one of them, during an interview, said that they were trained by the NGO on the aspects to take in consideration during the inspections but there are no records of these trainings. Regular training to internal inspectors is inevitable, that is why the researcher considered that there are not enough qualified internal inspectors to comply with the 100% of inspections, situation that endangers the fulfilment of the certification requirements. Also it is important to take in consideration that internal inspectors must not have conflicts of interest that can affect their work. According to Naturland (2002), basic rules to be aware of are: Internal inspectors could not inspect his/her own plots, those of his/her family or friends; realising training of farmers in the same area and should not be responsible for the purchase of products for the organization.

### **6.1.4 Internal Farm Control**

Another element of ICS is the internal farm control that includes internal inspections and documentation. As the producer organization got the organic certification, they fulfil minimum documentation requirements, like: List of inspected farmers, list of sanctioned farmers, purchased quantities of this year, inspection reports forms of 100% of farmers registered in the organic program. But all these documents are not summarized in an annual inspection report and the information is not being updated. The researcher observed that inspectors at the moment are not doing field work, which could be a reason why the information is not being updated. Good performing of Internal inspections are in direct relation with training, that is why the researcher considers that internal inspections, a component of internal farm control, needs to be improved in order to maintain the certification.

### **6.1.5 Monitoring Product Flow**

Related with the product flow, the researcher could observe that this process is well organized. Purchasing guidelines are described in a procedure were it is described the product flow of organic cocoa. Another procedure describes the process for inventory, where it is indicated that every transaction must be duly registered in the receipts and documents for the effect created that are: Farmer payment receipt, batch control sheet, batch identification card, kardex sheet

and sales invoice. The physical documents are filed in folders. However the visualization of the product flow could have been limited because when the study was carried out, the purchase period of cocoa had already finished. A deficiency found is that there are no reports of the activities carried out in each stage, there are records to develop the reports, but this information is not tabulated. To finalize the discussion of monitoring the product flow, an important tool for quality assurance is to have yield estimates (IFOAM, 2007). In the case of Wiñak PO, they have this yields estimates but is important to update this information for next year, before harvest. The closer to harvest estimates are made, the more accurate they tend to be. (IFOAM, 2007)

### **6.1.6 Risk Assessment**

The last element that was analyzed within the internal control system is a risk assessment. Wiñak ICS has not developed it yet. According to IFOAM (2007), for operators that have not yet done one, developing this analysis is highly recommended, as an internal risk assessment provides deeper insights with regard to the critical points that the ICS is aware of and what they are not aware of as potentially critical points. An IFOAM risk assessment checklist was used to come up with a list of risks for that could occur in Wiñak ICS (Appendix 4). Results showed that risks that may jeopardize the organic programme in farm level are mainly government programs that subsidize to farmers, non-allowed fertilizers in organic agriculture like Urea. A program to subsidize Urea was established in late 2010, because the government wanted to increase the production of the small farmers, so they can be more competitive. Normal price of one quintal (46 kg) of Urea is 35 USD, and the subsidized price was 10 USD, (Buenas tareas, 2011). Some farmers were tempted to buy this fertilizer because of the low price, and they were sanctioned going again through the transition period. Even though this program finished if there were future programs like this, farmers will be tempted to buy this kind of subsidized inputs. Within the internal control, an important risk founded is related with the financial resources of the organization. Wiñak PO has very limited funds for its operation. This issue of the sustainability of the organization was not analysed in depths, as the scope of the research is to access the elements of the ICS, however the PO should explore some alternatives to arrange its own financing. Last risks are related with the availability of internal inspectors and conflict of interests. As discussed in sections 6.1.2 and 6.1.3 these risks are critical aspects to be tackled by Wiñak ICS.

## **6.2 Internal Regulations of Wiñak Producer Organization**

As commented before, Wiñak Internal Regulations covers the following areas: Organic production standards, sanctions and formal commitments. The first component, organic production standards are the internal production guidelines, which delineates all farm production requirements. (IFOAM, 2007). So special attention must be given to this area because it is everything that an organic farmer will be expected to comply with. It is necessary to state these standards in a document that can be easily understood by every member and that includes additional specifications related with off farm inputs, conversion period, harvest and post harvest procedures. The researcher observed that another area that was not covered by the internal regulation of Wiñak ICS is rules of participation, but some rules are stated in the document formal commitments, as it talks about compliance with organic production standards. According

to Naturland (2002), rules of participation should include procedures for the admittance of new organic farmers and compliance with internal and external inspection mechanisms.

