Annex 2

Provincial Working Group

（Program, Presentation Materials）

First Meeting of Provincial Working Group
31 March,2010
Second Meeting of Provincial Working Group
18 May,2010
Third Meeting of Provincial Working Group
25 May,2010

THE STUDY
ON
THE PLAN OF REORGANIZATION OF
THE AGRICULTURE SUPPORTING SERVICES,
COPING WITH POVERTY ALLEVIATION
FOR RURAL PEASANT IN MOUNTAINOUS AREA
IN
THE REPUBLIC OF ECUADOR
Annex of the Final Report

Annex 2

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First Meeting of Provincial Working Group

Program

Objectives: - Present the framework of the Provincial Working Group
- Present the Basic Component 1 & 2 en el Plan fo the Reorganization of Agriculture Supporting Service for Rural Peasant

Venue: Auditorium de MAGAP provincial de Riobamba

Date & Time: 09h30, Wednesday, 31 of March 2010

Agenda:

Hour		Activities	Responsible Person
Initial	Final		
09h30	09h40	Opening Remarks and Introduction of Participants (with explication of the framework of the meeting)	Undersecretary of Third Region
09h40	09h50	Presentation of Summary of the Provincial Working Group	Undersecretary of Third Region
09h50	10h20	Presentation of sketch of the Basic Component 2 “Improving Internal Management of Institutions “ on the plan of reorganization.	JICA Study Team
10h20	10h30	Coffee break	
10h30	11h00	Presentation of the sketch of the basic component 3 “Capacity Building Technical Staff “on the plan of reorganization.	JICA Study Team
11h00	11h30	Comments, Questions & Answers	Undersecretary of Third Region
11h30	11h40	Conclusions and Closing Remarks (Confirmation of Next Meeting)	Provincial Council of Chimborazo, MAGAP Provincial Direction of Chimborazo, y JICA Study Team

Riobamba of Chimborazo Province, 31 March 2010

PARTICIPANTS LIST OF FIRST MEETING OF PROVINCIAL WORKING GROUP

Institution/Working Place/Section			Name		Position
MAGAP	Quito	Cooperación Internacional	Hector Jaramillo	Lic.	Técnico
MAGAP	Quito	Cooperación Internacional	María A. Moscoso	Dra.	Tecnica
MAGAP	Quito	Cooperación Internacional	Mauricio Rivera	Teni.	Técnico
MAGAP	Quito	Desarrollo Rural	David Espinoza		
MAGAP	Quito	Subsecretaría de Planificación	Diego Viscaino	Ing.	
MAGAP	Tungurahua	Dirección Provincial de Tungurahua	Josué Salazar	Ing.	Coordinador
MAGAP	Chimborazo	Dirección Provincial de Chimborazo	Bolívar Garrido	Ing.	Coordinador
MAGAP	Chimborazo	Subsecretaría Regional de la Sierra	Lucy Montalvo	Ing.	Directora
MAGAP	Chimborazo		Angel Vaca	Ing.	Coordinador
MAGAP	Chimborazo		Mario Montenegro	Ing.	Director Técnico
Consejo Provincial	Tungurahua		Manuel Ullauri	Lic.	Director de Producción
Consejo Provincial	Chimborazo		Eduardo Méndez	Ing.	Comunicación
Consejo Provincial	Chimborazo		Carolina Chávez	Ing.	Técnica
INDA	Quito		Galo Aldaz	Sr.	

Ministry of Agriculture, Livestock, Aquaculture and Fish
Japan International Corporation Agency

THE PLAN OF REORGANIZATION OF THE AGRICULTURE SUPPORTING SERVICES, COPING WITH POVERTY ALLEVIATION FOR RURAL PEASANT IN MOUNTAINOUS AREA IN THE REPUBLIC OF ECUADOR

Lanzamiento del Group de Trabajo Provincial

March 2010

Contents

- Activities
- Implementation Structure of theJICA Study
- Ejecución del Estudio
- Operation Plan of the JICA Study in Second Year
- Provincial Working Group

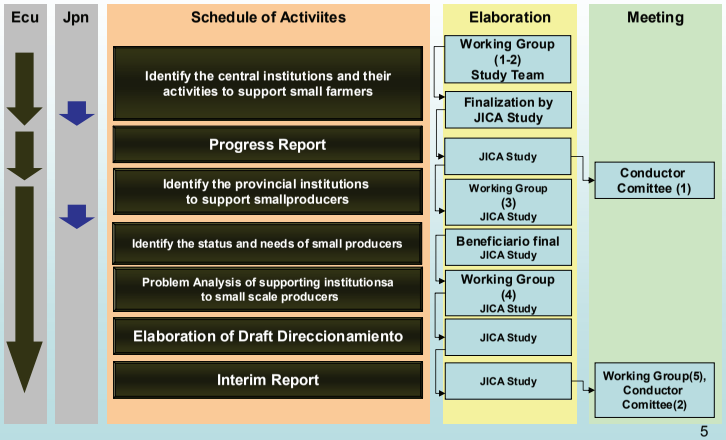
Activities

- Define the methodology for the preparation of the plan (Japan)
- Define clear strategies for every aspect of this project
- Analysis + Knowledge and Experience = definition of strategic bases
- Draft a strategic plan for each topic
- Summary of draft plan
  - Basic diretion of the Second Year
  - Activities in the second phase (strategic plan)
  - Institutional Organization (strategic plan)
  - Examples (Interim report)
- Elabolate the Df/R（Japón）
- Explicate the Df/R with reciving comments
- Elabolate the Final Report

Implementation Structure of theJICA Study

- Conductor Comittee
- Working Group
- Provincial Working Grpup
  (for the pre-formulation of Provincial Coordination Comittee)

Operation Plan of the JICA Study (Results of the First Year)



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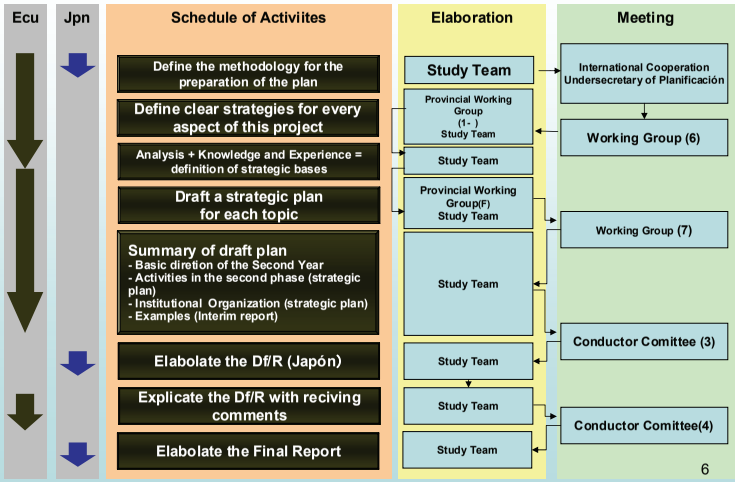
Operation Plan of the JICA Study in the Second Year



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Provincial Working Group
Supergoal and Justfication

Supergoal:

To know the basic componets involculado more effective and experiences of participants, which the mission shall refer to structure the draft plan, based on the activities of the working group at provincials.

Justfication:

From the experiences gained, the Secretariat Regional of the Sierra can take a guidance for the reorganization of systems to support small farmers in the Sierra in general.

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Provincial Working Group
Provincial Objetivo

Develop a concrete strategic plan to implement the 3 components proposed in the first stage of the project (referred to as guidelines in the interim report).

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Provincial Working Group
Resultados Esperados

- First components
  Defining specific strategies to achieve “Inter-institutional Linkage System," which is a prerequisite to achieve the reorganization of support services. Understanding and defining the role of each institution (responsibilities, goals, achievements, methods, techniques and equipment needed, etc..). Establishing a precedent for achieving improved support for small scale producers to a social level.
- Second components
  Redefining the administration system of each institution in turn improving the organization (processes, criteria, methodology, skills, structure, etc.). Establishing a precedent for improving the quality of work of each institution and establishing a Inter-institutional Linkage system due to support small producers
- Third components
  Recognizing the technical needs and knowledge, as well as the mechanisms for the improvement of the capacity (training, workshops, facilitation, networking and self-training, etc.), in order to achieve the "technical improvement" for supporting small scale farmers

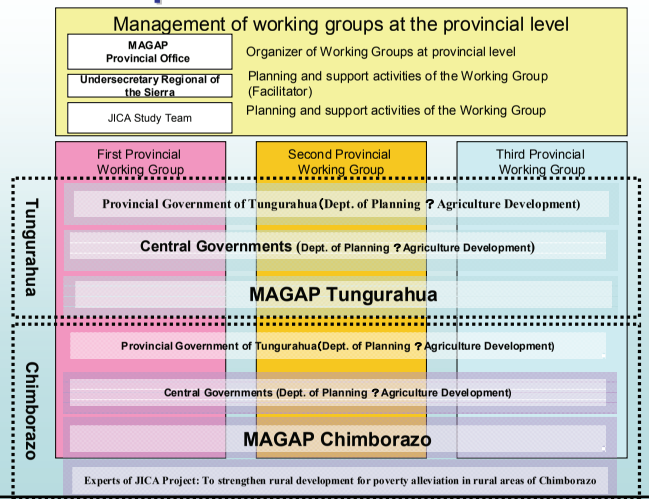
Provincial Working Group Activities

- Elaborate the plan by JICA Study Team with counterparts.
- Review the draft action plan by the Japanese experts, how it should be applied to the working groups at provincial level.
- Instruct working groups guidelines for developing the plan of each of the strategies.
- Implement the working groups at provincial level.
- The Japanese experts explain an outline of basic components to each of the working groups at the provincial level.
- Collect and analyze the drafts plan developed by each working group at provincial level.
- Expose the plans developed by each working group at provincial level working group meetings.

Provincial Working Group Participants

Region		MAGAP	Provincial Government	Cantonal Government
Central Level		Undersecretary Regional of the Sierra		
Provincial Level	**Tungurahua**	MAGAP Provincial Office of Tungurahua	Dept. of Planning in Provincial Council of Tungurahua	Cantón
	Chimborazo	MAGAP Provincial Office of Chimborazo	Dept. of Planning in Provincial Council of Chimborazo	Cantón
RoI		Technical support to agricultural activities		

Provincial Working Group
Implementation Structure



Ministry of Agriculture, Livestock, Aquaculture and Fish
Japan International Corporation Agency

THE PLAN OF REORGANIZATION OF THE AGRICULTURE SUPPORTING SERVICES,
COPING WITH POVERTY ALLEVIATION FOR RURAL PEASANT
IN
MOUNTAINOUS AREA
IN THE REPUBLIC OF ECUADOR
(SECOND YEAR)

THE PLAN OF REORGANIZATION OF THE AGRICULTURE SUPPORTING SERVICES FOR SMALL SCALE PRODUCERS

Basic Component 2 and 3

March 2010

1

Basic Component 2:
Improving the internal management system of institutions

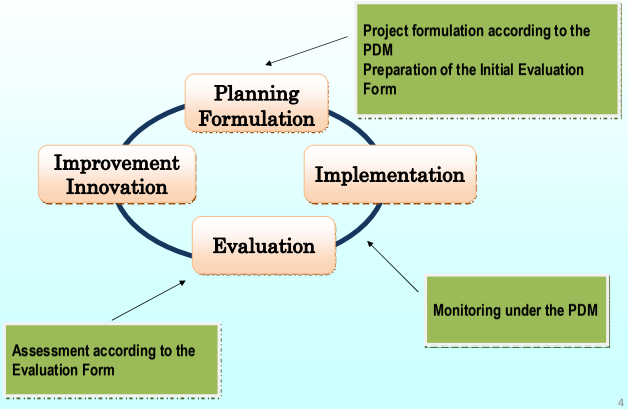
2

OBJECTIVE

- Improving the quality and efficiency of projects
- Improve capacity of planning and project formulation
- Improving the accountability to beneficiaries and citizen.
- Understanding mutual communication between the facilitators, institutions.

3

Overview Management System 1
System Flow



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Overview Management System 2

Tools of necessity

- **Project Level**
  - ➢ **Project Formulation using a Logical Framework.**
  - ➢ **Preparation of the Initial Evaluation Form**
- **Program Level**
  - ➢ **Preparation of the Initial Evaluation Form**

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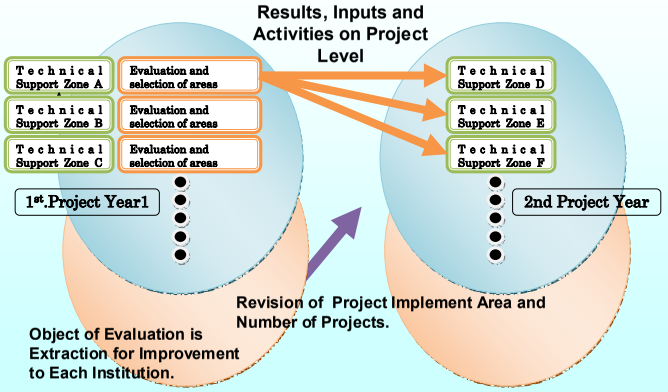
Overview Management System 3

Application of System



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Evaluators

- **Project Level**
  - ➢ **Preparer of Evaluation Form: Person in Charge of Project**
  - ➢ **Approver of Evaluation Form: Project Manager.**
- **Program Level**
  - ➢ **Preparer of Evaluation Form : Person in Charge of Program.**
  - ➢ **Approver of Evaluation Form : Program Maneger.**

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Logical Framework for the Preparation 1

Contents of assumptive Project

- **Project Name: Construction of Irrigation system in the Community C .**
- **Objective: Improvement of Production of subsistence crops and the introduction of cash crops.**
- **Construction Details: Open Channel 8km, pipeline 1km , reservoir and sprinkler equipment.**
- **Beneficiaries: Farm field 100ha area. 60 Farmers (Family)**
- **Project Cost: U.S. $ 30,000**

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Logical Framework for the Preparation 2
Preparation of Project Summary

Project Summary
General object Improvement socially and economically situation in the Community .
Project object Improving ivelihood through increase agricultural production.
Results 1 Increase and stability of production of subsistence crops. 2 Crop production begins for Sale. 3 Start the stable management of the Irrigation Users Association.

Activities

1. Formulation of Irrigation Plan.
   a. Irrigation Management Plan.
   b. Irrigation Facility Plan.
2. Formulation of the Irrigation Users Association.
   a. Decision of the Terms of the association.
   b. Decision of Water Fee .
   c. Creation and Registration the association.
3. Costs Decision Support Institution and the Irrigation Users association.
4. Construction of Irrigation facilities.
   a. Construction of Open Canal.
   b. Construction of Water Reservoir Tank.
   c. Construction of Pipeline.
5. Purchase of Equipment and Materials.
6. Irrigation System Operation .
   a. Workshop for Operating Technology Transfer and Monitoring method for Users association by Supporting Institutions.
   b. Operation and Monitoring by Irrigation Users association .
7. Extension of Cultivation Technology of cash crop.
   a. Extension of Cultivation Technology by supporting Institutions.
   b. Participation of Beneficiaries.
8. Harvest and Sale.

Logical Framework for the Preparation 3
Relationship between project summary and external conditions

Project Summary	External Conditions
General object Improvement socially and economically situation in the Community ..	
Project object Improving ivelihood through increase agricultural production.	Multisectoral Community Support. Stable Growth of the Ecuadorian economy.
Results 1 Increase and stability of production of subsistence crops. 2 Crop production begins for Sale. 3 Start the stable management of the Irrigation Users Association.	Products will be sold at expected prices.
Activities 1. Formulation of Irrigation Plan. a. Irrigation Management Plan. b. Irrigation Facility Plan. 2. Formulation of the Irrigation Users Association. a. Decision of the Terms of the association. b. Decision of Water Fee . c. Creation and Registration the association. 3. Costs Decision Support Institution and the Irrigation Users association. 4. Construction of Irrigation facilities. a. Construction of Open Canal. b. Construction of Water Reservoir Tank. c. Construction of Pipeline. 5. Purchase of Equipment and Materials. 6. Irrigation System Operation . a. Workshop for Operating Technology Transfer and Monitoring method for Users association by Supporting Institutions. b. Operation and Monitoring by Irrigation Users association . 7. Extension of Cultivation Technology of cash crop. a. Extension of Cultivation Technology by supporting Institutions. b. Participation of Beneficiaries. 8. Harvest and Sale.	Prerequisite •In the area of settlement, there are no social conditions that prevent the formation of Irrigation Users association. •The settlement is located where they can sell agricultural products.

Logical Framework for the Preparation 4
Input

Input: support side	Input: beneficiary side
•Experts engage in Planning of the Irrigation System. •Experts engage in to support the training of Irrigation Users association. •Experts engage in the Transfer of Technology Management and Supervision of Irrigation Facilities. •Construction Costs. •Equipment and Materials Costs. •Expert engage in Technology supports to cultivation. •Monitoring Expert. •Other office Costs.	•Participation Training and Meetings of Irrigation Users association. •Holding and Participation in Technology Transfer Seminars for Management and Supervision of Irrigation Facilities. •Activities of the Irrigation Users association (Collecting of Costs for Use of Water. etc..) •Participation in the extension workshop of Cultivation Technology. •Harvest and Sale.

Logical Framework for the Preparation 5
Indicators

Indicators	Available Media
• **Communities Population, Number of Migrant, Family Income.**	• **Census Data,** • **Household Account Book.**
• **Family Expenses for subsistence crop.** • **Sales Price of Agricultural Products.**	•**Household Account Book.**
• **Irrigation Area: 100ha** • **Situation of Maintenance of Equipment and Materials.** • **Index Collection of Water Use Costs.** • **Yield of Harvest of autocosume Crops.** • **Yield of Cash Crops.**	• **Final Project Report.** • **Register of the Collection of Water Costs.** • **Sampling Yield Examination.**

Project Evaluation 1
Evaluation Item

- Relevance : National Policy, Regional Policy, Needs.
- Efficiency: Performance, Period, Input.
- Effectiveness: Indicators tested, qualitative information, IRR
- Impact : Social environment, natural environment.
- Sustainability: Technical, System.

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Project Evaluation 2
Evaluation Results

Lessons learned, recommendations for future action Project Experts	• It is necessary to introduce corrective measures to mitigate income inequality within the community. • It is necessary to consider contingencies such as natural disasters within the schedule formulation of works , setting a more reasonable period. • Sometimes there were problems communicating with the instituto B, responsible for promoting culture techniques so it is necessary to establish a communication framework for the latter to be more fluid. • The contribution of beneficiaries to the sprinkler has been decided in assembly. With this, one has the impression that they are more careful in handling equipment, in comparison to other areas.
Lessons learned, recommendations for future action Project Manager	• With regard to economic inequalities within the community, it is necessary to introduce measures to reduce the differences economic situation between household, such as putting on discussion of the irrigation association to include a surcharge for the use of irrigation water. • For the productivity of maize and potatoes can approach the target initially, it is necessary to ensure continuity of support service. In the next year is expected to introduce improved soil and improved seeds through the ERA method. For the introduction of improved seed will seek the participation of the support institution D in this project. • Continue to techinical support to water users associations every three months. • With regard to the implementation of the project is necessary to sign an accurate agreement with the association of users, review the current agreement format.

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Program Evaluation 1
Evaluation Item

- Relevance : National Policy, Regional Policy, Needs.
- Efficiency: Performance, Period, Input.
- Effectiveness: Indicators tested, qualitative information, IRR
- Impact : Social environment, natural environment.
- Sustainability: Technical, System.
- Equity: Area Application, Beneficiaries Responsibility.

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Program Evaluation 2
Evaluation Results

- For 2012 projects, improvements and changes will be project evaluations.
- In some areas was carried out a review of project costs and as there was an increase in the contribution of the beneficially (the acquisition of the sprinkler head by the water users' association), the contribution of the institution has fallen. The same proportion of contributions will be implemented for all areas in 2012. The economy in the budget will extend the areas of program implementation.
- In relation to the acquisition of the sprinkler heads should be expected that some associations will not be able to acquire them so we will study the possibility of using the scheme of financing of the institution E.
- Coordination among the institutions involved are given during the meeting of the committee support agencies in the province to be held in February. The departments responsible for each institution should prepare the material to be used at this meeting until the end of January.