Moving to another point, when analyzing the results of the survey, farmers were asked which were the sanctions applied by the PO; 60% of them could not mention any sanction, 33.3% mentioned a sanction that is not state in the regulations (suspension of cocoa purchase) and only 6.7 % gave the correct answer; separation from the organic programme. One reason that could explain this result is that in the description of sanctions within the Special Regulation for the ICS, it is not clear the specific sanction to be applied when a farmer does not comply with the organic production standards. The researcher considers important to be clear and specific when writing these statements, for a better understanding of the regulations by all the members of the producer organization.

### 6.3. Implementation of EU Regulation for Organic Food and Farming (No. 834/2007) in Wiñak Producer Organization

The research considered five indicators to assess how the standards of the EU Regulation for Organic Food and Farming, is implemented within the producer organization. The selected indicators were: Off farm inputs, seed and planting material, soil management, plant protection and harvest/postharvest procedures. When the farmers were asked questions related with each indicator, the following percentages answered correctly: (Figure 21)

**Table 21: Findings about indicators of EU Regulation**

Indicator	Questions	Correct Answers	
Seed and Planting Stock	Do you have to buy seedlings only from organic nurseries?	95.0%	
Off farm inputs	What you use to fertilize your cocoa trees?	100%	
Soil Management	It is allowed to burn residues like leaves, branches that naturally enrich the soil?	88.3%	
Plant Protection	Which practices you use to control pests and diseases of your crop?	98.3%	
Harvest/Post harvest procedures	Do you receive a sales receipt when delivering the production to the PO?	98.3%	75.8%
	Does the organization request from you an estimate of the production in advance?	53.3%	
Average:		91.4%	

Three indicators got a high percentage; Seed and planting stock (95%), off farm inputs (100%) and plant protection (98.3%), which indicates that farmers have a good understanding of organic standards like: use of seeds and reproduction material only of organic origin and not allowed use of phytosanitary products and fertilizers. Soil management got a lower percentage (88.3%), indicating that 11.7% of the surveyed farmers did not have a clear idea that on organic production, soil management shall maintain organic soil matter, and structural/biological stability.

These results leads to take into account subjects related with soil management practices when giving training (like preparation of organic fertilizers: humus, compost). Finally, the indicator that got the lowest percentage is harvest/post harvest management. Specifically the topic, in which almost half of the farmers are not aware, is that an important factor within an ICS is yield estimate. When farmers were asked if the organization request from them a production estimate in advance, 46.7% answered "No". The researcher considered that this result could show that internal inspectors did not visit all the farmers but also that the producers could have forgotten if they were asked about yield estimates. Farmers have to get used to know how much they produce every year. However this result makes evident that there is a deficiency in yield estimate system.

The research wanted to investigate if there were differences in the understanding of internal and external requirements, between three groups of farmers: big, medium and small in order to give accurate recommendations. Anova statistic test showed that this difference was no statistically significant. However if means of each group are compared, medium farmers have the higher understanding with a qualification over 6 points, of 5.5; small farmers are the second group with a better understanding with a mean of 5.4 and big farmers have the last qualification with 5.1.

## **6.4 Key elements of Wiñak Internal Control System**

The research considered a non-compliance matrix of ICS elements developed by IFOAM to determine key elements of Wiñak ICS. This matrix consists in a check list with main requirements for elements of an internal control system. As each element of Wiñak ICS was analysed in the previous section, when comparing with the matrix, these results helped to determine whether the non compliance is a minor or mayor infringement that will lead to take specific corrective actions. Major non compliances according to IFOAM (2003) are: Mixing organic with not organic, fraud of any kind, non-achievement of 100% of internal inspections and any infringement that compromised directly the organic integrity of the product. Hence a mayor non conformity was considered as a key element that Wiñak ICS needs to improve. Using this statement, 5 mayor non conformities were found: the first one is related with the internal regulations; organic production standards require to be defined and state in a clear document so it will be easy to be followed by every member of the organization. Sanctions need to be more specific and clear. Others key elements of the internal control system are qualified personnel, training and internal inspections that are related by a common factor: internal inspectors, that is the second non conformity founded. These inspectors need a continual training, so they will be well qualified to perform all the tasks assigned to this position that directly influence the organic integrity of the product. Related with internal inspections the third non conformity identify is related with conflict of interest. Within the producer organization, there is not clear guidelines to avoid these conflicts, so there is a high probability that a person is not in the position to be objective when, for example, is inspecting his brother or friend field, jeopardizing the organic integrity of the product. Another major non conformity found related with product flow is that Wiñak ICS does not have a procedure for identifying infiltration from excess deliveries, this factor is related with yield estimations. The last no conformity founded, that will lead to better awareness of the critical points that could jeopardize the well-functioning of the ICS is the risk assessment that has not been developed yet by the producer organization.

## **6.5 Organizational Structure of Wiñak Producer Organization**

The ICS is a formal body within the certified operation. The certification body delegates part of its inspection responsibilities to this internal body, thus it is very important that the ICS have a clear structure and that somebody be in charge of each task. (IFOAM, 2007) Broader structure of the organization is conform by the general assembly, general coordinator, a secretary and 3 more coordinators: production and marketing coordinator, organizational coordinator and financial coordinator. In the statute of the organization it is stated that the Production and Marketing coordinator is the responsible of the quality management. However in the interview to the General Coordinator he states that he is the one in charge of the ICS and quality. So it is revealed that there is an inconsistency in what is stated in internal documents and what happens in practice.

The organization structure includes a Production and Collection Unit with a manager, an accountant, a post harvest technician and a field technician. This unit is responsible for implementing an adequate system of production, collection and marketing of cocoa, but currently this unit is not yet implemented and personnel is not yet hired. The marketing of cocoa has been carried out by the general coordinator and the production and marketing coordinator. This situation revealed that the organization has a shortage of personnel, mainly because the producer organization does not have financial capacity to hire this staff. Until 2010 the organization was supported by the productive project with the required personnel, funds and training.

## **6.6 Services delivered by Wiñak Producer Organization**

As mentioned before, Wiñak PO main services are to provide training to the farmers (mainly in organic production practices) and to purchase the cocoa produce by it members to market it. The organization was formed to give continuity to an initial project which established cocoa plantations in the region and a second project that seeks to optimize cocoa supply chain in areas of “Tena” and “Archidona”. This latest project enabled the organization to enter in the certification process, train the producers and staff in the organic standards as well as financing cost of certification during the first year. The project also gave the organization an adequate infrastructure for collection, post harvest process and selling of cocoa. This project operates until December 2010, leaving the organization a capital of 15,000 USD that the organization is using to continuing operating. Based on this situation the researcher could say that main services delivered by the producer organization until 2010, were facilitated by the project. Now the organization faces the challenge of continuing delivering these services. Despite this situation, results of the interviews show that satisfaction level of farmers with the services delivered by the PO, over a total qualification of 5 has a mean of 4.1. Statistically no significant difference was noted between the three sizes of farmers (big, medium and small), however small farmers has the major mean; 4,2, followed by the medium with 4.1 and finally the big ones with 4.07. This result shows that farmers have a good level of satisfaction with trainings and the commercialization of cocoa performed by Wiñak PO. When members are satisfied, they are willing to meet on a regular basis and plan strategically about the future of the cooperative and sustain a shared vision that contributes to the sustainability of the organization. (Carr et al, 2008 cited in Besorak, 2009).

## 6.7 Position of Wiñak Producer Organization in Cocoa Value Chain

Wiñak producer organization buys and sells organic cocoa from its members, but also buys conventional cocoa of independent producers. Clients of the organization are: Kallari, Cofina and local chocolate factories. Results show that the biggest customer is Kallari (60%) that buys organic cocoa, followed by Cofina (29%) that also buys organic cocoa and at last local chocolate factories (11%), that buys conventional cocoa. This situation shows that Wiñak PO has two types of clients; for organic cocoa and conventional cocoa. Main customer of organic cocoa is Kallari that also pays the better price (3.2 USD/kg). Kallari is another cocoa producer organization, located in the same region. It is a bigger organization and has a better bargaining power, allowing them to buy more cocoa as they also process it into chocolate bars that are sold within Ecuador and also in international markets. Producer organizations should try to increase their bargaining power by building alliances with other POs and national governments. (Mercoiret et al., 2008 cited in Besorak, 2009). Kallari has also been supporting with technical advice to Wiñak, this could be used as a way to enhance expertise between this 2 organizations. The other customer of the organic cocoa is Cofina that is one of the biggest exporters of cocoa in Ecuador. Cofina pays a lower price for the cocoa (3 USD/kg) and they receive the cocoa only in their installations that are located in another region of the country, the Coast Region. From this analysis is evident that clients for organic cocoa of Wiñak PO are few, only two. Clients for conventional cocoa are local chocolate factories. However these purchases are just spot, when the industries required more volumes. The researcher was not able to get accurate information about prices paid by these factories, but the average price is 2.6 USD/kg. As there is not a safe and permanent market for conventional cocoa, this makes the sale of this type of cocoa not convenient for the organization. The results showed that after the end of the productive project little communication with other NGO or government agencies was established by Wiñak PO, like a regional office of the Ministry of Agriculture, Livestock and Fisheries that is actively supporting to the farmers of the area, because in a near city, "Tena" it is located the regional coordination office of this Ministry.