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Basic Component 3 : Capacity Strengthening of rural and agricultural development facilitators

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Basic Component 3 : Capacity Strengthening of rural and agricultural development facilitators

1) Need to improve capabilities
(Results of problems analysis by WG)

Limited access of small farmers to support services

Limitation to provide effective extension services to small producers

- Inaccurate identification of the techniques demanded by small farmers.
- Some facilitatores unmotivated .
- Lack of technical capacity of facilitatores.
- Limited number of facilitatores which is reflected in the lack of activities.
- Failure to build on experiences of success and abortion.
- Agency effort was insufficiency.

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Basic Component 3 : Capacity Strengthening of rural and agricultural development facilitators

2) Expected capacity to provide technical support services for small producers

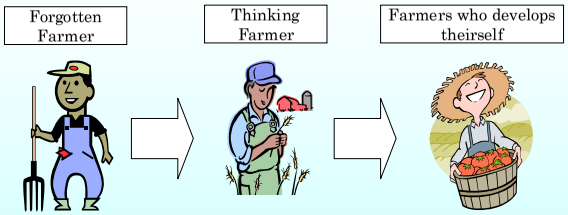
Function

1. Education and guidance (technical knowledge)
2. Consultation (farm management, financing, etc.).
3. Organization (formation and consolidation of organization)
4. Multimedia functions between farmers and agricultural policy (information, communication)
5. Information (collection, accumulation, processing, supply)

Practical capacity

1. Specialty
2. Coordination
3. Facilitation

Capacity required for facilitarores



Capacity of Coordination

Capacity of specialty

Capacity of Facilitation

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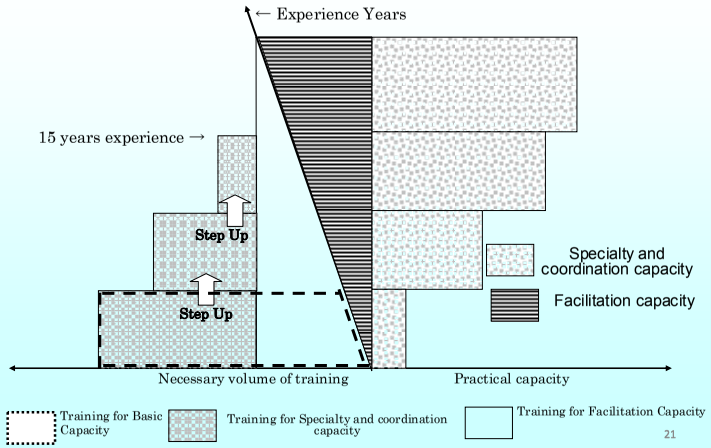
Steps to train the extension capacity



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Basic Component 3 : Capacity Strengthening of rural and agricultural development facilitators

3) Proposed basic guidelines (operation system)

- Objective : Continuing education (planned) for technical staff to support to small producers in the Sierra.
- Coordinating body: Sierra Sub-Secretary office MAGAP
- Cooperating institutions: Provincial and Cantonal Governments, MAGAP Provincial office, Inter-Agency of MAGAP, universities and other educational institutions, NGOs, etc..
- Beneficiaries: facilitatores that provides support to small farmers in the Sierra (MAGAP Provincial office, Provincial and Cantonal Government)

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Basic Component 3 : Capacity Strengthening of rural and agricultural development facilitators

3) Proposed basic guidelines (activities)

- **Preparation of training programs:** Staggered Programs (regular and ongoing training) as staff levels, target products and themes.
- **Implementation of the practical capacity improvement:** Introduction of new techniques and replicate successful projects / development, validation and technical configuration of the site.
- **Construction of network for technical staff :** Place making to share information and techniques between technical staff .

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Content of Training Program for facilitatores(Draft)

Items of understand and learn	Basic Skills (Up to 2 years of practical experience)		Applied Skills (Up to 12 years of practical experience)	
	Class	Practice	Class	Practice
Capacity of specialty	Physiology	Prepare Cropping calendar model	Technical training by specialty	Selection of the subjects for the specialties
	Soil and fertilizer	Prescription as a result of soil analysis		
	Pests	Prescription as a result of pest diagnosis		
	Rural life	Measuring the efficiency and intensity of field work		
	Agricultural management	Registration of Agricultural bookkeeping	Business Development	Management analysis of SWOT method
Capacity of coordination	Policies	Prepare action program	Prepare of the community vision	
	Extension method	PCM problem analysis, Simulation Workshop	Problem solving through extension method	
Capacity of facilitation		Communication skills for dialogue simulation	Practical training to problem solving through dialogue simulation	

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Program for improvement of practical capacity

Regional Meeting, are technicians and researchers, support to small producers, 1 -2 times per year.

- **New technology to promote extension:** It is the presentation of the techniques applicable to small producers. It would be officially released as "New techniques to promote extension" after a mutual agreement the entity institution of research and administration.
- **Presentation of successful projects:** To introduce for successful project will present the activities for themselves. The projects, being natural and social environment has similarities, it has high possibility of local application.

Development, validation and assembly of filed techniques: To apply the results and / or replicate a set of "development, validation and assembly" presented itself, since the activities.

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Construction of the network of facilitatores

It is a database for all actors.This database is consist of organizational information, expertise, responsibilities and, existing projects summary and other nessaly informations. Database achieve the expected more effective activities in projects.

- All actors can see the similarity projects contents and activities , and exchange information between actors.
- When running a few projects in the same community or micro basin, it can be more efficient and effective under this database.
- Taking advantage of the database can be identified and supports to exparts, when they have a shortage of capacities.

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Second Meeting of the Provincial Working Group

Program

Objectives: Specify the Basic Component 2 with H. Provincial Council of Chimborazo and Tungurahua, and MAGAP

Venue: Auditorium de Undersecretary of Third Region of the MAGAP

Date & Time: Tuesday, 18 May 2010, from 9h30 to 12h30

Agenda:

Hour		Description	Responsible Person
Initial	Final		
09h30	09h40	Opening Remarks	Cooperation International
09h40	09h55	Explication of the framework of the meeting and introduction of the participants	Undersecretary of Third Region
09h55	10h15	Presentation of the actual internal management of H. Provincial Council of Chimborazo	H. Provincial Council of Chimborazo
10h15	10h35	Presentation of the actual internal management of H. Provincial Council of Tungurahua	H. Provincial Council of Tungurahua
10h35	10h55	Presentation of the actual internal management of MAGAP	MAGAP Provincial Direction of Chimborazo
10h55	11h15	Comments, Questions and Answers	Undersecretary of Third Region
11h15	11h25	Coffee Break	
11h25	11h45	Presentation of improvement of internal management	JICA Study Team
11h45	12h00	Comments, Questions and Answers	Undersecretary of Third Region
12h00	12h10	Confirmation of the activities in next meeting	JICA Study Team
12h10	12h20	Conclusions and Closing Remarks	Cooperation International
		Lunch	

Riobamba of Chimborazo Province, 18 May 2010

PARTICIPANTS LIST OF SECOUND MEETING OF PROVINCIAL WORKING GROUP

Institution/Working Place/Section			Name	Position	
MAGAP	Quito	Cooperación Internacional	María A. Moscoso	Dra.	Tecnica
MAGAP	Tungurahua	Dirección Provincial de Tungurahua	Fabian Valencia Tamayo	Ing.	Director
MAGAP	Tungurahua	Dirección Provincial de Tungurahua	Josué Salazar	Ing.	Coordinador
MAGAP	Tungurahua	Dirección Provincial de Tungurahua	Holger Vivanco	Ing.	Técnico
MAGAP	Chimborazo	Dirección Provincial de Chimborazo	Jorge Contero	Ing.	Planificación
MAGAP	Chimborazo		Angel Vaca	Ing.	Coordinador
Consejo Provincial	Tungurahua		Walter Jácome	Ing.	Facilitador
Consejo Provincial	Chimborazo		Carolina Chávez	Ing.	Técnica
Consejo Provincial	Chimborazo		Galo Juarado	Ing.	Técnico
Consejo Provincial	Chimborazo		Juan Carlos Arellano	Ing.	Técnico

Basic Component 2

Improving the internal management system of institutions

Provincial Government (Chimborazo) Characteristics of PPCH2010 Profile Form

- It is compactly designed.
- The workload of composer is minimum.
- The attached documents are complete to necessary for project implementation.

It is possible the implementation of project with minimal work effort.

Characteristics of SENPLADES System

The General Application Structure of Research and grant aid projects with International Cooperation

- It contains all the information needed to implement activities. It is contained monitoring plan.
- The content is same accuracy as Feasibility Study.
- The Overview of Activities is framed in a Logical Framework.

Contains in-depth information needed when starting the project

Characteristics of MAGAP System

- It recognizes the contribution to the objectives of the 12 National Development Plan.
- It recognizes the contribution to the 4 Sectoral Objectives of MAGAP.
- Indicators related to regional governments.

It is able to evaluated Impact and others to Farmers on 5 levels.

Project Management at each institution
（ Observed by the Study Team ）
Provincial Council Chimborazo

- Minimum workload for the composer.

Point to be assessed

- The content of this Profile Form is not comprised theoretically. In order to do this, the Project Monitoring and Improvement is not able ensured.

Point to be improved

Project Management at each institution
（ Observed by the Study Team ）
The General Application Structure of Research and grant aid projects with International Cooperation, SENPLADES

- Project content is declared within the Logical Flame Work, which facilitates the monitoring and evaluation.

Point to be assessed

- This application is complete, however in their development takes too much time.
- Expertise is required for the Analysis of Costs and Benefits.

Point to be improved

Project Management at each institution
（ Observed by the Study Team ）
MAGAP

- It is easy introduction and recognition of projects that contribute to the high level planes.

Point to be assessed

- It is not an appropriate system for Project Management.

Point to be improved

Proposal for Project Profile (Step 1), Project Management System

1. Basically the system will be respected each institutions.
2. The Content of the Project shall be expressed within the logical framework.

Document of Chimborazo Provincial Council (From 5 to 10).

3. Evaluate for their contribution towards the higher planes.

To use MAGAP Forms.

Proposal for Project Profile (Step 1), Project Management System

4. Add the Monitoring Plan

Monitoring Form specified in the Index of Logical Flame Work (Who, When, How).

5. Transparency Activities

The projects are implemented with people (activities) and money (budget). Transparency of activity is necessary for the proper handling of Management, Monitoring and Evaluation. It is very important to complete the activities column in the Logical Framework.

Third Meeting (Final Meeting) of the Provincial Working Group

Program

Objectives: • **Share the basics components 1, 2 and 3 with H. Provincial Council of Chimborazo y Tungurahua, y MAGAP**

Venue: Auditorium de MAGAP provincial de Riobamba

Date & Time: **26 May 2010, Wednesday, from 9h30 to 12h30**

Agenda:

Hour		Description	Responsible Person
09h30	09h40	Opening Remarks and	Cooperation International
09h40	09h55	Introduction of the Working Group	Undersecretary of Third Region
09h55	10h15	Presentation of the Basic Component 1: Construction of the interinstitutional linkage system	JICA Study Team
10h15	10h35	Presentation of the Basic Component 2: Improving Internal Management of Institutions	JICA Study Team
10h35	10h50	Coffee Break	
10h50	11h10	Presentation of the Basic Component 3: Capacity Building Technical Staff	JICA Study Team
11h10	11h40	Comments, Questions & Answers	Undersecretary of Third Region
11h40	11h50	Con Conclusions and Closing Remarks	Cooperation International
		Lunch	

Riobamba of Chimborazo Province, 25 May 2010

PARTICIPANTS LIST OF THIRD MEETING OF PROVINCIAL WORKING GROUP

Institution/Working Place/Section			Name	Position	
MAGAP	Quito	Cooperación Internacional	María A. Moscoso	Dra.	Tecnica
MAGAP	Tungurahua	Dirección Provincial de Tungurahua	Fabian Valencia Tamayo	Ing.	Director
MAGAP	Tungurahua	Dirección Provincial de Tungurahua	Josué Salazar	Ing.	Coordinador
MAGAP	Tungurahua	Dirección Provincial de Tungurahua	Holger Vivanco	Ing.	Técnico
MAGAP	Chimborazo	Dirección Provincial de Chimborazo	Jorge Contero	Ing.	Planificación
MAGAP	Chimborazo	Subsecretaría Regional de la Sierra	Lucy Montalvo	Ing.	Directora
MAGAP	Chimborazo		Angel Vaca	Ing.	Coordinador
MAGAP	Chimborazo		Mario Montenegro	Ing.	Director Técnico
Consejo Provincial	Tungurahua		Walter Jácome	Ing.	Facilitador
Consejo Provincial	Chimborazo		Galo Juarado	Ing.	Técnico

Material for the Provincial Working Group 3

Basic Component 1:
Construction of the institutional linkage system

Basic Guideline for Reorganization

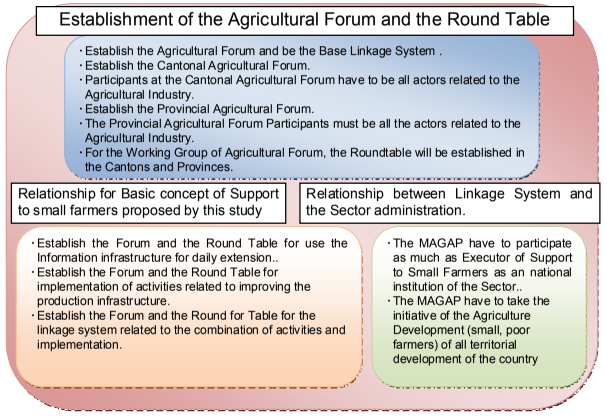
- Contribute to the formulation of the Territorial Ordainment Plan prepared by the provincial government and municipal governments, shall be assumed implementation.
- Contributing to National Development Plan and Development Plan of the Agricultural Sector, shall be assumed implementation.
- Support Plan for small farmers proposed by this study, shall be assumed implementation.

Establishment of Cantonal・Provincial Agricultural Forum and Agricultural Round Table

Basic concept of Support to small farmers proposed by this study

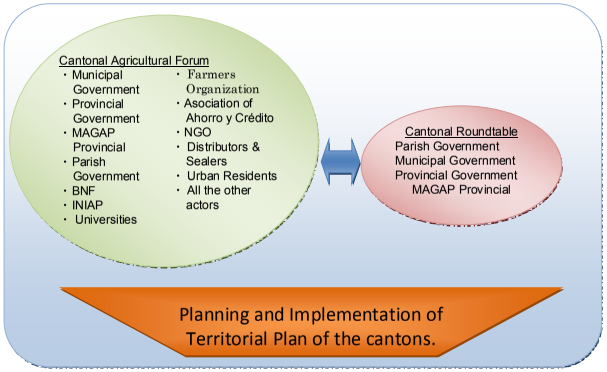
- Rutine Extencion Service:
  Daily extension at the core of the facilitation function.
- Improvement of infrastructure:
  Project to Improve Soil Fertility which is the basis of the cultivation crop, but the results will not be short term.
- Complex plioject :
  Activities should be combined aim to high performance and its realization.(Example : Combination to Improvement of Irrigation facility and Cultivation Technology extension)

Basic Conditions for the Establishment of System Linkage



Annex 2-21

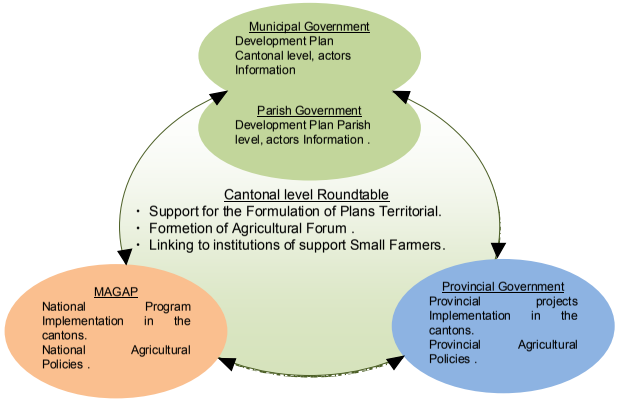
Member of the Agricultural Forum and Roundtable



Role of the Round Table

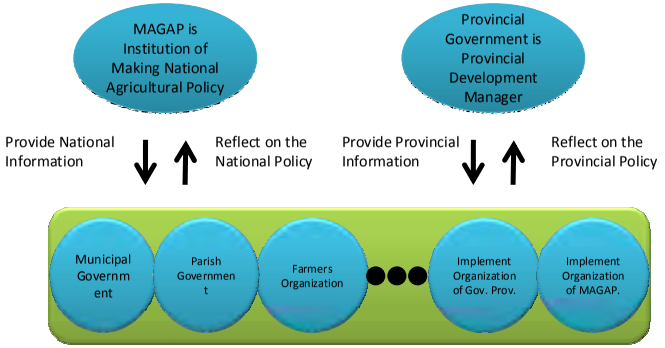
- Support for the Formulation of Territorial Ordainment Plans
- Formation of Agricultural Forum
- Linking to institutions of support Small Farmers

Role of Members of the Roundtable



Role of Members of the Roundtable

(Provincial Governments・MAGAP Provincial Office)



Methodology of Reorganization

1. Establishment of Agricultural Roundtable in the Provinces and cantons.
2. Support for the Formulation of Territorial Plans of provincial and municipal governments through the Agricultural Roundtable.
3. Establishment Linking System for actors through Agricultural.
4. Preparation of Agricultural Forum for Agricultural Roundtable.
5. Establish Agricultural Forum and Inplimentation of Agricultural Development participation of all actors.

Basic Component 2 ： Improving the internal management system of institutions

Meeting Summary of Previous Working Group

- Shall be respected project management system of each institution
- Unification of the contents of Project Profile form for every institutions
- To clearly the relationship of Projects and High Level Policy
- To clearly the Action Plans
- To clearly the relationship between activities, inputs and results

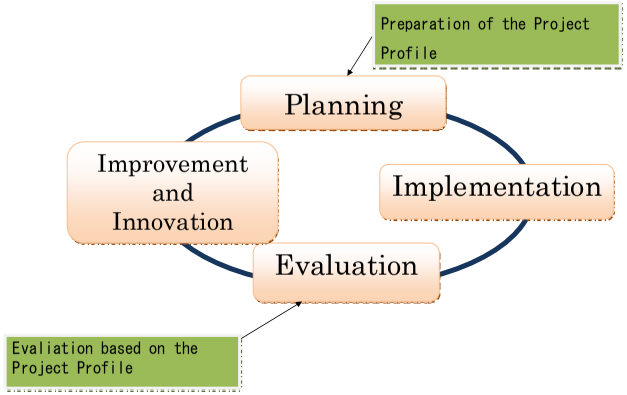
Characteristic of Project Profile of the Tungurahua

- This project profile format is the Cantonal governments use to sign agricultural development agreements with the provincial government.
- The content is very detailed.
- The results of the plan are easy to recognize, and are divided into components.
- The relationship between activities and results is very clear.
- The relationship between results and inputs is very clear.

Evaluation of Project Profile of the Province of Tungurahua

- It is made with the same parameters of activities-investment-results, that the Logical Frame Work.
- To request knowledge and practice for processing less than logical flame work
- Result Indicator of each components is clear.
- The contribution to high level policy only done at the Cantonal plan.

Confirmation of Project Cycle Management



Basic concept for proposed Project Profile

- Lighten the workload of the staff to prepare.
- It should contain the contents of project evaluation and recommendations for improvement and reform.
- Be respected current project profile used by each institution.

Necessary Content of the Project Profile 1

1. **Project Summary**

- **PROJECT NAME:**
- **LOCATION:**
- **BENEFICAL ORGANIZATIONS :**
- **NUMBER OF BENEFICIARIES :**
- **PROJECT ACTIVITIES:**
- **DATA REQUIRED FOR EACH INSTITUTION:**

Necessary Content of the Project Profile 2

2. **Contents of Project**

- **Project Results**
- **Project Activities**
- **Project Inputs**
- **Indicaters Projects Results**
- **Contribution to High Level Policy**

Proposals for Unification of Project Profiles

- Project Summary

  It will use the current format of each institution. However, in case of not having a format to prepare new format of project profile form.