## CHAPTER 7 CONCLUSIONS

The study established that Key elements affecting the Internal Control System of Wiñak producer organization are:

✓ Internal regulation need to be improved. Literature review indicates that basic components of this regulation are: organic production standards, rules of participation, sanctions and formal commitments. The results show that components that need to be improved are: Organic production standards, which require including a description of off farm inputs, conversion period and harvest/postharvest procedures; sanctions require indicating clearly the punishments for non-compliance of the regulations and rules of participation in the organic programme need to be stated including procedures for the admittance of new organic farmers and compliance with internal and external inspection mechanisms.

✓ Qualified personnel, training and internal inspections are elements that require to be better managed around a common component; internal inspectors. The study concludes that internal inspectors may not be well qualified to perform internal inspections, because they are not receiving ongoing training and there are not records of training. This situation affects the availability of qualified personnel, making it more likely that conflicts of interest may occur and more serious that the PO cannot perform 100% of internal inspections.

✓ Yield estimates is a component that needs to be enhanced for monitoring the product flow. The study observed that information of yield estimates is not being updated; it is necessary to develop a system to estimate the yield of each farmer before harvest.

✓ Risk assessment is another element that needs to be developed, as this analysis provides deeper insights with regard to the critical points that the ICS must be aware off.

Related with the structure of Wiñak PO and its position in the value chain, the research concludes that:

✓ ICS staff needs a quality manager for being specifically responsible of the internal control system. Related with organizational structure of Wiñak PO, the research found that the organization needs to clearly state the responsibilities of each position in the Statute of the organization, to avoid inconsistencies between these documents and what happens in practice.

✓ Services provided by Wiñak producer organization to its members are: Training of farmers and purchase/marketing of cocoa production. Without the financial and technical support of the productive project that supported them until December 2010, now, the organization faces the challenge of continuing delivering these services. However a good level of satisfaction was found within members (Over a total qualification of 5 it has a mean of 4.1), which is a strength that can be used to search strategies to enhance their sustainability.

✓ Related with the position of Wiñak PO in cocoa value chain the study concludes that coordination of the organization is deficient as no long term relationships with other stakeholders of the value chain have been established. Markets for the organic cocoa of Wiñak PO are limited and even though they got the organic certification and they have the long term objective to sell their production directly to the European market, they do not have the bargaining power to get new sales channels for its cocoa. Support from government agencies is not being taken in consideration by Wiñak producer organization.

✓ After assessing the understanding of internal and external requirements of Wiňak ICS regulation, the study concludes that producers have a good understanding of the external regulations (EU regulations for organic food and farming). Results showed that 91 % of farmers gave the correct answer to questions related with 5 indicators of EU regulation: Seed and planting material (95%), off farm inputs (100%), soil management (88%), plant protection (98%) and harvest/post harvest procedures (76%). In the case of internal regulations farmers have an insufficient understanding; 60% of farmers did not know which were the sanctions applied by the PO, 33% mentioned a wrong answer and 7% responded well. More training about the internal requirements like sanctions, rules of participation are required.

✓ The study concludes that no statistically significant difference was note at the 5% level, in the understanding of internal and external requirements of Wiňak ICS regulation and in the satisfaction level between big, medium and small farmers, members of the PO. Another classification of producers within the organization, with options like: female and male, producers according to distances of collection, could be used to conduct more research to assess Wiňak PO, regarding the functioning of the internal control system and services provided by the organization.

## CHAPTER 8 RECOMMENDATIONS

### 8.1 Design a training program

Training of both farmers and ICS staff is very important. According to results farmers and internal inspectors required to be trained. Training can be divided in two parts: One program for farmers and another one for internal inspectors.

Based on the results training for farmers should focus in organic production standards that got the less qualification: soil management and harvest/post harvest procedures. Topics like elaboration of compost, humus, separation of qualities during harvest will be interesting for farmers. In the case of Wiňak PO it is more recommended to visit the communities and make group trainings. But the main issue in farmer's knowledge is internal regulations like sanctions. These regulations need to be clarified and communicate to farmers; a good opportunity for doing this could be during the meetings of the general assembly.

In the case of internal inspections, it is recommended to organize at least one course per year. A suggested structure for the training course, could be: (IFOAM, 2007)

1. Inspection procedures
2. Inspection schedule and risk assessment
3. Inspection of the ICS office
4. Inspection of product flow
5. Reporting and evaluation

Barriers for Wiňak PO to organize the trainings are the limited staff and resources for advice. An alternative to handle this issue is that the organization seeks collaboration with government and benefit of the training programs provided by the agencies available in the region, like the Ministry of Agriculture, Livestock and Fisheries, as the regional coordination office of this Ministry (MAGAP, 2010) is located in "Tena", that is a city near the collection unit of Wiňak PO. For internal inspectors' trainings, the organization could seek to establish cooperation agreements with Kallari, which has been giving them technical support.