- Contents of Project

  ➢With regard to Activities, Results, Investment and Desired Results will be used items 10, 11 and 12 of the documents submitted by Tungurahua
  ➢However, in terms of inputs, will respect the system of each institution.
  ➢To relationship with high level policy will be used MAGAP form, however in the case of cantonal level methodology will be used Tungurahua form

Staff responsible for each activity

- Project Profile

➢ Preparation of Project Profile：Person in Charge of Project

➢ Aprobado por：Administrador de Proyectos

- Projects Evaluation

（Propse for alterations and improvements）

➢ First Evaluator：Person in Charge of Project

➢ Second Evaluator：Project Manager

➢ Third Evaluator：Sector Manager

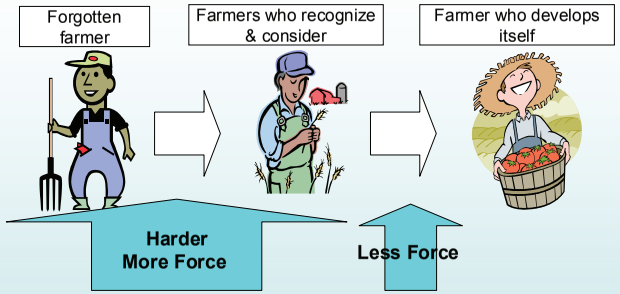
Proposal for the Evaluation Table

- Mostly used DAC5 parameters are "Relevance", "Efficiency", "Effectiveness", "Impact" and "Sustainability." However, this requires technical knowledge and training in their preparation, so do not use it.
- For the evaluation must be in mind DAC5 parameters and assess the project results indicators as proposed in the Project Profile.

Basic Componente:
Capacity Strengthening of rural and agricultural development facilitators

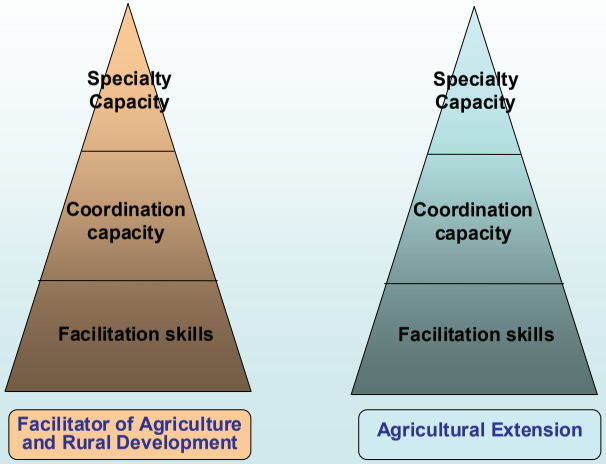
1
1

Necessary capacity of the facilitator to support for farmers



2
2

Comparison of the necessary capability between Facilitator and Agricultural Extension



3

Proposed basic guidelines

- Necessary Activities for the Training of Trainer -

Operation System

1) Continuing Education (Scheduled)
   - ⇐ Central, Regional and Provincial MAGAP
2) OJT (on the job training)
   - ⇐ ASA Technical MAGAP
3) Regional Training
   - ⇒ Establishment of Facilitator Network
   - ⇒ Facilitator Regional Technical Meeting
4) Self-Learning

4

Educación permanente (programado)

Objective: Continuing education (scheduled) of the facilitator, especially ERAs Facilitators, who provide support to farmers.

Coordination Body: Central, Regional and Provincial MAGAP

Cooperation institutions: Provincial and Cantonal Governments, Institutions concerned with MAGAP, Universities and other educational institutions, NGOs, etc.

Beneficiaries: ERA's Facilitators, and potential participants as facilitators and extension of other institutions, such as Provincial & Cantonal Government, NGOs, etc.

5

Sample of Facilitators Training Program

Issues to be learned and understood	Basic Capacity (Field experience up to 2 years)		Practical Capacity (Field experience up to 12 years)	
	Class	Practice	Class	Practice
Specific Capacity	Introduction to agriculture and animal husbandry	Preparation of a sample cultivation schedule	Technical training based in each field (Ex. Labor saving techniques, high quality articles production, gender)	Practical training based in each field (Ex, results of experiences evaluation, sales strategies, reactivation plan)
	Environmental management	Elaboration of natural resources map		
	Rural development	SWOT, PRA, ECA		
Capacity of coordination	Policies	Elaboration of the Annual Operative Plan (AOP)	Elaboration of the future vision of the community	
	Dissemination methods	PCM problem analysis, practical workshops	Resolution of problems with dissemination methodology, logical framework	
Capacity of facilitation	Facilitation from an improvement approach	Improve dialogue capacity with conversation practices	Improve capacity to solve problems through dialogue practices	

Regional Capacitation

1) Establishment of Facilitator Network

- Exchange of information and technology
- Coordination of Activities between the institutions
- Collaboration with other institutions

2) Regional Meeting of the Technician and Facilitator

- 1 Or 2 times per year.
- New techniques to promote the extension
- Presentation of successful projects
- Development, validation and monitoring of tecniques in the site

7

Annex 3

Diagnostics of Institutions Supporting for Small Scale Producers

THE STUDY
ON
THE PLAN OF REORGANIZATION OF
THE AGRICULTURE SUPPORTING SERVICES,
COPING WITH POVERTY ALLEVIATION
FOR RURAL PEASANT IN MOUNTAINOUS AREA
IN
THE REPUBLIC OF ECUADOR
Annex of the Final Report

Annex 3

Table of Contents

ANNEX 3: Actual Situation of Institution supported Small-scale Farmers

"Collection and Analysis of Materials and Information: Nationally and by Provinces"

1. INTRODUCTION

1.1. Geographical location of the Sierra Region

The Sierra includes the provinces: Carchi, Imbabura, Pichincha, Cotopaxi, Tungurahua, Chimborazo, Bolívar, Cañar, Azuay & Loja. It is framed by the Eastern and Western Andean cordilleras, which come together at various points, boxing off the Interandean Valley and contributing to the complex Ecuadorian topography. Both the Eastern and Western slopes of the Andes, throughout Ecuador are made up of different valleys and micro-climates of great biodiversity richness. The rivers in the Sierra have relatively little volume until they get to flatter terrains in the Amazon basin or along the Pacific coast. They are not navigable but represent enormous hydroelectric potential which is sub-utilized. The Sierra has numerous volcanoes that while they give the landscape a particular beauty they also are a latent threat for the population. The economy in this region is based on agricultural production for domestic consumption, cut flowers for export, light industry, tourism, cash-flow from public administration and remittances from Ecuadorian emigrants. All of these items have been affected by the global economic crisis, especially the remittances. Azuay province and in particular its capital, Cuenca, in the South of the country have experienced relatively important levels of development based on the ceramics and rubber industries. Due to the great poverty in the South-central provinces, especially Chimborazo, Bolívar Cañar and parts of Azuay, tens of thousands of our compatriots have emigrated, causing serious social problems.

1.2. Agriculture System in the Sierra Region

Currently agriculture in the Ecuadorian Sierra is characterized by the *minifundio*, (more precisely what is today known as *microfundio*), reflecting great pressure on natural resources, precarious social organizations based on risk management of all kinds and great diversification in production. This diversification is dual-purpose: to guarantee on farm food security among campesino families and to take advantage of wholesale markets in cities to sell products with higher value added. The agriculture production systems of small holders in the Sierra require high labor and/or capital inputs and are based on intensive management of fertility replacement.

The generally non-favorable national context for family based agriculture, demographic growth and the intensification of labor and capital needs in agriculture systems bring about an ever more aggressive use of natural resources, generating a paradoxical dynamic: go up into the *páramo* (high altitude grasslands) to cultivate more land and go down to the city to combine agricultural activities with off-farm occupations.[1]

Small-holder growers with scarce or no means of production find themselves obligated to complement agricultural activities with other jobs. There are evident contradictions in this territory in permanent transformation: the altitudinally low parts of the Sierra have been somewhat abandoned, due to the lack of irrigation water and the competition of products from neighboring countries; the middle and high altitudes extend more and more into the páramo, due

[1] LACUOR, Marie. Mosaico Agrario. Paradoja de una agricultura minifundista de la sierra ecuatoriana. 2007.

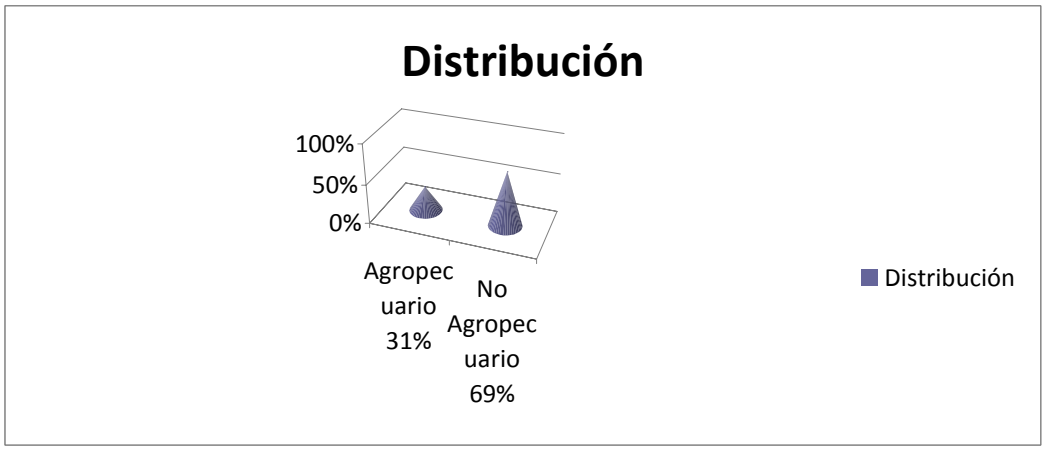
to the lack of land in the minifundio. Soon we will be in microfundio. Population growth and the water usage of intensive agriculture systems make these processes more and more acute.

1.3. Agricultural Potential

Ecuador has a total of ca. 26'079.600 hectares (ha), of which 12'355.831 are destined towards agricultural production, with 842.882 individual productive units. Agricultural lands are divided into:

TYPE OF CROP	LAND AREA IN HAS
Permanent Cropland	1'363.400 ha
Transitional cropland and fallow	1'231.675 ha
Idle lands	381.304 ha
Cultivated grasslands	3'357.167 ha
Natural grasslands	1'129.701 ha
Páramos	600.264 ha
Forests and scrub	3'813.140 ha
Other uses	411.180 ha

Fuente: INEC-MAGAP-SICA. III Censo Nacional Agropecuario, publicado junio 2002.



Fuente: INEC-MAGAP-SICA. III Censo Nacional Agropecuario, publicado junio 2002.
Elaboration: Author

Of the 842.882 Productive Units (UPAs) the greatest number, as regards farm size and ownership are those smaller than 1 ha.; while on the other extreme, UPAs larger than 100 ha are few but occupy 43% of cultivated land.

Size (ha)	Number of UPAS	Has occupied
Less than 1 ha	248.398	95.834 ha
1 - 2 ha	117.660	156.016 ha
2 - 3 ha	78.850	183.354 ha
3 - 5 ha	90.401	339.021 ha
5 - 10 ha	101.066	688.987 ha
10 - 20 ha	75.660	1'017.807 ha
20 - 50 ha	76.792	2'372.027 ha
50 - 100 ha	34.498	2'249.409 ha
100 - 200 ha	12.941	1'666.879 ha
200 +	6.616	3'593.496 ha

Fuente: INECC-MAGAP-SICA. III Censo Nacional Agropecuario, publicado junio 2002.

The uncontrolled expansion of the agricultural frontier, either for the creation of pasturage or for agricultural production equals the destruction of forests, páramos and other natural resources.

In spite of Ecuador's agricultural history it is continually losing importance as compared to other activities like mining, petroleum, construction and commerce.

Agricultural production for June, 2007 represented $ 2.345 million dollars of a total national GDP of $ 43.971 million de dollars. However, the majority of the economically active population for 2007 – 2008, more than 75%, depend on this activity although it represents around 5% of the country's total production.

The varied geography of Ecuador and its differing micro-climates and soils permit the production of tropical items like, cacao, coffee, sugar cane and oil palms on the one hand and maize, wheat, barley, potatoes, etc. However this potential is sub-utilized.

1.4. Agricultural Specialties of the Sierra

There is agricultural production up to 3.800 meters altitude and some potatoes are grown up to 4.000. Even higher is the páramo destined for cattle pasture.

Above 3.200 meters and due to the rigors of the weather, agricultural production isn't very good, but barley, potatoes and Andean tubers(塊茎) like ocas(ｵｶ：ｶﾀﾊﾞﾐ科の草本) and melloco are common.

Between 2.400 - 3.000 meters maize is grown in association with beans and wheat. We also find campesino cultivation of vegetables. This altitudinal range is the most populated and cultivated. Between 2.200 - 2.400 meters there is sugar cane, tree tomato and other fruits. Soil usage in the inter-Andean region is distributed according to the following table:

No.	CROPS	PERCENT
1	Grasslands	42,88%
2	Short cycle crops (potato, barley, beans, maize, vegetables)	38,26%
3	Permanent crops, fruit trees in tropics and in sub-tropics coffee and sugar cane.	18,86%

Fuente: INECC-MAGAP-SICA. III Censo Nacional Agropecuario, publicado junio 2002.

1.5. Seguridad Alimentaria

Alimentary sovereignty means the determination and supply of the population's food needs with base on the local and national production respecting cultural and productive diversity.

Small holder growers in the Sierra have this self-supplying capacity, first for the family, then the nearby community and last for the country. This is achieved through their autonomous control of their productive processes. With this capacity they guarantee their physical and economic access to nutritive food.

To maintain alimentary sovereignty growers have maintained their traditional practices and technologies that assure agro-biodiversity and local and national production. To not lose this ability, it is necessary to guarantee access to water rights, land, genetic resources (seeds and root stock) and the development of fair and equitable markets.

In practice, the best lands are used for export products, destruction of forests for the intensive extraction of timber and the contamination of rivers and oceans with industrial wastes. Our country is producing more for export and importing more to feed itself.

In spite of the fact that Ecuador is capable of growing food stuffs for all its nutritional needs and to export the surplus, not all Ecuadorians enjoy alimentary security.

Three of every ten children under 5 year's age suffer from malnutrition. Among the principal causes of death in children under 5 is low fetal growth and birth weights and caloric/proteic malnutrition[2].

Rafael Correa Delgado has retaken the theme of alimentary sovereignty and is fostering agricultural production as one of the bases of his government's platform.

1.6. Agricultural Production for Internal Consumption

Agricultural land area in the country is 12'355.831 hectares, and of this total just 13 products occupy 63%.

70% of the cultivable land in Ecuador is dedicated to pastures. The rest in the following two categories: 494.000 hectares for transitional crops and 1'363.400 hectares for permanent crops. Of this area only 10% is dedicated to products destined for the basic family food basket. (*Canasta Familiar*, government established mixture of foods considered normal healthy consumption for a family, also used to gauge the Consumer Price Index among other statistical uses).

65% of the products in the Canasta Familiar are grown on properties smaller than 10 hectares that represent some 77% of the total productive units. These minifundios are in the hands, mostly, of indigenous communities and campesinos in the Sierra.

Low agricultural production is a characteristic of semi-artisanal techniques, highly fragmented land ownership and very limited access to credit. However, its role in the generation of jobs is very important. Agricultural production for the domestic market constitutes an important driver for basic family incomes, it supplies 33% of the products that get consumed.

CROPS FOR DOMESTIC COSUMPTION	
PRODUCT	**PRODUCTION TM**
Wheat	11.966
Rice in shell	1'246.634
Potato	239.715
Barley	25.121
Soft dry maize	72.213
Hard dry maize	515.303

Fuente: INEC-MAGAP-SICA.III Censo Nacional Agropecuario, 2002. Vol. 1. P.107

1.6.1. Maize

Maize is the most important product for domestic consumption. There are 27 varieties and 18 that are grown in the Sierra. The varieties in the Sierra are known as soft and mealy.

[2] www.accionecologica.org, Elizabeth Bravo.

In Ecuador there are around 490.000 hectares, production is 2,6t/ha and it generates some 120.000 jobs directly. 54% of this maize is grown in the Sierra.

1.6.2. Wheat

Wheat is a main raw material for the daily consumption of Ecuadorian families. However, the production and production returns of this product are minimal.

National wheat production represents 1,6% of domestic demand and 98,4% of demand is met by imported wheat, especially from Canada and the USA.

1.6.3. Potato

This is one of the traditional crops in Ecuador, is grown exclusively in the Sierra and is the fundamental component of the population's diet. The harvest of this crop is nearly 100% destined to national consumption.

There are around 80.000 potato growers; potato farming occupies fifth place in land area after rice, hard maize, soft maize and soy.

80% of the potatoes are eaten fresh and the rest is industrialized either for starch, flour or processed potatoes.

1.7. Beef and Dairy

The land area of pastures in Ecuador has grown permanently until reaching 3'357.167 hectares of cultivated grasses and 1'129.701 of natural grasses. This process has even expanded to areas in the tropical jungles.

Currently the third part of the national territory is dedicated to some type of agricultural production and 63% corresponds to beef and dairy.

Beef and dairy in Ecuador is generally extensive to compensate for low productivity. Bovines are estimated at 4'500.000 head raised on 427.524 productive units. Of these 51% are found in the Sierra. More than half of this activity is carried out on medium and small properties[3].

The relation between supply and demand is very close. Per capita consumption is 6 kilograms per year.

1.7.1. Dairy

Milk production in Ecuador is approximately 7'100.000 liters per day. Of this total 73% is produced in the Sierra.

Of total 25% is destined to industry and 75% for internal consumption (49% for direct consumption and 26% for small scale cheese production).

2. Analysis and organization of information as to policies and plans for rural development in the country and in the provinces

2.1. Development Plans

[3] SICA – BIRF. Cadena Agroindustrial, Ganadería de Carne, 2001

With these plans the government is pushing increases in productivity and competitivity with emphasis on micro, small and medium size companies, investment in strategic sectors and jobs creation. There are also efforts to guarantee clean production that allows for sustainable development in harmony with the ecosystem, and the fostering of technological innovation to increase productivity.

As regards social equity and fairness there are efforts towards social and productive inclusion with bases in local development, strengthening the processes of a social and solitary economy.

Among the priorities is the development of the agriculture sector, beef and dairy, forestry, market access, plant and animal health and research projects.

In 2004 Executive Order 1372 created the National Secretariat of Planification and Development, SENPLADES, as the technical organization responsible for state planning, and in 2007 as their central line of work came the National Development Plan 2007-2010, which recovers a vision for the achievement of their concept **good life** (***buen vivir***) which is a central element of the Constitution of 2008, and implies the growth of personal liberties, opportunities and potentialities of human beings, and it proposes a new logic of planning based on 12 grand national objectives. Of these objectives, 6 are tightly related to support for rural small holders: i) Promote equality, social and territorial integration; ii) Improves capacities and potentialities of the citizenship; iii) Promote a healthy and sustainable environment, and guarantee secure access to water, air and soils; iv) Guarantee national sovereignty; v) Guarantee stable, fair and dignified work; and, vi) Work towards an economic system that is equitable and socially inclusive.

In 2007 the reactivation plan for the agricultural sector 2007 – 2011, with its challenge to focus on a sustainable development model, improvement of production, social development with equity and the conservation of natural resources, with a strategy that favors rural production covering diverse themes from agricultural zonification, alimentary security, institution building and services (investigation, training, irrigation, credit, reforestation), and prioritizes strategic crops and traditional elements of people's basic food needs and also monocrops of African oil palm, sugar cane, cacao, hard maize, rice, banana; beef and dairy, nontraditional export crops and all with an inclusive dynamic for growers of all levels.

Beginning the same year there have been significant advances in strengthening this planning principally from the Reactivation Plan in the Agricultural Sector (Fondo 2KR), Canasta Básica (basic needs food basket), Support for the National Plan of Agricultural Development and Plan Ecuador, that all have as a common denominator the strengthening of the agricultural sector while emphasizing competitivity and interinstitutional coordination amongst actors like MAGAP, INIAP, BNF, CFN, MIC y SENACYT (National Secretariat of Science and Technology).