### 8.2 Performing a detailed risk assessment

It is recommended that all organic operators do an internal risk assessment at the beginning of the certification. An internal risk assessment provides deeper insights with regard of critical points that the ICS is aware or is not aware yet. This assessment has to identify internal and external risks at farm level, as well during buying, transport, fermentation, drying and storage. An IFOAM risk assessment checklist was use to come up with a list of risks for the organic programme within Wiňak PO. This list of risks can be used as the starting point to establish critical control points and later developing preventing and correction actions to main risks that jeopardize the integrity of their cocoa beans. The complete check list is indicated in appendix 4, but recommendations for the identified main risks are stated in table 22.

**Table 22: Important risks within Wiñak PO**

Important Risk	What can be done about it?
<p>Are there any programmes to promote agrochemicals?</p> <p>Yes, government implemented a program that subsidize UREA to producers</p>	<p>✓ Intensify training of the farmers, regarding organic production practices and inform them about danger of agrochemicals for their health and the environment, so they can recognize whether the subsidy actually helps them.</p> <p>✓ Farmers receive a clear list of non-allowed products, so they will be well informed at the moment of buying subsidized inputs.</p>
<p>Do the organic manager and his staff have the required means (finance, infrastructure, means of transport, etc.) to realise the internal control?</p> <p>No, Wiñak PO has very limited financial resources to realise the internal control.</p>	<p>✓ Strategic alliances to save costs, such as access to training services provided by the government and NGOs; collaborating with other producers organizations to increase their bargaining power to access better markets.</p> <p>✓ Start working in a strategic plan, with a shared vision and mission to contribute to the sustainability of the organization.</p>
<p>Has it been assured that there are sufficient internal inspectors to realise the inspection work?</p> <p>No, internal inspectors are not being trained continuously so there is the risk to have a shortage of qualified staff.</p>	<p>✓ Establish an on-going program of internal training to inspectors seeking the support of other producer organizations or NGOs.</p>
<p>Are responsibilities defined in such a manner that conflicts of interest can be excluded?</p> <p>Responsibilities are defined in procedures but in some cases what is written in the procedures is not what happens in practice that makes more likely to occur conflicts of interest, especially because the organization has a shortage of personnel.</p>	<p>✓ Inform all the staff about guidelines to avoid conflicts of interest.</p> <p>✓ Organize internal inspectors in such a way that they do not realise the inspection in their own community.</p>

### 8.3 Gathering documents and procedures in an ICS Manual

It is highly recommended that organizations organize all their different procedures and forms in an actual manual because it facilitates access to internal staff, also external inspectors and it is much easier to manage (IFOAM, 2007). In the case of Wiñak PO, review of the documentation showed that they have the majority of procedures and forms. So it is recommended to compile these documents in a manual, in the following order, based on IFOAM Guidance Manual for Producer Groups (2004):

1. Brief description of Structure and Activities
2. Risk assessment
3. Internal Organic Standard
4. Farm Control Procedures
5. Organization and ICS Personnel
6. Training

As stated before, internal organic standard is an element that needs to be enhanced and the new document can be include within the manual. It is recommended that this document states the standards in a clear way that can be easily understood by every member. It could include additional specifications related with off farm inputs, conversion period, harvest and post harvest procedures. Rules of participation also are recommended to be incorporated, including procedures for the admittance of new organic farmers and compliance with internal and external inspection mechanisms.

To include a procedure for yield estimate is also recommended, within Farm Control Procedures. Aspects to consider in the procedure may be: (IFOAM, 2007)

- ✓ Internal inspectors can record yield estimates in an independent internal document (draft buying list) immediately before harvest.
- ✓ This information may be processed by the ICS Manager to produce the approved buying lists that will be used at the moment of the purchase of cocoa, to countercheck delivered quantities and yield estimates.

#### **8.4 Prevention of conflict of interests**

Related with conflict of interest, as the organization is experiencing a shortage of personnel, the researcher recommends analysing all possible conflict of interests and declared them in a written statement, to find alternative solutions to cases that may arise these conflicts. It is necessary to inform the staff about basics rules that will ensure that each task, especially internal inspections will be done in a neutral, objective way, like:

- ✓ Internal inspector is not allowed to inspect his/her own fields or the fields of his/her immediate neighbours, friends or family.
- ✓ Related with marketing activities, internal inspectors may not be in charge of organizing purchase of cocoa.