In general there are sectorial and regional plans underway that are articulated and form part of the National Development Plan 2007 – 2011. The important thing is that these policies are executed, programs are complied with and projects are carried out with the goal of improving and elevating the living standards of all Ecuadorians.

This plan has overarching 8 strategies and tries to move forward its 12 objectives in human development. Apart from these points it establishes 94 goals, 118 policies and 600 specific strategies. The operation of the Development Plan is under the responsibility of SENPLADES.

Among the 12 points in the Human Development Plan it is noteworthy the efforts made to erase inequalities in gender and between ethnicities. The plan proposes the creation of policies to push social economies and local development. As to improving capacities the plan sets as goals the eradication of poverty and the improvement of education in the country. The goals are that 96% of the population has basic education and that illiteracy be eradicated during 2009.

3. Analysis and organization of information regarding programs and projects for rural agricultural development from the central and sectional governments

3.1. Programs and Projects of Agricultural Development

With the programs the hope is to support agricultural competitiveness to meet the market's demands with success and equity and so contribute to improved living standards for rural growers. Also, the hope is to contribute to guaranteeing alimentary security assuring the availability, stability and access to healthy food through the sustainable management of natural resources.

As regards existing programs and projects in the central part of the Ecuadorian Sierra, we see a diversity of initiatives that cover a great part of the policies formed in the constitution of 2008, the National Development Plan (PND) and state policies for the agricultural sector.

There is a proliferation of initiatives for linking growers to markets, competitiveness in inclusive business models that try to bring growers from different levels into a dynamic market economy, and through the programs Agricultural Competitivity and Rural Sustainable Development, CADERS, and Fostering Micro and Small Growers and Development Projects of the Central Corridor - PDCC, Plan Ecuador with productive chains, Development of the Production of Healthy Meats in the North of Ecuador, PROCANOR. On the other hand there are initiatives to foster internal demand for goods and services produced by micro, small and medium sized businesses, and for that they have implemented the Program Inclusive Social Businesses and Nutrifying Development. Further, these initiatives rescue the diverse forms of organization of production as set forth in the current constitution (Art. 319).

In Ecuador, policies as regards integral rural development are led by MAGAP, MIES, BNF, INIAP and MCDS, through their programs for Territorial Rural Development, PRODER; Implementation, strengthening and improvement of irrigation systems nationally, Fertilizers, Socio Siembra, Rural Development of Northern Ecuador, Andean grains and cereals and recuperation and fostering of wheat farming.

As to food sovereignty as described in the new constitution (Art. 281) there is work being done in coordination with MAGAP, MIES and FAO, through the national program for food security and sovereignty and the Project for Alimentary and Nutritional Security, PROSAN.

Respecting policies for norms and systems for food quality and innocuity in agriculture, as being carried out by AGROCALIDAD (formerly SESA) they have implemented national programs for the eradication of foot and mouth disease, control of brucellosis and bovine tuberculosis.

As for policies regarding financing, investment and the use of insurance in agriculture they have continued with conventional credits via the BNF, with their various lines of credit, ordinary, 5 /

5 / 5 and micro, for funding the legalization of land titles, loans for those affected by the eruption of the Tungurahua volcano. There are also the Program for Rural Financial Services Northern Sierra Trust, Pichincha Funds of MAGAP, INECI and FINANCOR. It is worth underlining that many initiatives of the popular and solidary financial sector that are given incentives in Art. 311 of the current Constitution do not exist, and the same situation was found in the rest of programs and projects in the central region.

Policies regarding investigation and technology transfer are led by INIAP and SENACYT through the Program of Strengthening of INIAP, research projects of SENACYT – regarding food security and competitiveness.

As refers to policies for the management and conservation of natural resources described in the current constitution in the regimen of good living (*buen vivir*) we find the Unit for Forestry Promotion and Development of Ecuador – PROFORESTAL, the project for adaptation to climate change though effective management of water and the Program in Support of the Decentralized Management of Natural Resources.

Policies regarding the obtention of land titles and the legal regularization of rural land mentioned in state policies for agriculture and in Art. 282 that express that the state will regulate the use and access to land that should comply with its social function and Art. 334 where the state will promote equitable access to the means of production, are being developed by the Executing Unit MAGAP – PRAT, through the program National System of Management and Information on Rural Lands – SIGTIERRAS.

At the general level there is weak intervention through these programs and projects for the development of agro-industry, markets and commercialization systems. The same situation is present with the policies regarding production and markets. There is a lack of dissemination of the information.

3.2. Local Development

In Ecuador and particularly in the Sierra, there are cases of local development that have implications for public policy and the actions of civil society.

Local development is understood fundamentally as economic and promotes the active participation of local actors in function of benefitting from and improving existing resources with efficiency to achieve competitiveness.

In the country this theme of local development is associated with state decentralization, citizen participation and democratic governance, showing itself to be flexible at adapting to canton and parish instruments.

In many cases local development adopts a vision from the municipality and in other cases there are standout local governments that achieve real change and in still other cases there are examples of development from the third sector, or projects that get their strategic orientation from international cooperation.

Through different proposals of local development have come alternatives for creating new alliances between the state and civil society, and also there are other alternatives that posit the redefinition of intermediate areas or regions.

Results from these efforts are shared by various actors in each case, but overall it is the involvement of local grassroots organizations, quality of technical services given by the NGOs and the capacity of some local authorities; these are results where distinct associative efforts are combined.

These efforts combine multiple factors: production, organization, institutions, methodologies found in the borders between sectorial issues and integral issues, between the particular and the collective between the public and private spheres. It is understood that this is a new dimension in the public arena and not state centered management of natural resources and territories.

What is certain is that in each canton and parish we have found different tangible results such as: an active citizen's participation in decision making; many have strategic development plans; have diversified their activities to include productive activities; membership based collective organizations; management of the environment; institutional growth in municipalities and in parish boards; capacity to obtain and mobilize resources for projects; some municipalities have focused on corporate organizational models and management procedures for the delivery of goods and services; some municipalities are exploring a kind of "development niches" by recognizing their cantons potential: Cotacachi for example works with ecology and citizen's participation, Pimampiro in the management of water and watersheds, Tabacundo with irrigation, Otavalo with tourism and interculturalism, Nabón with agricultural productivity, Alausí with the management of the Río Chanchán watershed and Salinas de Bolívar with business and tourism management. Finally we observed that the different experiences of development have generated demands to increase the supply of training and the formation of human resources.

4. Analysis and organization of information on laws, rules and support systems for agriculture oriented to small-holders in Ecuador at the central and sectional levels

4.1. Decentralization

As part of government decentralization began at the beginning of the 1980s, from the central government there are various programs and sectoral projects that, at the canton level, encourage practices of natural resource management and to induce municipal models of service provision: *i.e.* municipal water companies, departments of environment and steering committees for watersheds and project execution entities.

In June 2001 the Decentralization Plan was approved that establishes areas of competence to be transferred from the central government in 11 fields: planning and general administration, territorial organization, public services, education and culture, health, social welfare, transport and communications, natural resources, environment, production, employment and economic infrastructure. This plan contemplates and operations plan that must be executed by the government commission on decentralization, the National Council of Provincial Councils, CONCOPE, and the Association of Municipalities of Ecuador, AME.

The Ministry of Agriculture, Cattle, Aquaculture and Fisheries, MAGAP, with the support of the Interamerican Development Bank began the program of institutional decentralization, transferring 17 areas of competences to the Provincial Councils. As intermediary of the National Commission of Water Resources in that time, they began the progressive transfer of irrigation systems to users' groups and the creation of the respective Watershed Committees.

For their part, the Provincial Councils in March 2001 signed an agreement to transfer a package of responsibilities with the ministries of agriculture, environment, tourism, public works and communications and the CONAM (National Council on Modernization), that included a three phase process: provincial diagnosis of competences, agreements between provincial prefect's offices and municipalities and direct negotiations with the central government. There are various agreements as to power-sharing and collaboration on public works between these governments in the provinces of Pichincha, Chimborazo, Bolívar and Los Ríos with shared work plans and schemes for cooperation with the aim to potentiate the technical and operative capacities of the different institutions involved.

However, the same cannot be said as to the agreements for transfers of responsibilities from the Ministries; where they have transferred the responsibilities they have failed to transfer the resources and technical personnel required.

It is important to mention that also the ministry of Social Welfare and in coordination with the Council of Nations and Peoples of Ecuador, CODENPE, with a loan from the World Bank and a donation from the International Fund for Agricultural Development, FIDA, they executed the Project for Development of the Indigenous Nations and Peoples of Ecuador, PRODEPINE, that promotes initiatives of local development through this NGO with a decentralized approach and with the aim to strengthen indigenous and afroecuadorian organizations.

Similarly, with a loan from the Interamerican Development Bank they executed the Our Kids Project (*Proyecto Nuestros Niños*), that subcontracted the provision of services and attention to children including 10 municipalities. The Project Sustainable PEROLOCAL today called PRODER with a loan from the World Bank and a donation from the European Union is carrying out activities in support of rural production, a rural financial system and institution building in the rural cantons with mestizo populations and the greatest poverty.

Decentralization is understood without the elimination of the central government's role. In the constitution of 2008 the central and sectional governments' roles are integrated with a preponderant position for the central government in some competences, and it will also have an orienting role, but the majority of responsibilities will fall on local governments.

The new constitution indicates that plans made by sectional governments must be in accordance with national plans.

As for the conformation of Provincial Councils, they will be made up of representatives of the municipalities and the Municipal Councils will have representative from their respective parish boards. This is to help the different levels of government work in concert, in coordination and complement to each other.

One important change is the definition of the intermediate levels of government. The Provincial Councils no longer have the function of coordinator between the central and local governments, nor does it have the competences that the municipalities do. The redefinition of its role as a function of its region is remarkable (Art. 244 -246).

Today we speak of regions that are comparable in capacities and possibilities for development to help stop the imbalances. The regions will be formed by the grouping of two or more provinces, which must have a land area greater than 20.000 km2 and a population of at least 5% of the country's total.

It will be SENPLADES, National Planning and Development Secretariat, who will propose the formation of the regions, but only after 2 presidential periods or 8 years.

Another important aspect is the reconfiguration of local power, including a redefinition of the role of the municipality and the power of the rural parish boards. Municipalities will see their number of responsibilities increase, especially those shared with the central and regional governments, given that the municipality will be the principal actor of state politics. The rural parish board (*La Junta Parroquial Rural*), on the other hand, will obtain important responsibilities with which they will become in effect, small municipalities. Parish boards also take on decentralized responsibilities and must supervise and demand that public and private works are done according to standards and norms.

Yet another element to consider regarding the new constitution is that indigenous and afroecuadorians con now build Territorial Circumscriptions (CTI-A).

It is important to keep in mind the obligatory and progressive character of the decentralization laws for all levels of government (Art. 239). The idea is that all must work towards the same goals, in similar conditions, with the same responsibilities, even if at different speeds, in the near term.

They have bet on a degree of decentralization never before seen in Ecuador. The majority of government responsibilities (education, health, housing, production, etc.) are shared between levels, the central government will give the general standards meanwhile the sectional governments will be the actors.

4.2. Development Policies for Ecuadorian Agriculture

The agricultural sector has traditionally been abandoned by state politics. The government through the MAGAP, has designed policies for the sector, but these are still in their implementation stage.

In spite of this, the sector keeps a certain logic, on the one side the large scale agriculture for export that has always had state support and on the other, subsistence agriculture that receives little or no state support and is kept alive thanks to private initiatives and popular ingenuity. It is from these small and medium sized production units that the domestic market is supplied.

The document on state policies for Ecuadorian agro 2007-2020 does not mention strict goals but hopes that the relevant actors in the sector will be in agreement with the government and that in 10 years they will make the sector productive socially inclusive, respectful of solidarity and competitive, guaranteeing above all the country's alimentary security.

The responsibilities of the (MAGAP) have grown given the realization that there is much inter-relation between the cultural activities of agriculture and natural resources (fisheries, fish farming, forestry and forest management).

To implement agro policies with immediate actions, the taken apart ministry (as defined by some of its functionaries) will not reassume the role of technology transfer, because of high costs and long implementation times. This has been passed on to the Institute of Agricultural Investigations (INIAP), and organization that is in charge of investigation into productivity solutions and the production of certified seeds for important crops.

It is hoped that MAGAP will reacquire its technical level and general competence with young human resources, because the average age among MAGAP functionaries is above the established limits.

With the suppression of budget item lines, their operating capacity has dropped from 14.000 employees to 1.400 to attend the entire country. There is more administrative personnel than technical and the Ministry has become a regulating agency and not one that gives service to growers; this is due to an institutional reorientation.

Farm production units surveyed in 2000 show that only 6,8% received technical assistance, 7,4% with financial credit and 3% were connected to some kind of economic organization or cooperative and a high percentage of minifundios do not have legal land title.

With Ministerial Agreement No. 1419 on 18 May, 2006, the State Policies for The Ecuadorian Agricultural Sector 2006 -2016 were decreed.

Similarly, with Ministerial Agreement No. 193 on 28 June, 2007 the Center for Studies and Policies for Agro, CEPA, was created with the purpose to implement, coordinate and evaluate the application of the current state policies 2007 – 2020.

CEPA will be in charge of 4 strategic themes for the success of Ecuadorian agro with social emphasis:

1. Commercial negotiations
2. Sectoral Information
3. Agro productive chains
4. International Cooperation

4.2.1. Development Strategy:

- PRINCIPLES:

  Sustainability, Equity, Honesty,

- VALUES:

  Cooperation, Innovation, intercultural relations, governability.

4.2.2. Vision of the Ecuadorian Agriculture Sector:

For the year 2020, the agriculture sector must be mutually solidary, productive and competitive guaranteeing the country's alimentary security, inserting itself in world markets, producing differentiated goods and services of high quality, creating value added with economic returns, social equity, environmental sustainability and cultural identity.

4.3. Mission of the Ecuadorian Agriculture Sector:

The Ecuadorian agriculture sector operates like an important motor for the development of the country, producing food, goods and services for both domestic and export markets with capacity to adapt and insert in the world market, on the basis of concerted public-private processes between union or guild, cooperative growers' organizations that are strengthened and efficient institutions that improve the quality of life of the population and its rural communities.

4.3.1. Analysis of the strengths, opportunities, weaknesses and threats, SWOT, of the agricultural sector

STRENGTHS:

- Export capacity
- Strategic geographic position
- Agricultural vocation
- Public-private alliances for market access in products such as banana, cacao, flowers, broccoli, among others
- Generator of rural employment
- Entrepreneurial spirit in private sector and recognition of the value of linking with industry and exporters
- Adequate physical integration of country
- Sector highly participative in national development

OPPORTUNITIES:

- Commercial openness, trade agreements
- Increasing demand for differentiated products
- Resources available from international cooperation
- Investment from emigrants' remittances

WEAKNESSES:

- Absence of strategy and planning
- Weak institutions both public and private
- Low level of associativity
- Low investment levels and scarce financing
- Low productivity and quality
- Lack of demand oriented development and information management
- Infrastructure
- Commercialization systems
- Human resources
- Weak investment in investigation

THREATS:

- Competition from similar products
- Natural disasters
- Political and judicial instability
- Market distortions

State policies for Agro in Ecuador 2007 – 2020 is converted into 12 mandates or sector policies:

1. Strengthening of both private and public institutions
2. Development of agro-industry, markets and communications systems
3. Integral development of indigenous, afroecuadorian and montubio nationalities as well as farmers generally
4. Associativity in commercial chains and in territories
5. Norms and systems for food safety and health in agro
6. Financing, investment and use of insurance products for Agro

7. Production and markets: spreading of information
8. Investigation, technology transfer and learning processes
9. Management and conservation of natural resources
10. Obtention of land titles and regularization of lands
11. International cooperation for the development of Agro
12. Support to sensitive products in Agro

With three overarching themes:

1. Reform of the legal framework

2. Improvement of infrastructure services both socially and for agro

3. Sustained participation in organizations and education as communicated fact

As to the institutionalization in Agro:

1. The National Irrigation Institute, INAR, was created to oversee the improvement of irrigation systems and to include irrigation for some 80.000 new agricultural hectares.
2. The forestry corporation, PROFORESTAL, was created.
3. Resources from CEREPS of around 8 million dollars were transferred to INIAP to help strengthen investigation in agro.

The agricultural sector is fundamental in Ecuador, because it forms the basis for the development of rural areas and also contributes importantly to the national economy.

Other important step has been the elaboration of the National Agriculture and Animal Husbandry Plan as a mechanism to implement state policies, the same that have as their main objective the zonification of crops and products based on soil and micro-climate capacities and the possible advantages to improve the economic performance of farmers.

The law is a norm approved by the national congress, now replaced by the National Assembly and generally supported by the President of the Republic. It can be an organic law or an ordinary law. They are organic when they regulate the organization and activities of the legislative, executive and judicial functions; the autonomous sectional regimen and the organisms of the state.

Ordinary laws are all others and are of a lower hierarchy than organic laws.

In Ecuador there have been some 135.000 laws passed including supreme decrees, executive decrees, norms, rules, ministerial agreements, municipal ordinances. Of these some 71% remain current although much of them are not applied for lack of codification or because the political will is lacking to enforce them.

4.4. Agrarian Development Law

The agricultural sector functions, since 1994, under the normative of the Agrarian Development Law that constitutes the judicial framework that orients productive activities in agro, animal husbandry and agro-industry. It is necessary to regiment and update the normative laws within this framework to achieve a true sustainable development of this sector and rural development.

The National Institute for Campesino Training, INCCA, was created to see to the needs of training and technology transfer and has had good results.

The law for Fostering Agricultural Development in its art. 54, says that it is the fundamental duty of the national government to promote campesino business organizations in recognition of their direct action. It also indicates that the national government shall promote the effective participation of the campesino population through their respective legally established commercial organizations, in the elaboration, execution and evaluation of programs and projects for agricultural development. In the same law it is indicated that MAGAP will strengthen the organization of agricultural cooperatives, communes, associations and other organizations come together to sell and give value added to agro products.

In consequence, there are abundant laws in the country for the agricultural sector, and so it is wished that the agriculture centers, which function very little or not at all, group together farmers by product, the same that is done by associations so that they can discuss their common interest and confront problems together via consensual proposals.

There are organizations without specialization, and even some that have become politicized and do not give any services to their members. These organizations with lost vision do not have financial resources either nor the technical staff necessary to respond to problems efficiently.

4.5. Special Law for the Distribution of 15% of the Central Government Budget to the Sectional Governments

In its art. 3 this law institutionalizes the use of this fund: that the Provincial Councils and municipalities must invest the monies in plans or projects in economic, social and cultural development. It also says that they will put in place plans and projects destined towards improving standards of living for the least developed sectors. Equally, the codification, art. 4, for the use of these funds indicates their use must prioritize investments in economic, social and cultural development.

The municipal legislation is less precise than the provincial as far as the attributes of the municipalities as promoters of local development, and their responsibilities are somewhat ambiguous. It can be interpreted that the municipal functions recognized in Chapter II, Art. 12 of the law Municipal Regimen, especially regarding planning, do in fact call for the physical development of the canton and that the primordial functions assigned in Art. 15 with the responsibilities over potable water systems, sewers, management of wastes and the promotion of tourism, are indirect ways of creating favorable surroundings for local development in rural areas.

In the same law, Title IV, referring to physical and urban planning and public works, can also be considered as favorable to push development strategies throughout the canton's jurisdiction.

Title III of the same law on the municipal administration, en Chapter I on its functions, specifically Art. 194, permits the creation of public enterprises for the delivery of services. Paragraph 3 of Art. 203.1 authorizes the investment of resources to constitute, together with private investments, mixed economy companies for the delivery of new public services, to improve services already on offer and or begin other activities that are in agreement with the overall goals of the municipality.

4.6. Sectional Regimen Law

This law created the Sectional Development Fund (FODESEC), though which monthly transfers are automatically made to the municipalities. In Art. 1, Chapter I, of Title I, municipalities are permitted, with the help of the central government, the formulation, approval and execution of

development programs and works considered priorities for the respective municipal councils in urban areas, peripheries – urban and rural; that shall be complementary to technical assistance programs and training that is ratified and amplified in Art. 5, that aims to raise the management capacities of the municipalities.

4.7. Organic Law for the Rural Parish Boards (Juntas Parroquiales)

In chapter II, Art. 4, as to the attributes of the parish boards, between numbers e - u, it is established that in coordination with the municipalities, provincial councils and other state organisms, the parish boards should plan, budget and execute development policies, programs and projects with citizen participation for the progress of their territorial circumscription within all areas of their competence: health, protection of the family, popular promotion, environment, natural resources, tourism and popular culture.

In Art. 5 of the competences of the parish boards it is established that they must supervise and demand that public works and those done by NGOs comply with technical specifications as to quality and quantity in given times planned. In Chapter IV of this same law, Art. 21, the principal instrument of these boards is the annual Parish Development Plan, coordinating the execution of the work with the sectional and central governments.

In summary there are more than 22 legal texts that directly mandate as to the decentralization and local governments beyond other legislation that is indirectly related with sectional governments and the management of natural resources that are disperse in Ecuadorian legislation.

In the Ecuadorian legislation we find a juridical contradiction respecting the functions between the provincial councils and the municipalities. The provincial councils have explicit legislation as to their role in local development, however in practice there are few experiences of this development worth mention, apart from road and highway work of course done in partnership with the municipalities.

The municipalities on the other hand, in spite of not having explicit legislation as to their role in local development, have begun initiatives in agricultural production, environmental services, irrigation and in tourism in rural areas that are in a sense, opening roads into local cantonal development.

One commentary that is worth making is that it appears that legal frameworks for decentralization are made without considering local processes, and at the same time local processes of development do not necessarily fit together with national procedures.

The provincial councils have attributes in rural areas but also work in urban areas, and the municipalities have jurisdiction in urban areas but stretch into rural areas too. Parish boards do not have clearly defined competences and confuse their jurisdictions with those of the municipalities and the provincial councils.

The laws, rules, ministerial agreements and ordinances should be mutually complementary, taking as reference point local experiences. They should not be formulated as isolated texts thinking only about the quality of the procedures without considering the institutional implications.

4.8. Strategic Development Plans

Some provincial councils have named themselves Provincial Governments (*Gobiernos Provinciales*), and they are characterized by their openness to incorporate initiatives and projects of grassroots organizations, from the municipalities and the rural parish boards in items such as road building, infrastructure, irrigation, tourism, services; and to push initiatives in participative provincial planning.

The provincial council of Cotopaxi stands out as they elaborated the first "Participative Development Plan for Cotopaxi". This plan gets to the level of the rural parishes and identifies 8 strategic areas en the social, economic and environmental fields. We also have the experience of the provincial government of Chimborazo, with great citizen participation in decision making. The provincial government of Imbabura, based in the capitalization of the plans and proposals taken up from cantonal assemblies and then elaborated in provincial assembly "Strategic Development Plan of Imbabura".

The provincial government of Imbabura has a comparative advantage, within its jurisdiction there are 4 cantons that already carry out an adequate management of their natural resources and with whom they have made favorable institutional alliances.

The municipalities that have a strategic development plan are characterized by their entrance into local development connecting the country with the city, modifying the relations between the local government and civil society. This type of municipal management tends towards inclusive public participation in the different strategic areas that integrate the adequate management of natural resources in the territory through efficient municipal services.

The following table shows the more innovative sectional governments of the Sierra. This same group has formed a Coordinating Body of Alternative Local Governments (*Coordinadora de Gobiernos Locales Alternativo*).

Gobierno	**Lugar**	**Membrecía**
Provincial	• Imbabura • Pichincha • Cotopaxi • Bolívar • Chimborazo	Coordinadora de Gobiernos Locales Alternativos
Municipal	Tabacundo, Pimampiro, Guachapalá, El Pan, Gualaceo, Chordeleg, Santa Isabel, Paute, El Ángel, San Golquí, Cuenca, Macará, Calvas, Puyango, Saquisilí, Guamote, Colta, Cotacachi, Otavalo, Suscal, Cayambe, Guaranda, Echeandía, Las Naves, Alausí, Saraguro, Sigchos, Pallatanga, Cumandá, Nabón, Girón, Patate.	Coordinadora de Gobiernos Locales Alternativos

Fuente: Elaboración propia, entrevista a funcionarios y autoridades locales

5. Organisms and institutions of agricultural support oriented towards small holders and the services they provide

5.1. OG

5.1.1. MAGAP

There is evidence of the progress on the National Agriculture Reactivation Plan 2008-2011, the same which fits into the National Development Plan with a total investment by MAGAP of over 57 million dollars (US$ 57.436.638,58).

Similarly, programs for fiscal investment, the emergency flooding projects and planning, additional projects for nurseries, and the training and subsidies in agricultural inputs that have benefited the most vulnerable sectors of the population in all of the country's 24 provinces.

The institutions have been strengthened as well as the international cooperation. There is good work being done by each one of the sub-secretaries and institutions that MAGAP is responsible for (**INIAP, INCCA, INAR, CNDP, INDA, AGROCALIDAD, INP, UNA y PROFORESTAL).**

5.1.2. INIAP

INIAP responds to the national agriculture development plan

INIAP was created in July, 1959, and during its 50 years has been the institution in charge of generating, validating and transferring appropriate technologies, oriented to increasing production and the productivity of the systems used by small, medium and large growers. It has promoted the adequate use of soil, water and forest resources and also has promoted the rational use of natural resources and respect for the environment with the aim to contribute to the sustainable development of the agriculture sector.

To comply with their objectives INIAP works with 7 experimental stations, strategically located in the three regions of Ecuador. These stations are divided between technical and administrative units. The technical units run programs that are oriented fundamentally to the genetic improvement for the obtention of new varieties of vegetable species and they have support departments with their respective disciplines and laboratories; they also have technology transfer units in diverse provinces of the country.

5.1.3. INCCA, National Institute of Campesino Training

This is the entity dedicated to training and technology transfer in the rural sector of Ecuador. Their mission is to provide knowledge and skills in agro-productive and agro-industrial activities. All of this to contribute to the modernization and social, economic and environmental development of the agricultural sector.

Amongst their strategies we can find: Training plans, formation of trainers, marketing and organizational strengthening and technology transfer related to productive projects, the search for strategic alliances and coordination with public and private entities.

The training services they offer are realized according to demand and in harmony with sectorial and regional priorities in relation to the end user and to give opportunities to small and medium growers.

5.1.4. INAR, National Irrigation Institute

INAR leads integral irrigation and drainage management at the national level through sustainable politics, norms, actions and activities focused on providing and implementing alternatives for the consolidation of agricultural production.

It has carried out sustainable projects with scientifically innovating tools, and it has a qualified technical team that guarantees compliance with the guidelines set forth by the national government for the benefit of the agricultural sector.

It is a public service institute that executes its national irrigation and drainage plan and fosters the efficient use of water resources with technified systems at the level of the farm parcel.

INAR is a key factor for increasing development of agricultural activities, achieving better living conditions for the population and guaranteeing their alimentary security, with technical assistance for irrigation users, quality service and cutting edge technologies.

The new constitution which recognizes the rights of mother nature (*Pacha Mama*), declares water to be a strategic national patrimony; and access to water is elevated to the status of a human right.

5.1.5. INDA, National Institute for Agrarian Development

INDA is a public entity of national scope with legal standing and its own patrimony, and is responsible to the Ministry of Agriculture and Animal Husbandry, MAG. It was created by the law for Agrarian Development on 14 June, 1994.

Article 26 of the codification of the same law gives INDA the following attributes:

• Give property titles to persons and legal incorporations that are in possession of rustic lands and having shown their rights to those lands don't yet have land title.

• Grant lands that are in its possession.

• Declare the expropriation of lands that meet the legal causes for that action.

• Realize and maintain a registry of rural lands in coordination with the general directors of property registry and appraisals.

• Carry out the process of integral agrarian reform.

Principal activities

Land Titles

INDA through its district offices, provincial delegations and technical administrative units, shall implement the orders for granting lands with the purpose of facilitating land titles which are the right of persons in possession of lands. To achieve equity in the title granting process, the rights of men and women will be guaranteed. Land titles are contemplated that lands of communities or ethnic groups that are in ancestral possession, within a framework of sustainable environmental management and recognition of their culture.

Agrarian land registry

In chapter IV Article 26 ATTRIBUTES OF INDA, letter d. It is their responsibility to make and maintain a registry of agricultural lands that allows for transparent institutional processing. This registry will be modern and national of all rural properties so as to dispose of technical and organized information as to the land grants given by the EX – IERAC and INDA.

5.1.6. BNF, National Foment Bank

Financial development entity, autonomous and legally private but with a social and public role. It was founded in March 1928, as the Mortgage Bank of Ecuador (Banco Hipotecario). In 1974 a new law created the BNF.

Its principle function is to promote the increase of production and the growth of the agricultural frontier and activities; develop small industry, artisan production, fishing, micro-enterprise, informal economic and commercial activities; via credit given to producers who do not have access to private banks due to the risk they represent and their lack of collateral. This bank gives loans with preferential terms that allow its capitalization while supporting the creation of jobs that redound on the better distribution of wealth and provoke the diversification of production contributing to the formation of new production areas.

One fundamental fact is that the Law for the Promotion and Guarantee of Investments and Citizen Participation (*Trole 2*) from August 2000, prohibits the pardoning of debts which was a recurrent tactic employed by many and even large farmers. Debt forgiveness was obtained politically at different times and left the BNF sub capitalized if not bankrupt.

In 2009 it is the bank with greatest coverage in the country and even in places far away from major population centers it has mobile offices, so becoming the only financial entity in many cases. The offices are interconnected and it has more than 400.000 clients between depositors and debtors.

5.1.7. AGROCALIDAD, Ecuadorian Agricultural Agency for Quality Assurance

The Ecuadorian Agriculture Sanitation Service has been reorganized as AGROCALIDAD, a public technical entity with patrimony and its own funds, deconcentrated with administrative, financial and operative independence. Its base is in Quito and it has competence at the national level. It is responsible to the MAGAP.

To comply with these attributes, AGROCALIDAD, can create administrative and technical units it deems necessary. It has the responsibility to fulfill the following functions:

a) Promote integrated systems in quality assurance in the diverse production chains in the agriculture sector so as to improve production, productivity and to guarantee alimentary sovereignty.
b) Develop technical support instruments for production processes that are oriented towards the satisfaction of national requirements and international competitivity.
c) Support the provision of quality agro products for the domestic and export markets.
d) Design, implement and promote Good Agricultural Practices as a norm that brings together the complex of techniques and systems that help guarantee

quality, and food safety while protecting the environment and the health of farm workers, integrating the diverse requirements of international norms.

e) Establish follow up and evaluation systems in the diverse production chains in the agriculture sector so as to include them in the Good Agricultural Practices.

f) Develop the procedures and requirements for accreditation of those responsible for the training, inspection and certification of the Good Agricultural Practices.

g) Train the population of Ecuador in the diverse themes relevant the norm Good Agricultural Practices.

h) Promote the effective and responsible participation of the population of Ecuador in the production and consumption of quality food.

5.1.8. PROFORESTAL

By Executive Decree No. 931 of 28 February, 2008, published in the Official Registry No. 292 March 11, 2008, responsibilities in the regulation, promotion, foment, commercialization and use of forestry plantations and their sustainable management with commercial purposes become assumed by MAGAP.

Executive Decree No. 969 March 20, 2008, establishes the creation of PROFORESTAL, published in the Official Registry No. 309 April 4, 2008, establishes the creation of PROFORESTAL, whose purpose it is to implement and execute the National Aforestation and Reforestation Plan (PNFR).

This plan contemplates planting a million hectares in the next 20 years, which equals an annual average of 50,000 hectares distributed nationally in three programs:

* Industrial and commercial plantations.
* Social and agroforestry plantations.
* Protection and conservation plantations.

The plan promotes the most ample participation of entities from the private and public sector through strategic alliances and under the clear concept win-win.

* Apply financial mechanisms that are adequate to our medium and that guarantee the correct use of funds.
* Develop, together with INDA, processes for the legalization of land that permit the reinsertion of campesinos in the countryside.
* Generate confidence in landowners and generate a forestry culture and knowledge as to the global benefits of forests at all levels of the Ecuadorian society.
* Improve the conditions of life of campesinos through the participation in the earnings of forestry generated by the plantations.
* Permanently manage strategic alliances with international organizations who provide technical and financial assistance.
* Recruit experienced and self-starting professionals for PROFORESTAL and develop in them an ethic of work and duty towards their obligations.

5.2. NGOs

5.2.1. Types of organizations

- **National NGOs:** Development organizations with private legal standing
- **International Organisms:** Multilateral, bilateral and nongovernmental organizations that work in Ecuador
- **Popular organizations:** Second and third degree organizations that represent diverse population sectors in the country on a zonal or regional scale
- **Church organizations:** Organizations of various faiths
- **Private companies organizations:** Linked to private national companies
- **Networks and forums:** Spaces for interrelation and discussion between development organizations and participants based on thematic subjects

TYPE OF ORGANIZATION	NUMBER		PROJECTS		SERVICES	
Organization No Gubernamental Nacional, ONG	511	75%	1.159	78,2%	1.072	76,7%
Organization Popular	62	9%	97	6,5%	139	10%
Organization International	53	8%	98	6,6%	88	6,3%
Organization de Iglesia	23	3%	92	6,2%	52	3,7%
Organizations de Private Enterprise	22	3%	35	2,4%	40	3%
Redes y Foros	14	2%	2	0,1%	5	0,3%
Totales	**685**	**100%**	**1.483**	**100%**	**1.396**	**100%**

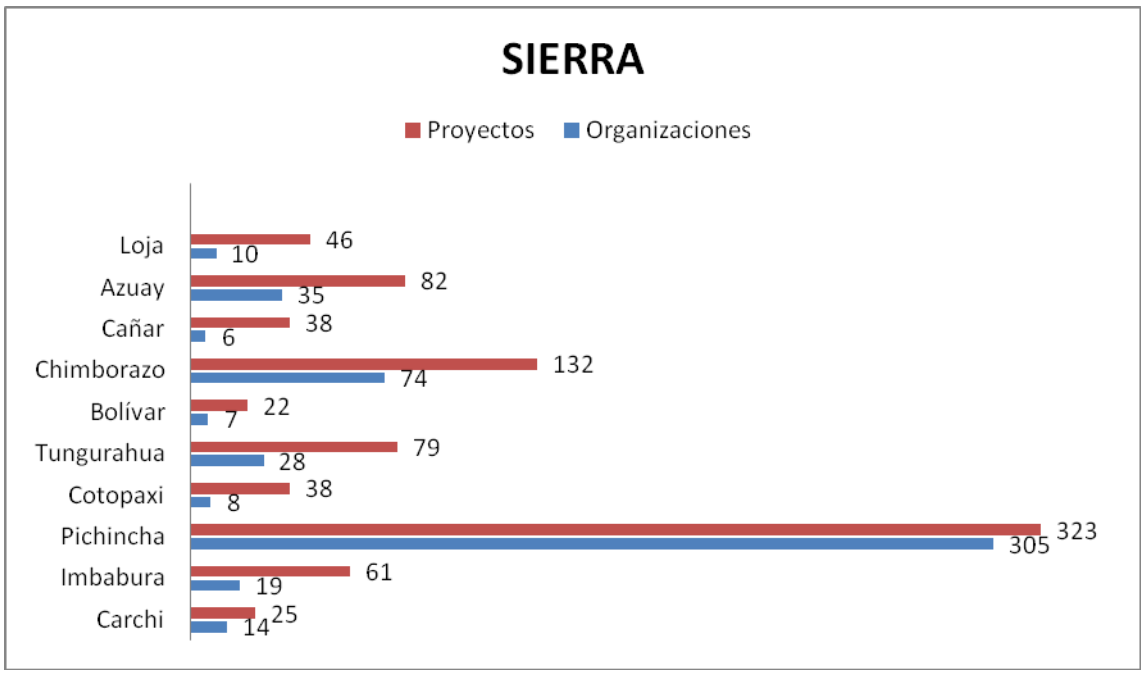
Fuente: Fundación Alternativa, Directorio Organizations Sociales de Desarrollo del Ecuador 2005.

5.2.2. Work sectors of NGOs

The most relevant work areas are in education, production and income generation, health, environment, civil rights and democracy building; and culture, art, science, technology and basic services also receive support but to a lesser extent.

5.2.3. Geographical coverage

Fuente: Fundación Alternativa, Directorio Organizations Sociales de Desarrollo del Ecuador 2005.



Fuente: Fundación Alternativa, Directorio Organizations Sociales de Desarrollo del Ecuador 2005.

5.2.4. Budget profiles

RANGE USD	ORGANIZACIONES	PORCENTAGE %
0 a 50.000	372	56,5
51.000 a 100.000	88	13,4
101.000 a 150.000	48	7,3
151.000 a 200.000	35	5,3
2001.000 a 250.000	22	3,3
251.000 a 300.000	10	1,5
301.000 a 350.000	7	1,1
351.000 a 999.999	76	11,6
TOTAL	**658**	**100%**

Fuente: Fundación Alternativa, Directorio Organizations Sociales de Desarrollo del Ecuador 2005.

One interesting fact is that state sources contribute 15%, international sources 26%, national social development organizations 9%, private enterprise 9%, and self-funding and economic activities of the NGO 41%.

Also, 79% of these recourses a non-repayable (grants) and 21% are as loans.

5.2.5. Institutional Capacities

Development management places great demand for professionalization in human resources within these organizations. Local universities are innovating programs and careers that focus on the requirements for social management, development communication, rural economy, management for local sustainable development, etc.

Financial controls in practice:

95% of these organizations keep accounting books. Audits are performed of 77% and budget controls are in effect in 88%.

5.2.6. Equipment:

Capacidad Instalada	SÍ	NO	NO ESPECIFICA
Computadoras	93%	7%	
Owns property	48%	47%	5%
Rents property	48%	50%	2%
Training classrooms	42%	55%	3%
Audiovisual equipment	33%	63%	4%

Fuente: Fundación Alternativa, Directorio Organizations Sociales de Desarrollo del Ecuador 2005.

Three methodological approaches of the NGOs were observed.

The first method corresponds to projects run by large NGOs, with bases in the administrative jurisdictions of the parishes or cantons that they consider to be their area of intervention. The second method are the medium to small size NGOs with specific projects, that while many times disperse, are executed within a province or a region. The third method are local natural resource management projects that are executed directly by indigenous campesino organizations.

If we look closely at the cases mentioned above of certain innovative municipalities in Ecuador, we usually find NGOs that give them technical, methodological and financial support. This is important as an example of the creation of public policies in alliance with civil society.

It is also important to realize that due to the novelty of this issue, the number of NGOs that want to establish links with a given sectional government has grown significantly.

5.2.7. Influence of international aid

International aid agencies also have agendas with a participative focus, participative self-help, environmental sustainability and democratization of local governments.

It is important to differentiate between Official Development Aid (AOD) and NGOs. The first comes from multilateral entities that operate through governments and whose contribution represents 18% of the development projects in the country. And the second operates through organizations of the civil society.

6. Analysis and organization of Sectional level information

6.1. CARCHI

6.1.1. Geographical coverage

Carchi is in the extreme North of the Interandean valley; between parallels 1° 12´43"[and 0° 21´50" North Latitude and 77° 31´36" and 78° 33´ 12" West Longitude. The relief of the terrain is strongly irregular and mountainous, and the provinces has altitudinal extremes of 1.200 meters in the area of the Valle, up to 4.768 meters at the top of the Chiles volcano. The III Agricultural census (2000), reflects that agriculture is the base of the province's economy representing the livelihoods of 42,8% of the economically active population.

Principle crops are: potato, dry beans, soft maize, fresh pea, onion, barley, wheat, lima bean, mellocos, avocado, hot pepper and fruits such as papaya and pineapple. As to animal husbandry there are bovines, horses, sheep, goats and pigs.