It is recommended that internal inspectors, ICS coordinator, members of the approval committee and the responsible of the purchase sign a conflict of interest declaration. (IFOAM, 2004)

#### **8.5 Build an approach for continual improvement**

To enhance Wiñak ICS a recommendation that will integrate the issues founded in the key elements of the internal system is that the organization applies the most use principle for continual improvement, the called Plan Do Check Act Circle. (Schoenmakers, 2009). This tool will also help to strengthen the organization. Aspects to be enhanced were mainly identified in the plan phase. The following recommendations are given:

- ✓ Provide best possible services to its members; the study founded that farmers have a good level of satisfaction with trainings and marketing of cocoa. This is a strength that can be used to plan strategically about the future of the organization, especially concerned with the sustainability of the organization. When farmers are satisfied they are willing to meet regularly. Currently, the organization is beginning to work by their own, so it is recommended to increase

the frequency of the general assembly meetings to discuss about some possibilities to arrange their own financing, like to start paying a membership fee.

These meetings could be used also to establish a shared vision, mission and objectives according to the current situation of the PO and to update the knowledge related with internal regulations, like organic practices and sanctions.

✓ Try to understand the necessities of their external costumers and improve the relationships with other stakeholders of the value chain. To enhance the bargaining capacity of the organization Wiñak PO can build strategic alliances with others organizations like Kallari and the government.

✓ It is recommended to improve the structure of the organic staff, selecting a team leader within ICS structure, and state his/her responsibilities clearly in the Special Regulation for the Internal Control System and in the Statute of the organization. An example of an organizational chart that incorporates ICS structure and general structure of the organization, which shows the different decision levels concerning the quality control of the products, is described by annex 5.

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## APPENDIX 1

### Non-Compliance Matrix of ICS elements developed by IFOAM

	ICS-Elements	Value over 100	Value	Minimum Value
<b>1</b>	<b>Functioning of the ICS</b>			
<b>1.1</b>	Implementation of Internal regulation	5	2	3
<b>a.</b>	How developed is the internal Regulation?	1	0	
<b>b.</b>	Can the Standards of the Certification Body be applied through it?	2	1	
<b>c.</b>	How well understood is the internal regulation by the staff of the ICS who are supposed to implement it?	2	1	
<b>1.2</b>	<b>Staff Requirements</b>	10	5	6
<b>a.</b>	Is there a function for Internal Approval?	2	2	
<b>b.</b>	How qualified are the internal Inspectors? (Are they Iterate?)	2	1	
<b>c.</b>	Are these enough Internal Inspectors to do 100% Inspections?	2	0	
<b>d.</b>	Is there one clear responsible person for the ICS?	2	1	
<b>e.</b>	Do the Internal Inspectors get sufficient support with training and transport to maintain the internal control system?	2	1	
<b>1.3</b>	<b>Internal Inspections</b>	15	12	15
<b>a.</b>	Have at least 100% of the Internal Inspections taken place, with the purpose of checking the compliance with the Internal regulation	5	5	
<b>b.</b>	Have appropriate safety measures been taken to ensure that there are no potential conflicts of interests?	5	3	
<b>c.</b>	Have the ICS made separation between internal inspections and technical advice?	5	4	
<b>1.4</b>	<b>Documentation of the ICS</b>	20	16	14
<b>a.</b>	Is there an up to date list of farmers registered to the ICS Organic programme. (With relevant information including name and farmer code, surface, product, organic crop estimation, date of Internal inspection.)	2	2	
<b>b.</b>	Is there a written Internal inspection report for the annual visit at each farm?	2	2	
<b>c.</b>	Is there a documented review by the approval function?	2	0	
<b>d.</b>	Is there a list of sanctioned farmers?	2	2	
<b>e.</b>	Is there a list of farmers in conversion and what year of conversion they are in?	2	2	
<b>f.</b>	Is there a copy of the last Inspection report from the External Certification Body?	2	2	
<b>g.</b>	Is there clear labelling on all documentation to ensure separation between organic and non-organic product documents?	2	2	
<b>h.</b>	Is the ICS described in an ICS-document?	2	0	
<b>i.</b>	Are there contracts between the group and the individual farmers?	2	2	
<b>j.</b>	Is there an area/village map indicating location of each farm?	2	2	
<b>1.5</b>	<b>Product Flow</b>	20	13	12
<b>a.</b>	Is there a documented purchase system with records on farmer's sales to the group and product flow from farmer to sale?	4	3	
<b>b.</b>	Is there clear separation between all qualities? (e.g. organic v non-organic)?	4	4	
<b>c.</b>	Is there clear labelling for easy differentiation between al product qualities?	4	4	
<b>d.</b>	Does the ICS have a product recall procedure or system?	4	0	
<b>e.</b>	Is there a procedure for identifying infiltration from excess deliveries?	4	2	
<b>1.6</b>	<b>Risk Management</b>	10	0	5
<b>a.</b>	Is there an initial Risk assessment?	5	0	
<b>b.</b>	Does ICS take all measures to minimize the identified risks?	5	0	
<b>2</b>	<b>Social Control of Responsibility of the Community</b>	10	8	5
<b>a.</b>	Are loyalty promoted as a common responsibility?	3	2	
<b>b.</b>	What are the potential for infiltration of non-organic products?	3	2	
<b>c.</b>	Do the neighbours realise what organic is?	2	2	
<b>d.</b>	What is the communication/understanding and agreement between organic and non-organic farmers?	2	2	
<b>3</b>	<b>Training and Advice</b>	10	7	6
<b>a.</b>	Is there sufficient training of producers?	5	4	
<b>c.</b>	Is potential conflict of interest managed?	5	3	
	<b>TOTAL</b>	100	63	66