As for the small-holders from 1 to 5 hectares, they have 7,8% of the cultivated land areas, but represent 56% of the farm production units, UPAs, in the province.

6.1.2. Services

Small-holders have received assistance and technical-productive service from the government in the following: irrigation, credit, technology transfer, productivity, investigation, maintenance and improvement of species, productive-commercial infrastructure, reforestation, all of which have been implemented by the central government through its ministries and institutions: MAGAP, BNF, INAR, INIAP, MIES, AGROCALIDAD; the Provincial Government of Carchi and Municipal Governments (Tulcán, Montufar, Espejo, Mira, Huaca, Bolívar).

Beyond the support mentioned above, there have been programs and projects for agro executed by PRODER, PROLOCAL, PROFORESTAL, PROCANOR, PRODERENA, PROGRAMA NUTRIENDO DESARROLLO, PROSAN, PRODEPINE, Programa Negocios Inclusivos, PLAN ECUADOR, to name the most transcendental.

The work of the local governments is very diverse, but generally happens in isolated form and gives middling results, both for the duplication of similar efforts and for the different political directions they support.

With respect to the NGOs there are stand out organizations from the national scene like FEPP, COSUDE, CCF Ecuador, Heifer, Fundación Caritas, CESA, FODEMI, AGECI, Fideicomiso FECD, pndu, Fundación Jatun Sacha, CORSINOR and locally, ALTROPICO, FDS, AJUPRUC, COPOCCAR.

These institutions are managed in accordance with their own norms, principles and directions, however their work has been very significant for the strengthening of agro. The services they offer: Technology transfer, credit, productivity improvement, diversification, animal husbandry assistance, commercialization, organization building, food security, irrigation and organic production.

These NGOs have not taken their efforts to the population at large but rather have focused on the needs of specific sectors.

6.1.3. Impact

Carchi has 152.939 inhabitants, 87% mestizos, 3% indígenous, 5% white, 5% afroecuatorianos 45,9% in rural areas. Data from SIISE 2008 shows 12.859 UPAs in the province or 2,2% of the total in the Sierra, and of these 7.169 correspond to small holders (1 – 5 ha).

Combining the efforts of the government and the NGOs the coverage of assistance to these small-holders is significant both in the number of persons supported and in the range of services on offer: 60% of this demographic has received some kind of attention and support.

6.1.4. Principle problems and achievements

Efforts on behalf of agro have faced complications like: lack of economic resources, indiscriminate use of agro-chemicals, conflicts of interests between communities, contraband, emigration.

Even so these efforts have helped improve living standards of small-holders by:

1. Increasing productivity
2. Strengthening grass roots organizations
3. Incorporation of good and better practices in agro
4. Genetic improvement of animal varieties
5. Family and MIPYMES business startups
6. Associative commercialization
7. Improvements in irrigation infrastructure
8. Implementation of integral farms
9. Protection and conservation of páramos

6.1.5. Sustainability

These results must last in time and to that end different actors have begun processes to socialize their results with the aim to constitute a proposal on a larger scale where each one of the relevant actors can contribute.

If one intends to generate change it should be aimed at the youth, the majority of the population and the part most interested in change.

6.2. IMBABURA

6.2.1. Geographical coverage

Imbabura, geographically is in the Northern Sierra of Ecuador, and participating in the central-West depression of the Chota located between the knots of Boliche to the North and Mojanda-Cajas in the South. Topographical relief is irregular, and altitudes range between 600 meters on the Guayllabamba River and 4.939 meters at the peak of volcán Cotacachi. El III Agriculture Census (2000), mentions agricultural production as one of the principal commercial activities in the province with 25,9% of the economically active population involved.

Principle crops are: sugar cane, avocado, tomato, pineapple, papaya maize, beans, barley, wheat and peas. As to animal husbandry there are bovines, horses, sheep, goats and pigs. There is also a large poultry industry.

In Imbabura there are 28.170 hectares of páramo identified.

As for the small-holders from 1 to 5 hectares, they have 9% of the cultivated land areas, but represent 78% of the farm production units, UPAs, in the province.

6.2.2. Services

Small-holders have received assistance and technical-productive service from the government in the following: irrigation, credit, technology transfer, productivity, investigation, maintenance and improvement of species, productive-commercial infrastructure, reforestation, all of which have been implemented by the central government through its ministries and institutions: MAGAP, BNF, INAR, INIAP, MIES, AGROCALIDAD; the Provincial Government of Imbabura and the Municipal Governments of (Ibarra, Antonio Ante, Cotacachi, Otavalo, Pimampiro, Urcuquí).

Beyond the support mentioned above, there have been programs and projects for agro executed by PRODER, PROLOCAL, PROFORESTAL, PROCANOR, PRODERENA, PROGRAMA NUTRIENDO DESARROLLO, PROSAN, PRODEPINE, Programa Negocios Inclusivos, PLAN ECUADOR, to name the most transcendental.

The work of the local governments is very diverse, but generally happens in isolated form and gives middling results, both for the duplication of similar efforts and for the different political directions they support.

With respect to the NGOs there are stand out organizations from the national scene like FEPP, Vision Mundial, COSUDE, CCF Ecuador, Heifer, Fundación Caritas, CESA, FODEMI, AGECI, ded Ecuador, pndu, AVSF, CORSINOR, Xaxa de Consum Solidari and locally, UNORCAC, PRODECI, AGRECO, CEPCU.

These institutions are managed in accordance with their own norms, principles and directions, however their work has been very significant for the strengthening of agro. The services they offer: Technology transfer, credit, productivity improvement, diversification, animal husbandry assistance, commercialization, organization building, food security, irrigation and organic production.

These NGOs have not taken their efforts to the population at large but rather have focused on the needs of specific sectors.

6.2.3. Impact

The population of Imbabura is 344.044 inhabitants, 65% mestizos, 25% indígenas, 5% blancos, 5% afroecuatorianos, of which we find a very similar distribution in the rural areas which has 171.830 inhabitants representing 49,7%. According to figures from SIISE 2008, there are 33.786 UPAs in the province which represent 5,9% of the UPAs in the Sierra, and of these 26.226 correspond to small-holders (<1 – 5 ha).

Including efforts by the government and NGOs the attention given to small-holders is important. Both in coverage and in variety of services some 70% of this sector has received support.

6.2.4. Principle problems and achievements

Efforts on behalf of agro have faced complications like: lack of economic resources, indiscriminate use of agro-chemicals, conflicts of interests between communities, contraband, emigration.

Even so these efforts have helped improve living standards of small-holders by:

1. Participative strategies for development
2. Consolidation of organizations with representatively locally and nationally
3. Increasing productivity
4. Strengthening grass roots organizations
4. Incorporation of good and better practices in agro

5. Genetic improvement of animal varieties
6. Family and MIPYMES business startups
7. Associative commercialization
8. Improvements in irrigation infrastructure
9. Implementation of integral farms
10. Protection and conservation of páramos

6.2.5. Sustainability

These results will come to their fruition once they become permanent, for which the different actors involved have begun processes to share experience, construction of locally based initiatives, fair distribution of rights and responsibilities, but above all the construction of a social framework.

The index of poverty as measured by unmet needs is 58, 2% for the inhabitants of Imbabura, but they have a young population 60% are between 0 - 29 years of age who with integral assistance will actively contribute to the province's progress.

6.3. PICHINCHA

6.3.1. Geographical coverage

Capital city Quito is also the capital of Ecuador. Quito was declared Patrimony of Humanity by the UNESCO in 1978. Pichincha has 12.915 Km2, and 2'000.000 inhabitants. It is located in the center-North of Ecuador. Its cantons are: Quito, Cayambe, Mejía, Pedro Moncayo, San Miguel de los Bancos, Pedro Vicente Maldonado, Puerto Quito, Rumiñahui.

Its principle crops are: cut flowers for export, African oil palm, soft maize, banana and plantain, cacao, potato, barley, vegetables, chirimoya, granadilla, grapes and strawberries.

Pichincha, from the agro-ecological standpoint extends from 300 to 4.000 meters altitude. It is bordered on the North by the provinces Esmeraldas and Imbabura, to the South by Cotopaxi and Los Ríos, to the East by Napo and Sucumbíos and the West it shares with the new province Santo Domingo de los Tsachilas, formerly a canton of Pichincha.

Pichincha is crossed by the Western and Eastern cordilleras of the Andes and has great topographical relief and diversity of life zones that go from the humid tropics to paramos glaciated volcanoes: this diversity translates to diversity in microclimates, soils, avifauna, agriculture, animal production and tourism resources. Industrial, commercial, touristic and artisan services have concentrated in the larger cities and give employment to important segments of the population. It is estimated that the annual contribution of the province in agricultural products in 917.000 metric tons and in dairy products some 800.000 metric tons.

In spite of the problems that the province faces and its rural areas particularly so, its agriculture is achieving an acceptable level of development that is based on its climatic diversity that allows for vastly different products like African oil palm from the tropics and sheep's wool from the paramo.

6.3.2. Services

MAGAP is the organism, rector at the national level and as such its responsibilities and principle attributes include: establish policies and strategies of the sector, plan, foster norm, give incentives to, facilitate, supervise and control the rational use of farm resources and also the organization, functioning and quality control of those establishments that offer services to the agricultural sector and the people who work in it.

6.3.3. Impact

The economically active population (PEA) dedicated to agriculture is very important in some cantons of the province; according to official statistics (INEC 1990) y the survey of living conditions, 1995, employment generated by this activity represents 82% of the PEA in canton Puerto Quito, 72,8% in canton Los Bancos, 65% in Pedro Vicente Maldonado, 52,6% in Pedro Moncayo, 45,3% in Cayambe, 33,7% in Mejía, 9,7% in Rumiñahui and 5,7% in canton Distrito Metropolitano Quito.

In the last decades the behavior of the agriculture sector shows heterogeneous levels of development where two production systems coexist: one whose product is oriented to the domestic market and shows very low levels of technological development; and another that is very sophisticated and uses cutting edge technology and elevated capital costs for the export market. Similarly, within the beef and dairy sector there are vast differences some farms with scarce technology and training and others that are true corporate dairies with top-of-the-line equipment and productivity.

6.3.4. Principle problems and achievements

The erratic development models implemented in Ecuador (substitution of importation in the 1970s and the opening of markets in the 80s & 90s), did not posit the agricultural sector as one of the pillars of national development, and currently this obliges public and private institutions the design of new strategies that generate the best answers to the problematic agrarian situation.

The most visible symptoms — and also those that hit small-holders the hardest — of the problem are seen in the following aspects:

• Low productivity (due to lack of technical assistance, business organization, credit or other resources).

• Low levels of union-coop-guild organization: individualistic vision from the grower's side which forces the sale of products to intermediaries… growers continues with very little bargaining power.

• Absence of an agency or organization specialized in technology transfer. There is very little relation between producers and investigation centers (universities), and to this we add the extreme weakening of INIAP, the only public institution that carries out agricultural investigations.

• Deficient commercial system for agro products: again chains of intermediaries who affect both the grower and the final consumer. In many cases they are the only option and in fact are providing a service, just an inefficient and damaging one.

• Destruction of the rural nuclear family as result of constant emigration to city or abroad.

• Inexistent system for communicating market information, prices, inputs, opportunities and investments.

• Lack of competitivity: as one result of lacking organization amongst growers and the other challenges mentioned above.

• Sector in free market model which benefits those that are highly technified or organized.

• Poor quality support services for rural development, lack of infrastructure: roads, harvest processing centers, financial services.

• Low coverage in basic services (health, education, sewage, electricity, roads, telephone service) in rural areas which contribute to illness, illiteracy and poverty (poverty indexes near 90% in some cantons). The average index of Unsatisfied Basic Needs (NBI) for the 8 cantons of the province on a whole is around 56 %.

• In Pichincha, as in the rest of the country, land ownership is heterogeneous and shows the classic dichotomy "latifundio-minifundio". The minifundio (< 1 ha.) and the latifundio (400 hectares +) coexist in Pichincha, and this situation has made a harmonic development of the province difficult.

• Evident disarticulation, duplication of efforts and wasting of resources in the offer of services directed towards small and medium producers.

• Incapacity of the central government to attend all the needs of rural organizations, which obligates decentralization of efforts.

6.3.5. Indicators of results:

1. Producers achieve productivity increases.
2. Producers begin associative sales.
3. Producers rely less on loan sharks.
4. Producers legalize their land possessions
5. New organizations are created.
6. Campesinos join existing organizations.
7. Producers begin associative projects.
8. Financial institutions offer more credit and services.
9. Producers satisfied with institutional offer of credit.
10. Rural sector dynamizes.
11. Central and sectional governments take an interest in the rural areas.
12. Local governments take project on as their own.
13. Institutional consensus is built.
14. Producers' organizations make direct associative sales.
15. Producers' organizations increase sales margins.
16. Producers' organizations link together to improve sales.

6.3.6. Sustainability

Pichincha has an agricultural vocation born of the quality of its soils and the quantity of the province that is destined to agro (55,8%). Land with other uses represents 44,2% of total area. This is greater than in the Sierra taken as a whole where 31,1% is destined to agro on average.

Team work is necessary to foster partnerships amongst and between public and private entities to make the province efficient, productive, solidary and fair: allowing for the reduction of poverty levels. This will also allow Pichincha to position itself domestically and internationally as a model of development.

6.4. COTOPAXI

6.4.1. Geographical coverage

Cotopaxi, is in the central Sierra of Ecuador, between the Eastern slopes of the Andes, the Interandean valley, the Western Andean Slopes and coastal flatlands. This complex topography covers an altitudinal range from 5.920 meters at the top of the volcano which gives the province its name to 90 meters. The III Agriculture Census, 2000, ratifies agriculture as the main economic activity in the province with 49,9% of the economically active population working in it.

Among the most important products, both for their quantity of production as also for their economic importance: cacao, coffee, sugar cane, cassava, banana, plantain, potato, soft maize, beans, barley, quinoa, peas, white onion, carrots, lima beans, chocho, broccoli, flowers. Al the usual farm animals are present as well as are llamas and vicuñas.

As for the small-holders from 1 to 5 hectares, they have 1,6% of the cultivated land areas, but represent 80% of the farm production units, UPAs, in the province.

6.4.2. Services

Small-holders have received assistance and technical-productive service from the government in the following: irrigation, credit, technology transfer, productivity, investigation, maintenance and improvement of species, productive-commercial infrastructure, reforestation, all of which have been implemented by the central government through its ministries and institutions: MAGAP, BNF, INAR, INIAP, MIES, AGROCALIDAD; the Provincial Government of Cotopaxi and the Municipal Governments of (Latacunga, Pujilí, Saquisilí, Salcedo, Sigchos, La Maná, Pangua)

Beyond the support mentioned above, there have been programs and projects for agro executed by PRODER, PROLOCAL, PROFORESTAL, PDCC, PROGRAMA NUTRIENDO DESARROLLO, PROSAN, Programa Negocios Inclusivos, to name the most transcendental.

The work of the local governments is very diverse, but generally happens in isolated form and gives mixed results, both for the duplication of similar efforts and for the different political directions they support.

With respect to the NGOs there are stand out organizations from the national scene like FEPP, Vision Mundial, COSUDE, CCF, Heifer, Caritas, CESA, Ayuda Popular Noruega, FODEMI, EcoCiencia, IICA, CESA, FODEMI and locally CORSEDI y FUNDHAVIT.

These institutions are managed in accordance with their own norms, principles and directions, however their work has been very significant for the strengthening of agro. The services they offer: Technology transfer, credit, productivity improvement, diversification, animal husbandry assistance, commercialization, organization building, food security, irrigation and organic production.

These NGOs have not taken their efforts to the population at large but rather have focused on the needs of specific sectors.

6.4.3. Impact

The population of Cotopaxi is 349.540 inhabitants, 70% mestizos, 34% indígenas, 5% blancos, 1% afroecuatorianos, and it is much the same in the rural areas. These rural residents, 255.965, represent 73% of the total. According to statistics from SIISE 2008, there are 67.806 UPAs in the province, or 12% of the total found in the Sierra. Of these 54.317 correspond to small-holders with between 1-5 hectares.

Including efforts by the government and NGOs the attention given to small-holders is important. Both in coverage and in variety of services some 80% of this sector has received support.

6.4.4. Principle problems and achievements

Efforts on behalf of agro have faced complications like: lack of economic resources, indiscriminate use of agro-chemicals, conflicts of interests between communities, contraband, emigration of the working age population, crime and conflicts between rival communities.

Even so these efforts have helped improve living standards of small-holders by:

1. Increasing productivity
2. Strengthening grass roots organizations
3. Incorporation of good and better practices in agro
4. Genetic improvement of animal varieties
5. Family and MIPYMES business startups
6. Associative commercialization
7. Improvements in irrigation infrastructure
8. Implementation of integral and organic farms
9. Reforestation and conservation of páramos

6.4.5. Sustainability

These results will not generate the desired effect if more work is not done on their sustainability. To this end the government and NGOs have begun a process of sharing experiences pointing towards complementary work or team work. Further, during this initial phase there have been proposals for collective construction of productive local initiatives, delegating responsibilities to the organizations and to participants.

Even though poverty indexes as measured by unsatisfied basic needs remain high, 76% of the Cotopaxenses, we must highlight that the population between 0-29 years of age is 65% of the total, and this youth with adequate training and technical help could become the motor that restarts this sector.

6.5. TUNGURAHUA

Capital Ambato and it has 3.335 km2 and 362.000 inhabitants. It is in the center of the country and its cantons are: Ambato, Baños, Cevallos, Mocha, Patate, Quero, San Pedro de Pelileo, Santiago de Píllaro and Tisaleo.

The main crops in Tungurahua are: potato, red onion, cabbage, beans, lima beans, lettuce, soft and dry maize, tree tomato and fruits like plum, peach, mandarine orange, apple, blackberry and pear.

Agriculture in Tungurahua is part of the primary sector of the economy and employs 33.8% of the economically active population representing ca. 66.000 farmers, helping guarantee alimentary security and supply in the country.

There are 31.717 UPAs that occupy some 204.083 hectares in 9 cantons and 219 communities registered in MAGAP. The majority of these growers belong to some kind of association to improve productivity, post-harvest techniques and sale of their products. MAGAP is the rector organism in the province, and within its principle activities is attention to communes and agro organizations.

Tungurahua is one of the most organized provinces in political development, and many plans and projects have been implemented benefitting the great majority of farmers, both from the government and from NGOs.

Tungurahua is very rich in the diversity of its products as it has many microclimates. However, minifundio is a big problem and there are farmers that have as little as 200-500 square meters. In counterpoint this province also has grand haciendas many over 30 hectares. The province has many specialized cops like flowers and vegetables although many crops are going out of production for lack of liquidity and labor supply. One example is potato that is being planted far less due to lack of technical management and the high costs of fertilizers and other inputs.

In poultry Tungurahua is quite advanced as it is in dairy. It is a large supplier of eggs and milk and also their respective sub-products. One serious problem in the province is the scarcity of irrigation water and in many cantons they cannot supply all growers. The irrigation canal that goes from Quero to Pelileo does not cover all that need it and many have had to dedicate themselves to annual crops that aren´t as productive economically. The situation is similar in the western part of the province for the communities organized in UNOCANT. It is urgent that irrigation systems are modernized.

Agro organizations in the province are well organized, however it is clear that in many organizations the benefits do not reach all those involved. NGOs are working hard in the recovery of the paramos, given that there is a lot of pressure on this resource, ecosystems of vital importance for the long-term investments in irrigation canals, etc.

There is also the latent danger of volcanic eruptions from Tungurahua, and many communities near to the volcano have had great losses in crops, animals and even human lives. However the various levels of government have helped mitigate this problem for the present.

In Tungurahua many NGOs work and act in a coordinated fashion with other NGOs and with local governments, showing positive results in most of these projects. Currently there is much activity as regards the paramos, as mentioned by GTZ, Visión Mundial, IEDECA and MAGAP, especially in the improvement of pastures and animal genetics as a means to reduce pressure on this important resource.

6.6. BOLÍVAR

Capital Guaranda. 3.340 Km2 land area and a population of 160.000 inhabitants. Its cantons are: Guaranda, Chimbo, San Miguel, Chillanes, Echeandía, Las Naves and Caluma. It is one of the provinces with the highest levels of recent emigration to Europe.