## APPENDIX 2

### Questionnaire for interviews to Approval Committee members

Name:

Date:

Gender:

	ICS Elements	Answers
<b>1.</b>	<b>Functioning of the ICS:</b>	
<b>1.1 Implementation of internal regulation</b>	What are the internal regulations of the producer organization?	
	Which are your functions in the Internal Control System?	
<b>1.2 Staff requirements</b>	How you were trained for performing your function? Do you receive support with continuous trainings?	
<b>1.3 Internal Inspections</b>	How the internal inspections are carried out?	
	Do you consider that there are no potential for conflicts of interests? Which measures are taken to avoid this situation?	
<b>1.4 Documentation</b>	Which are the registers and documents that support the ICS?	
<b>1.5 Product Flow</b>	Could you explain how you label and separate organic and non organic produce?	
	How you control the estimated production of the farmers against the real deliveries?	
	Is there a procedure in case of rejection of the production?	
<b>2.</b>	<b>Social control or responsibility of the community</b>	
	How you promote commitment between the members?	

<b>3.</b>	<b>Training and Advice</b>	
	How do you train the farmers in organic agriculture?	
	How do you train your staff in standards, ICS, inspections techniques?	
<b>4.</b>	<b>Additional information</b>	
<b>4.1 Organizational structure</b>	What is the structure of the producer organization?	
<b>4.2 Other services</b>	Which are the services that the organization provides to its members?	
<b>4.3 Value Chain</b>	What is the relation of your organization with the customers?	
	What is the relation of your organization with the supporters or financers?	
	What is the relation of your organization with the community?	

## APPENDIX 3

### Questionnaire for Farmers Survey

Name:

Date:

Gender:

<b>1.</b>	<b>External requirements for organic cocoa production</b>
<b>1.1 Seedlings</b>	Do you have to buy seedlings only from organic nurseries? YES                      NO                      DON'T KNOW
<b>1.2 Plants Nutrition and Soil Fertility (Off farm inputs and soil management)</b>	a. What you use to fertilize your cocoa trees?  b. It is allowed to burn residues like leaves, branches that naturally enrich the soil? YES                      NO                      DON'T KNOW
<b>1.3 Weed Control</b>	How you remove the weeds from your crop?
<b>1.4 Pruning</b>	a. What type of pruning you apply in the trees?  b. What you do with the residues?
<b>1.5 Pest Management (Plant Protection)</b>	Which practices you use to control pests and diseases of your crop?
<b>1.6 Harvest/ Post Harvest</b>	a. When you deliver the cocoa beans, do you receive a receipt were there is indicated the quantity and quality of your product? YES                      NO                      DON'T KNOW  b. Does the organization request from you an estimation of the production in advance? YES                      NO                      DON'T KNOW  c. The producer organization collects the fresh beans after how many days?
<b>2.</b>	<b>Internal requirements</b>
<b>2.1</b>	a. Can you mention internal regulations established by the producer organization that helps you to produce cocoa organically?  b. Which are the sanctions implemented by the organization in case you don't comply with the internal requirements for organic production?