Principal agro products: maize, wheat, barley, potato, lentil, beans, peas, sugar cane, bananas, coffee, mandarin and other oranges. Principal small scale manufactures: guitars, rustic brown sugar, sugar cane liquor, fireworks, cheese and other handicrafts or souvenirs. It is one of the poorest provinces, perhaps due to its geographic location, isolated from the main highway

between Quito and Guayaquil. This status has determined a constant exodus of its population due to the economic paralization.

Agro activity is one of the primordial columns of the economy, but the lack of technical assistance, technology and true support for its rural areas have caused great retardation of its progress. Bolívar was always considered one of the grain houses of Ecuador, decades ago, but has suffered a notable decline in production. In 2000, 41.000 hectares were planted and in 1995, 92.853 (MAGAP).

The agro sector contributes ca. 60% of the province's total economic production, and the dairy subsector has shown marked growth in recent years as compared to the overall decadence of agro. This is due in large measure to the lack of labor supply resulting from emigration, as dairy require less labor per hectare than other productive options. One of the factors that undermine the sector is the average education levels of the province's small-holders: 23.4% illiteracy. Also, the nationwide pattern of minfundios is true here too: 55% of the UPAS are smaller than 5 hectares, according to the III National Agricultural Census.

State policies in the last 2 years have had a large impact on government organisms, and we observed and felt a better connection between the countryside and the government. Apparently MAGAP, MIES, INIAP, etc. are now more committed to the development of this vital sector. National plans and projects are being carried out in the different cantons of Bolivar, with the greatest benefit for those nearest Guaranda. This is a normal result given the distances involved, the quality of the roads, etc.

It is worth highlighting that current projects in the province are of great transcendence, that promote agro-ecological, sustainable farming, non-traditional products, basic "food basket" items, first need items within the framework of national food sovereignty. However, in export products there has been little progress, few technified mono-crops or processes. Again, there is an important advance in subsistence farming and farming for local supply.

Another aspect of current application of policies, programs and projects is the lack of baseline or feasibility studies prior to their realization. It appears that there is a rush in the province to meet political obligations or pressures. This sometimes has the effect of some institutions giving resources to the same communities that they have served previously or even worse, giving resources to projects that don't even meet with simple criteria of common sense. For example, with emergency funding during the eruptions of the Tungurahua volcano, many irrigation canals were built, and they looked great on paper, but in the field caused problems. The campesinos without adequate training have suffered erosion problems and in a few years we can foresee a sad panorama: farmers with ruined fields and small mafias manipulating water rights and usage. This is no invention of the consultant, but rather the same thing that happened with the irrigation canal Santa Fe.

In the last 2 years there has been an uptick in NGO activity in Bolívar, in all of its cantons. This work has been of great importance for the province's development. It must be mentioned that in Bolivar there is a new round-table process where NGOs and government agencies try to fit together better to take on a better development strategy for the province.

6.7. CHIMBORAZO

Capital Riobamba. 6.569 Km2. Land area and 365.000 inhabitants. Cantons are: Riobamba, Alausí, Chambo, Chunchi, Colta, Cumandá, Guamote, Guano, Pallatanga and Penipe.

Principals products: maize, barley, potato, wheat, peas, lentils, red onions, garlic, lima bean, melloco, coffee, cacao, cassava, banana, sugar cane and citrus fruits. Beef and dairy production is common as is sheep rearing for wool.

Chimborazo's economy is based on agro, in all of its 10 cantons. It is one of the biggest provinces in the Sierra and has the highest indigenous population in the center of the country. Cultivated land area is 96.951 hectares and pasturelands represent 54.000. Chimborazo also has a high quantity of paramos which are being mismanaged affecting populations that live below that are experiencing irrigation water shortages.

Chimborazo's agricultural directors have centered their efforts on reactivating the sector giving much emphasis to irrigation canal and products for the basic needs "food basket". The province supplies much of the Sierra and coast with potatos, onions and vegetables. There are few export products, but export broccoli and artichoke stand out.

This province is also characterized by its dairies and production of milk derivatives. There are large haciendas that distribute all over the province and small-holders also contribute on a large scale. There are a great number of community enterprises who sell fresh cheese to cities on the coast. Unfortunately these companies don't receive adequate technical assistance and product quality is not as high as it could be.

It is also important to mention the presence of mafias involved in dairy who collect milk from small-holders at unfair prices and then wholesale poor quality milk to industries. Efforts from MAGAP's competitivity project CADERS are meeting objectives and obtaining favorable results.

Two cantons, Penipe and Guano were affected by eruptions of the Tungurahua volcano, and received government help in the construction of infrastructure and subsidized or even free farm inputs. Many communities in the province also benefitted from spikes in land prices due to greater interest from other displaced by the eruptions.

In Chimborazo we find the influence of NGOs acting in all of its cantons, especially in indigenous communities: Fepp, Visión Mundial, ERPE and Fundación Marco, are the most important in the agro sector. However, there is no effective coordination between the NGOs and the government. Their activities often repeat each other in communities or get confused between themselves.

In the Productive Reactivation Plan, Chimborazo worked with different items like: vegetables, grains, barley, quinoa, potato, cassava, cacao, beef and dairy, beans, rice, maize, plantains, sugar cane and benefitted some 6.402 farmers and a total of 3.825 hectares. There were a series of agreements/contracts signed with MAGAP and other government organisms and NGOs for agro development in the province: training courses, conferences, field visits and demonstrative parcels benefitting some 9.788 farmers who contributed to the reactivation plan.

The National Foment Bank gave away in Chimborazo in 2008, 44.760 sacks of fertilizers (Urea and 10-20-20), amongst 5.270 farmers to cover some 23.381 hectares. This important subsidy was part of the Productive Reactivation Plan.

There was also compliance with the project for citizens fair or farmers' markets. This effort benefitted growers and broke intermediaries' grip to some extent. Also, consumers were

benefitted who were able to get high quality and fresh products cheaper than usual. There were 4.880 farmers benefitted and 23.892 consumers. These markets were the pioneers in a national project of citizens' fairs now being implemented around the country.

6.8. CAÑAR (TRANSLATION FOR MONDAY) From here three provinces have yet to be translated. Sections 7-8, however, are done, in English.

6.8.1. Geographical coverage

La provincia de Cañar, geográficamente se encuentra ubicada en el centro – oeste del Ecuador, caracterizada por poseer una marcada variación en altitud, existe una gran variedad en fisiografía, relieve, clima, suelos y vegetación. En Cañar la principal fuente de riqueza es la agricultura y ganadería, existen 32.173 Unidades de Producción Agropecuaria (UPAs), de las cuales 78 % tienen menos de 5 hectáreas y todas juntas alcanzan solamente 33 714 ha que representan el 13 % de la superficie total, mientras que el restante 87 % de la tierra es propiedad de 7146 UPAs; el 81 % de las explotaciones tienen títulos de propiedad (INEC, MAG, SICA, 2000).

Según información del III Censo Agropecuario año 2000, se trata de una provincia netamente agropecuaria la cual emplea el 45% de la población económicamente activa. La superficie agrícola tiene cultivos de caña de azúcar, banano y cacao, maíz suave, papa, arroz, entre los principales; la producción pecuaria es de ganado bovino, porcino, ovino, caballar. Sus principales productos industriales proceden de los sectores azucarero (ingenio ASTRA) y de licores.

6.8.2. Services

La intervención de los planes programas y proyectos al sector agropecuario rural de esta provincia ha sido principalmente en los ámbitos de reactivación productiva, comercialización, forestación y reforestación, negocios inclusivos, crédito, riego impulsado por los programas CADERS, Programa Socio Siembra, Granos andinos y cereales y líneas de Créditos pertenecientes al gobierno central a través de sus instituciones MAGAP, BNF, INIAP, INAR, MCDS y AGROCALIDAD, COPOE, así como los gobiernos municipales de Azogues, Biblián, Cañar, Deleg, El Tambo, La Troncal y Suscal

En cuanto a los actores no gubernamentales existe una presencia dominante de CICDA, CEDIR, la Asociación de Agrónomos Indígenas del Cañar AAIC, Agroempresa Chuya Micuna, Fundación Tierra Verde y Nuevos Horizontes, las cuales se encuentran trabajando en proyectos de manejo sustentable de los recursos naturales, biodiversidad, fortalecimiento del proceso productivo, sistemas de riego, fomento y uso de especies nativas, cultivos bajo invernadero, microempresas de producción orgánica.

6.8.3. Impact

A pesar de la ejecución de los diferentes programas los índices de pobreza son alarmantes, es así que en el año 2000 el índice de pobreza por necesidades básicas insatisfechas (NBI) era del 70% de la población total, y estimaciones al año 2006 reportan un índice de pobreza de consumo que asciende a 44%. En la provincia existen cuatro grupos étnicos principales, los mestiza y que representan un mayoritario número 78%, la gente indígena con 16 %, la población blanca 4 % y Afroecuatorianos con el 2% (SIISE, 2008; GMCS, 2009).

Al analizar las acciones de los actores gubernamentales y no gubernamentales el alcance de asistencialismo a los más necesitados, es escaso, respecto a la cobertura como en variedad de servicios, esto se refleja al analizar la distribución de los programas y proyectos

geográficamente, se puede decir que los cantones menos atendidos son La Troncal, Suscal, Azogues, Delég y el Tambo, en los cuales la presencia de OG como ONG es muy escasa o nula.

6.8.4. Principle problems and achievements

Los problemas relacionados al agro en la provincia son de orden estructural, es así que desde los cantones que poseen plan de desarrollo, no lo ejecutan conforme a lo que planteado, algunos cantones como El Tambo, La Troncal no cuentan con plan de desarrollo, otros carecen de un departamento para asuntos agropecuarios, en lo referente al MAGAP, éste interviene en acciones puntuales de las iniciativas a nivel central y en su mayor parte desvinculado con los principales actores. Por otra parte, existen problemas de índole económica, uso indiscriminado de productos químicos nocivos para la tierra y el ecosistema, la migración de la población económicamente activa joven, conflictos en el uso del suelo.

6.8.5. Sustainability

Los diferentes pisos altitudinales de la provincia generan una variedad de ecosistemas, lo cual favorece a una diversificación de la producción, a ello se suma la cultura agropecuaria de la población, los sistemas de comercialización locales, los recursos naturales, fertilidad de sus suelos, condiciones óptimas para que la participación de distintos actores del desarrollo tanto OG y ONG.

Aún cuando el índice de pobreza por necesidades insatisfechas encierra a un 70% de los habitantes de Cañar, debemos recalcar que la población joven entre 15 y 29 años es del 64 %, quienes con una generación de capacidades y potencialidades de la ciudadanía para el desarrollo humano sustentable, podrán convertirse en el motor generador para la reactivación del sector.

6.9. AZUAY (TRANSLATION FOR MONDAY)

Azuay la principal provincia Kañari, se encuentra ubicada en el austro andino del Ecuador; tiene una extensión de 8.639 Km2 y una población de 662.109 habitantes, con una densidad de 77 habitantes/km^2.

Su capital es Cuenca, está ubicada al sur del país, entre las provincias de Cañar, Guayas, El Oro, Loja, Zamora Chinchipe y Morona Santiago. Sus cantones son: Cuenca, Chiordeleg, El Pan, Girón, Guachapalá, Gualaceo, Nabón, Oña, Paute, San Fernando, Santa Isabel, Sevilla de Oro y Sigsig.

Tiene una agricultura muy pobre, por esta razón se ha producido la mayor emigración reciente hacia EE.UU y Europa especialmente. Sus principales productos primarios son: maíz suave, fréjol, caña de azúcar, arveja, cebolla, cebada, papa, durazno, manzanas, peras. La minería genera calizas en cantidad importante. Sus principales productos industriales son: cerámica plana y vajillas, joyería y bordados. Su artesanía es famosa y trabajan sobre todo los hombres y las mujeres campesinas. Los ingresos por remesas del exterior son muy altos.

Existe intervención significativa por parte de los gobiernos municipales en el desarrollo agropecuario, quienes han unido esfuerzos con diferentes organismos estatales y ONG y se han centrado, a través de diversos proyectos, el impulso a la producción microempresarial, micro crédito, procesamiento, transferencia de tecnología, especialmente para cultivos frutales, café y últimamente hacia cultivos de plantas medicinales, esta intervención ha sido de preferencia en los cantones de Oña, Guachapalá y Santa Isabel, a través de la coordinación de sus respectivos municipios con el MAGAP, PRODER, CREA, BNF e INIAP.

En última década, en la provincia ha surgido una nueva tendencia del agro hacia la competitividad, desarrollo rural con enfoque territorial, negocios inclusivos, agroecología, en estos procesos han tenido mucho que ver los programas tales como CADERS, PRODER, donde la coordinación de los gobiernos municipales con el MIES, CREA, INIAP, OFIS, Mancomunidad de la Cuenca del Río Jubones, entre los principales y de manera especial en los cantones Gualaceo, Camilo Ponce Enríquez, Nabón, Sevilla de Oro,

Respecto al proceso de comercialización, es considerado como un componente dentro de los diversos proyectos agropecuarios, a pesar de aquello, este tema ha sido de mayor interés en las áreas de la Mancomunidad de la cuenca del Río Jubones y Municipio de Girón.

En lo referente al desarrollo pecuario, mayor interés se ha concentrado en la ganadería bovina de leche, crianza de Cuyes y cultivo de truchas, enfatizando los ámbitos de fortalecimiento de las cadenas productivas, redes de comercialización, manejo de pastos. Todas estas actividades han sido gracias a la intervención de los gobiernos locales especialmente del Gobierno Provincial del Azuay y por parte de los municipios de los cantones Girón, Pucará, Nabón, Sigsig, algunos de ellos en coordinación y apoyo del programa PRODER, MAGAP e INIAP.

A nivel provincial existe una preocupación que va en aumento sobre los recursos naturales, de manera especial el recurso hídrico, frente a ello el Gobierno Provincial se encuentra desarrollando un Programa de manejo adecuado del recurso agua, a ello se suma la Mancomunidad de la cuenca del Río Jubones con su gran proyecto de Protección de fuentes hídricas, programa PROFORESTAL, y el gobierno municipal del cantón Nabón, el cual tiene severas limitaciones en cuanto al recurso agua. Frente a este panorama, existe la intervención por parte del Estado a través del INAR acciones de implementación, fortalecimiento y mejoramiento de sistemas de riego a nivel nacional, especialmente en los cantones Gualaceo y San Fernando.

La meta principal de los actores del desarrollo agropecuario es la reducción de la pobreza y un desarrollo rural sustentable, a nivel provincial se está trabajando por la planificación participativa, especialmente desde la prefectura y municipalidades para la estructuración de redes comerciales, cadenas de valor, competitividad.

La coordinación interinstitucional de gobiernos locales, entidades estatales y ONG significa un gran avance para la continuidad de los proyectos y programas establecidos, así como la ejecución de diversas acciones a través de la Mancomunidad de la Cuenca del Río Jubones, a pesar de aquello, falta por ampliar esta cobertura de servicios a los demás cantones y territorios de la provincia.

6.10. LOJA (TRANSLATION FOR MONDAY)

Su capital es Loja. Tiene 11.026 Km2, y alrededor de 400.000 habitantes. Está ubicada al sudoeste del país, entre las provincias de El Oro, Azuay y Zamora Chinchipe. Limita al sur con Perú. Sus cantones son: Loja, Calvas, Catamayo, Celica, Chaguarpamba, Espíndola, Gonzanamá, Macará, Olmedo, Paltas, Pindal, Puyango, Quilanga, Saraguro, Sozoranga y Zapotillo.

Sus principales producciones primarias modestas son: maíz duro, café grano de oro, fréjol seco y caña de azúcar. Entre recursos minerales encontramos: mármol, piedra caliza, caolín, carbón, cobre y hierro. A pesar de estas condiciones se evidencia un fuerte proceso de migración al exterior, porque no existen fuentes de trabajo.

En la provincia de Loja existe una concentración de esfuerzos por contrarrestar la problemática principal acerca de degradación de los recursos naturales, proceso de desertificación, escasez de agua, deforestación, ante ello han surgido un sinnúmero de planteamientos plasmados en diversos programas y proyectos. Entre las acciones de mayor intervención tenemos el Proyecto de Riego Zapotillo, Proyecto Binacional de la cuenca hidrográfica Catamayo – Chira, Programa binacional Chinchansuyo Ecuador-Perú, Programa de Desarrollo Rural Territorial – PRODER, PROLOZA, Manejo y conservación mancomunado de los recursos naturales.

En una lista más extensa de los principales actores del desarrollo agropecuario en la provincia de Loja, se encuentran, por parte del Estado Ecuatoriano: el MIES, MAGAP, la Subcomisión Ecuatoriana PREDESUR, BNF, Honorable Consejo Provincial de Loja, los gobiernos municipales (siendo los más destacados los de Loja, Celica, Macará, Pindal, Puyango, Zapotillo, Saraguro, Quilanga, Chaguarpamba); y por parte de las ONG' podemos mencionar: Intercooperation, Cosude, Fundación Kawsay-Iscod, Solidaridad don Bosco, Fundación Rikcharina, Ayuda en Acción, Escaes, ECOBONA , Fundación Arco Iris , Fundación Futuro, COSV, Fundación Naturaleza y Cultura, Plan internacional, FIE. Donde los cantones que mayormente se mencionan durante estas intervenciones en orden de importancia son: Saraguro, Paltas, Gonzanamá, Quilanga, Catamayo, Espíndola, Calvas, Zapotillo, Puyango, Pindal, Macará, Chaguarpamba, Celica, Sozoranga y Olmedo.

En la producción agrícola de Loja, las acciones se centran en el cultivo, procesamiento y comercialización de café arábigo de altura (en los cantones Puyango, Paltas, Olmedo, Chaguarpamba, Catamayo, Espíndola), huertos integrales, cultivo de maíz, mejoramiento de pastos, y en esta última década una proliferación de apoyo a la producción y procesamiento de plantas medicinales. En cuanto a los proyectos productivos pecuarios están encaminados hacia el ganado bovino de leche, Aves de corral (gallinas de postura), crianza de cabras, siendo los principales aliados el programa PRODER, Fundación KAWSAY, COSV, PROYAVES, con los gobiernos municipales de Gonzanamá, Calvas, Paltas, Olmedo, Chaguarpamba, Catamayo, Zapotillo y el Gobierno Provincial de Loja. Todos estos proyectos apuntan al incremento de los ingresos familiares con su intervención en las comunidades, la diversificación de la producción, seguridad alimentaria, pero en su mayoría poseen presupuestos reducidos, los cuales atienden a grupos de agricultores en forma dispersa y descoordinada. Con respecto a las actividades productivas existe un considerable aporte por parte de PRODER a nivel rural, que va desde iniciativas productivas agrícolas y pecuarias, apoyo a la comercialización, planes de negocio, entre las principales.

En cuanto al ámbito de medioambiente y recursos naturales, existe una diversidad de programas y proyectos que van desde la gestión social de ecosistemas forestales, conservación del bosque andino, conservación de la biodiversidad, recuperación de áreas degradadas, quemadas y deforestadas, manejo de microcuencas hidrográficas, reforestación ya sea a través de plantaciones forestales extensivas y sistemas agro forestales, proyectos de manejo de residuos sólidos, implementación de viveros forestales por parte de los gobiernos municipales (especialmente en los cantones Loja, Paltas, Sozoranga, Macará).

En este esfuerzo por la conservación del medio ambiente cabe reconocer los aportes significativos de ECOBONA - INTERCOOPERATION, COSUDE, Plan Internacional, Fundación Arcoíris, Fundación Futuro, Fundación KAWSAY-ISCOD, y recientemente la intervención de la Unidad de Promoción y Desarrollo Forestal del Ecuador – PROFORESTAL, así como los Gobiernos Municipales de los cantones Loja, Paltas, Espíndola, Gonzanamá, Quilanga, Sozoranga, Calvas, Celica, H. Consejo Provincial de Loja, ya sea en forma individual y en otras ocasiones en convenio con diferentes instituciones que trabajan en este ámbito.