<b>3.</b>	<b>Training and Services of the Producer Organization</b>
	<p>a. How you can qualify the trainings about organic production practices, provided by the organization? Choose one option and explain why:            Excellent      Very good      Good      Regular      Poor</p> <p>Why:</p> <p>b. From a scale from 1 to 5, please indicate the level of satisfaction with the trainings on organic production provided by the producer organization, where 5 is completely satisfied and 1 is completely not satisfied.</p> <p style="text-align: center;">             1      2      3      4      5  <input type="radio"/>    <input type="radio"/>    <input type="radio"/>    <input type="radio"/>    <input type="radio"/> </p> <p>c. From a scale from 1 to 5, please indicate the level of satisfaction with the price paid by the producer organization, where 5 is completely satisfied and 1 is completely not satisfied.</p> <p style="text-align: center;">             1      2      3      4      5  <input type="radio"/>    <input type="radio"/>    <input type="radio"/>    <input type="radio"/>    <input type="radio"/> </p>

## APPENDIX 4

### IFOAM Risk assessment check list

Risk Criteria	Situation found	Assessment		
		H	M	L
<b>Farming</b>				
Are land properties clear and can farmers take the decisions for organic farming?	Every member own the land and decides about it use.			X
Are farmers rotating their crops on changing plots of land?	No, Cocoa is a perennial crop. Other crops like cassava and banana are in separate fields.			X
Are non-allow products (pesticides, herbicides and fertilizers) easy available for the farmers?	Yes, non-allow products are available in towns which are not so far from the farmer's communities. However producers are not used to buy these products.		X	
Does the farmer grow crops with high infection pressure of pest and diseases which are difficult to manage organically?	Farmers are not used to apply agrochemicals to control pests and diseases, especially in cocoa, because diseases like "Monilia" are difficult to control using chemicals.			X
Are there producers in the organic programme which cultivate conventional crops for local sales or home consumption using non - allowed products?	Farmers only cultivate other crops for home consumption but they do not use pesticides. Some farmers applied UREA due to a government programme that subsidizes this fertilizer to producers.		X	
Is the spraying equipment used for conventional and organic treatments?	No, farmers do not use any spaying equipment.			X
Could organic fields be contaminated by drift of chemicals form adjacent conventional fields?	No, farmers in the region are not use to apply agrochemicals.			X
Could organic fields be contaminated by ground or irrigation water from conventional fields?	No, farmers in the region are not use to apply agrochemicals.			X
Do the farmers store agrochemicals and is there any risk that the certified products might be contaminated?	No, farmers in the region are not use to apply agrochemicals.			X
Are there in the region any sources of contamination? (industries, mines, highways and others)	No.			X
Are there any programmes to promote agrochemicals?	Yes, government implemented a program that subsidizes UREA to producers.	X		
Are GMO used in the region?	No.			X
<b>Internal Control</b>				
Is the distance between regional group manageable for internal control and product purchase?	Distances are not so far from the collection unit but the roads to go to some communities are not in good conditions.		X	
Do the organic manager and his staff have the required means (finance, infrastructure, means of transport, etc.) to realise the internal control?	No, Wiñak PO has very limited financial means to realise the internal control.	X		
Has it been assured that there are sufficient internal inspectors to realise the inspection work?	No, internal inspectors are not being trained continuously so there is the risk to ha a shortage of qualified staff.	X		
Are responsibilities defined in such a manner that conflicts of interest can be excluded?	Responsibilities are defined in procedures but in some cases what is written in the procedures is not what happens in practice that makes more likely to occur conflicts of interest, especially because the organization has a shortage of personnel.	X		

<b>Buying, transport, storing, processing</b>				
Is there a big price gap between organic and conventional product? (risk that organic farmers buy from conventional neighbours and sell the product as organic)?	Yes price difference is 16.6% more between organic and convectional cocoa, so farmers could be tempted to sell convectional cocoa as organic.		X	
Is it certain that there is no possibility to confuse or mix the products of different quality at the purchase centres and warehouses?	There is the probability that confusions may occur as the convectional and organic purchase is carried out in the same collection unit. However there is a clear procedure for the identification of both types of cocoa. (Batch control sheet, batch identification card).		X	
Contamination of the cocoa from non-allowed products during transport or storage?	No, as the producer organization hire a pickup specifically to transport the cocoa purchased during the day.			X
Can it be excluded that organic product stored can be contaminated with agrochemicals? (pest control in storing)	Yes it can be excluded; no agrochemicals are use for pest control.			X
Is it certain that the transport equipment and the warehouses are not treated with products that are not allowed?	Yes, the storage of the collection unit is not treated with non-allowed products.			X
All personal responsible for handling organic products has been trained on the specific requirements?	Personnel were trained but there is not in place a continuing program for training.		X	
H= High risk M=Medium Risk L= Low Risk				

# APPENDIX 5

## Example of Organizational chart for Wiñak PO