Paralelo a ello aportan a este proceso la optimización de recurso hídrico para uso agrícola se la realiza a través de la construcción de diversos canales de riego, entre ellos el principal el Canal de Riego Zapotillo, y algunos proyectos dispersos en otros cantones apoyados por el Instituto

Nacional de Riego – INAR que a nivel provincial ha trabajo en la rehabilitación, construcción de canales y acequias de riego.

7. Principle problems of the Agriculture and Animal Husbandry Sector

- Agricultural production areas for the export sector are growing while the amount of land dedicated to the domestic market is decreasing.
- Productive infrastructure is oriented to mono-crops of export and agro-industry products without considering potencial for independent development and the needs of the population.
- Supply of food crops decreasing since the 1970s. Production of wheat down 60%, barley and corn down 50% and tuber down 12%.
- Oligopoly possession of arable lands is articulated to financial capital. There is a great concentration of lands in relatively few hands.
- Land is distributed inequally and large properties benefit from much more water than the small properties, mantaining inequity in the access, use and distribution of water rights.
- Agricultural production units larger than 100 ha are few, only 17.000, but occupy 43% of cultivated lands. Meanwhile 90% of small-holders have parcel up to 10 hectáreas, and the majority of these are on slopes often steep slopes that are logically difficult to cultivate and prone to erosion.
- Low productivity, environmental degradation and extreme social problems.
- Campesino production, especially indigenous, does not have access to credit, technical assistance or adequate commercial mechanisms.
- Decreasing production, presence of destructive natural phenomena, drop in the prices for agricultural products.
- Inestability: economic, political and legal.
- Agriculture, in spite of producing 32% of foreign currency income only receives 5% of the investments in technology. That means that there is a very poor structuring of technology investment with potential demand.
- Sector is underdeveloped and lacks competitivity.
- Elevated number of minifundios, 80% of productive lands are minifundios.
- Permanent migration from the country to the city and out of country.
- Strategies for sector are not always viable.
- High operational costs and insufficient financing.
- Weak public and private institutionality.
- Low level of associative behavior.
- Low investment in investigation, hurting competitivity.
- Competition with products from nearby, similar countries.
- Dependence on nature.
- Uncontrolled and progressive deforestation.
- Permanent volcanic ash falls (3 Provinces).
- Immanent danger of eruption (Tungurahua volcano).

The accumulation of wealth in few hands has brought an increase of the poverty and extreme poverty for the majority of Ecuadorians.

Poverty is understood, as it strips a family from its ability to satisfy its basic needs in education, health, food and housing (not to mention entertainment), denying them the possibility of realizing their full potential.

Poverty in Ecuador is structural and of massive incidence[4]. It is structural because historically economic, social and political conditions have continued to repeat themselves leaving the majority of the population out of their rightful participation in the production and enjoyment of the country's riches. That is to say that, in Ecuador poverty is not because of a lack of resource or natural riches, but from the way in which land ownership and other means of production and resources have been concentrated. To this we must add the level of formal education: the higher the level of schooling obtained by the head of the household, the lower the poverty index. The majority of the poor population still lives in houses where the head has had only primary instruction.

Cantons and parishes with the highest poverty indeces are dispersed around the country on the center-northern coast, in the **central-south Sierra** and in the northern Amazonia.

8. It is necessary to begin some actions such as:

- Initiatives to improve and increase the human capital amongst small-holders in the Sierra, through training and formation events with the objective to amplify the range of work opportunities available to them.
- Accompany social management of natural resources, particularly water and paramo lands so as to anticipate conflicts and guarantee the environmental sustainability of the Sierra.
- Technical and financial support to small-holders in the region of this study to strengthen their capacities in "deciphering market signals".
- Decided support to organizations:
    - Sectional governments to create a favorable environment for the consolidation of local economic initiatives[5].
    - Social movements and producers' groups that work for their associative production and insertion in markets with value added
- The elaboration of local development strategies and alternative proposals for agrarian politicies in favor of sustainable human development on rural territories that are alive with identity.

[4] PNUD –Ecuador: 1999. P. 37
[5] Martínez Valle, 2006

Annex 4

Result of Interview Survey

1. Outline of Interviews Survey
2. Location Map
3. Questionnaires
4. Result of Interview Survey

THE STUDY
ON
THE PLAN OF REORGANIZATION OF
THE AGRICULTURE SUPPORTING SERVICES,
COPING WITH POVERTY ALLEVIATION
FOR RURAL PEASANT IN MOUNTAINOUS AREA
IN
THE REPUBLIC OF ECUADOR
Annex of the Final Report

Annex 4

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1. Implementation of the questionnaire survey in the four priority provinces for the Study

While the objectives of the study are for the small farmers of the 10 provinces in the Sierra Region, The field survey by the questionnaire was implemented in four priority provinces: Cotopaxi, Tungurahua, Bolivar and Chimborazo, to add to the existing materials such as the result of the Agricultural Census 2000 and other developed so far. The questionnaire was conducted by selecting, in principle, three (3) parroquias in each province, and twelve (12) parroquias in total, considering aspects such as poverty rate and the altitude where agricultural activity is carried out (The object of study is at altitudes above the 2000m). Finally, 20 communities in each province, 80 communities in total were selected to be surveyed as sample, considering the natural and social situation of each. Followings are the features of the survey

1.1 Selection of the Parroquias Surveyed

Among the 173 parroquias in four priority provinces, 140 rural parroquias were selected, then were classified into three levels of poverty: on average, above average and below average of Sierra Region.

The consumption poverty rate, calculated based on information from year 2006 poverty rate, is 65.8 % in the rural parroquias[2]. "Putting this average value in the center and considering the equal distribution in the number of parroquias, the rural parroquias of Sierra Region was calculated and categorized: the average level (average group: 60.0-74.9 % of the poverty rate), the poorest level (highest poverty group: over 75 % of the poverty rate) and the less poor level (lower poverty group: 0-59.9 % of the poverty rate) (Table 1.1).

Table 1.1 No. of Rural Parroquias for Each Group divided from the Consumption Poverty rate of the Sierra Region (Data SIISE[1] 2006)

Provinces	0 – 59.9 %	60.0 – 74.9 %	Más 75.0 %	Total
Carchi	0	12	14	26
Imbabura	3	17	16	36
Pichincha	36	20	1	57
Cañar	12	12	2	26
Azuay	36	22	2	60
Loja	7	17	50	74
Subtotal	94	100	85	279
Cotopaxi	8	13	12	33
Tungurahua	23	15	6	44
Bolivar	1	7	11	19
Chimborazo	6	16	22	44
Subtotal	36	52	52	140
Total	130	152	137	419
Percentage of Total (%)	**31.0**	**36.3**	**32.7**	**100.0**
Percentage of 4 Provinces (%)	**25.6**	**37.2**	**37.2**	**100.0**

According to this classification, the parroquias and communities subjected to survey were selected by the Secretary of the Sierra region and the Provincial Directorates of MAGAP, putting an equal number of parroquias in the three identified levels of poverty. The list of parroquias subjected can be seen in Table 1.2. The list of communities can be found in the attached documents.

[1] Sistema Integrado de Indicadores Sociales del Ecuador (Integrated System of Social Indicators for Ecuador)

[2] Map of 2006 Poverty and Inequality (SIISE- STMCDS)

Table 1.2 Summary of the Cantones and Parroquias Surveyed

Province	Cantón	Parroquia	*Poverty	** No. Commu.	Altitude (m.)	Relevant Crops	Distance from Provincial Capital
Cotopaxi (23 communities)	Salcedo	Mulliquindil Santa Ana	Above	5	2,800-3000	Potate, Maize, Melloco, Broad Bean, Livestock	25-35km
	Pujilí	Angamarca	Average	8	2,900-4,000	Barley, Maize, Potate, Wheat, Livestock, Melloco, Broad Bean	70-210km
	Sigchos	Chugchilán	Below	10	2900-3,300	Maize, Potate, Chocho, Broad Bean, Barley	80-130km
Tungurahua (17 communities)	Ambato	Martínez	Above	4	3,140-3,380	Potate, Broad Bean, Blackberry, Barley, Pastures	12-21km
		Pinllo	Above	1	3,160	Potate, Barley, Pastures	12km
		Pasa	Average	2	3,200-3300	Potate, Broad Bean, Onion, Barley, Pastures	12-23km
		Quisapincha	Average	2	2,840'3,180	Potate, Broad Bean, Maize, Melloco, Pastures	12-15km
		Pilahuín	Average	2	3,250-3600	Potate, Broad Bean, Pastures	34-35km
		San Fernando	Below	3	3,200-3,250	Potate, Broad Bean, Barley, Pastures	20-25km
	Patate	Patatehurco	Below	2	2,640-2,7400	Maize, Potate, Pastures, Frejol Bean	42-48km
		El Triunfo	Below	1	2,500	Maize, Blackberry, Pastures	60km
Bolívar (17 communities)	Chimbo	Magdalena	Above	5	2,200-3,047	Maize, Wheat, Barley, Pea, Broad Bean, Blackberry, Tree Tomato	30-50km
	Guaranda	Salinas	Average	6	3,150-4,150	Pastures, Melloco, Barley, Onion, Pojonal	31-47 Km
		Julio Moreno	Below	6	3,000-3,229	Barley, Maize, Wheat, Pea, Broad Bean	35-40km
Chimborazo (23 communities)	Riobamba	San Luis	Above	5	2,711-3,218	Cauliflower, Lettuce, Potato , Frejol Bean, Tomato , Coriander, Alfalfa,	5-16km
		Calpi	Average	5	2,800-3,248	Maize, Potate, Barley, Alfalfa, Melloco, Broad Bean, Carrot	24-26km
		Licto	Average	4	2,800-3,067	Maize, Potate, Wheat, Frejol Bean, Alfalfa	23-32km
	Guamote	Palmira	Below	9	2,825-3,700	Potate, Broad Bean, Barley, Chocho, Maize, Lentil	59-115km

*Poverty: Above (Above Average), Below(Below Average)
**No. Commu.: No. of Surveyed Communities

1.2 Method of Questionnaire Survey

The questionnaire survey was conducted by a local consultant.

To conduct the survey, the counterpart of the Study in the Provincial Directorates of MAGAP and the local consultant constitute a team in each selected province. The consultant carried out the survey under the direction of the Secretary Office of the Sierra Region and the Provincial Directorates of MAGAP of Cotopaxi, Tungurahua, Bolívar and Chimborazo. The counterparts of the Study and JICA Study Team worked together and identified the content of the survey. Since early September 2009, the survey was conducted for three weeks to 15 families in each community, giving a total of 1,200 families surveyed (four provinces x 80 communities x 15 families).

1.3 Content of Survey

Through a meeting with the International Cooperation, the Secretary of the Sierra Region and the four Provincial Directorates of MAGAP, the certain guidelines were determined to consider the content of the Survey:"

a. After the 2000 Agricultural Census, there have been no follow-up studies in the communities identified as the sample for this Survey. To facilitate comparison, the content of the survey should be basically the same as the Census.

b. Questions to capture the needs of small farmers should be added, to complement the information obtained in the workshops that are conducted as part of the study.

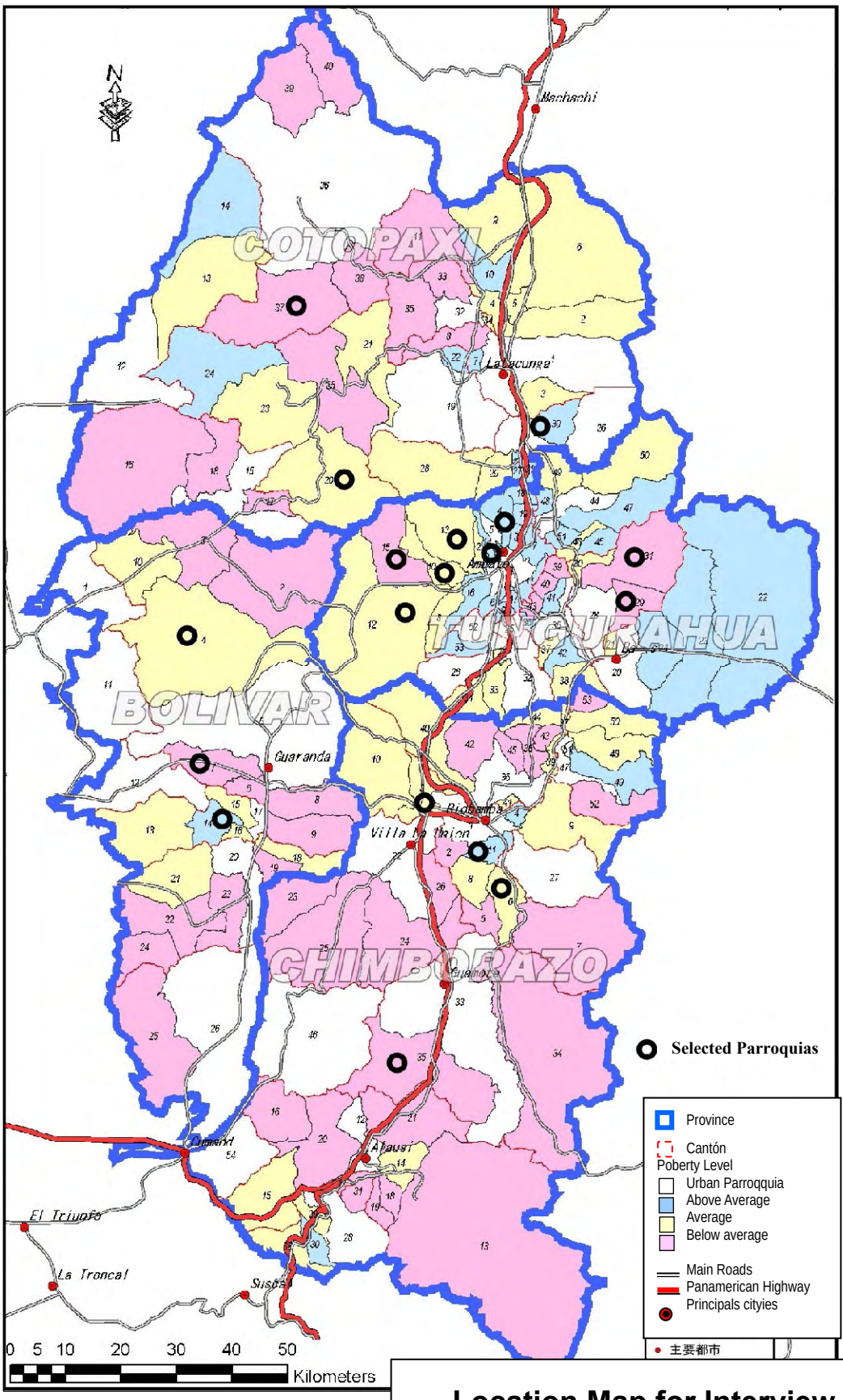
c. Along with the survey for farmers, the questionnaires for community leaders should be prepared separately, to grasp the outline of the communities and agricultural projects in the communities.

d. From a gender perspective, the questions designed to apply to gender and women producers should be included.

Considering the above guidelines, the survey was conducted with the items listed in Table 1.3.

Table 1.3 Questionnaire Survey to identify the actual situation and the needs of agricultural support services for small scale farmers

Chapter	Content
Basic Information	Geographic Information and Participants Information
Chap. 1 General Description	Characteristics of Agricultural Production Unit (UPA) , Characteristics of Production Person
Chap. 2 Area of UPA	Property and Land Surface (UPA)
Chap. 3 Land Use and Irrigation	Land Use, Irrigation Infrastructure
Chap 4 Permanent Crops Chap 5 Annual Crops	Cultivation and Harvest, Sale and movement of a Year
Chap 6 Grassland Crops	Cultivation and Harvest
Chap. 7 Medicinal Plants Chap 8 Apiculture	Cultivation and Harvest, Sale and movement of a Year
Chap 9 Cattle	Number of cattle, Sales, Movements for 1Year, Management and Care of Cattle owned, Volume of Milk Production of Yesterday
Chap. 10 Swine Chap 11 Ovine	Production, Sales and Movement for 1 Year, and Management and Care of Pigs
Chap 12 Other Livestock Species	Production and Sales for 1 Year
Chap 13 Poultry Raising	Production and Sales, Artificial Incubation of cage poultry raising"
Chap 14 Population and Labor	Family Information of Producers, Permanent and Part-time Employees Paid in the UPA on the Interview day
Chap 15 Income and Expenditure, Chap 16 Causes of Low Agricultural Productivity, Chap. 17 Causes of Low Livestock Productivity, Chap. 18 Demand and Needs of UPA' Producers	
Other Questionnaires	Questionnaire for Community Leaders , Gender Issue



Location Map for Interview

Chapter 1. General Characteristics

A. Characteristic of the Unit of AgriculturalProduction (UAP)

1. Name of the Unit of Agricultural Production:		
2. Location of UAP Location:	Road :	Number /Km:
3. UAP's fixed or mobile phone line, include the numbers.	1) Fixed phone 2) Mobile phone	Number of telephone:
4. Legal condition of UAP:	1) Individual, 2) Society in fact without legal contract 3) Legal society, Public Institution 4) With writing , without writing	
5. Why the land has not been legalized?		
6. Name of the Legal Person or Company that controls the UAP		

B. Characteristic of Producer (Natural Person, main responsible for the operations in the UAP)

7. Name and last name of the Producer :		
8. Does the Producer Live in UAP?	1) Yes : Pass to the question 9 2) No: Continue	
9. Address of the Producer	City or Town :	Road/Street :
10. Relationship of the Producer with the owner or the lands of UAP	1) Owner 2) Family 3) Partner 4) Remunerated Employee 5) Another relationship	
11. Sex of the Producer	1) Male 2) female	
12. Age of the Producer		
13. Latest formal instruction approved by the Producer. Score the lastest year of instruction approved for example:	Grade 0: Any approved year of education , Grade 3: Third grade of primary approved Grade 12: Secondary approved education Grade 13: First approved year of superior education	
14.. How many were in agricultural education of the approved years of formal instruction?	Years:	
15. How many were in agricultural education?		

16. Does he/she have some course or qualification in the agricultural development?	1. Yes. – Continue 2. No. – Pass to the question 16 .

17. Identification area of qualification, institutions that offer this service in the following list.

Title	Name of Institutions	Received year

18. Number of persons in the family	

19. Does any emigrant?		1) Yes – Continue to fill following chart. 2) No– Pase to Chapter 2.
Sex	Number of Emigrant	Age
Female		
Male		

Chaper 2. Area of UAP

1. Today, how many lands are under the Producer's responsibility, in which it uses same productive resources as: manpower, machineries or yokes of oxen?	1) Manpower 2) Machineries or yokes of oxen
Include the lands in property that uses low any type of holding form and exclude the lands in property of other people.	

2. Which is it the area and holding form of the suitable lands that conforms UAP? (inside and outside of del Second Sample)

Land Number	Area			Form of Holding of the Land	Area
	Inside of SM	Outside of SM	Total		
Land 1					
Land 2					
Land 3					
Land 4					
Land 5					
Total Area					

Note) Holding Form of the Land: 1. Own with title, 2. Occupied without title, 3. Leased, 4 Sharecropping or Splitting, 5. as community or cooperation, 6. another holding form

Chapter 3. Use of the Soil and Irrigation

Use of Soil

1. How many farmlands are under responsability of the producer nowadays?

Use of Farmland / Lands	Area of Permanent or Perennial Crop	Area of Transitory or short cycle Crop	Area of: Fallow or Stubble	Area of Rest	Area of Cultivated Grass	Area of Natural Grass	Area of Paramo	Area of: Scrub and Forests	Area of Other Use	Total Area
Land 1										
Land 2										
Land 3										
Land 4										
Land 5										
Total of Lands										

2. Condition of Farmland: Depth of the arable layer of the cultivated land? Is the contexture of the soil hard (CANGAGUA) or soft?

Lands	Slope (1). Moderate , 2). Average , 3). Strong)	Contexture (1). Hard, 2). Soft)	Depth (cmts)
Land 1			
Land 2			
Land 3			
Land 4			
Land 5			
Total of Lands			

Note) Slope : 1) Moderate (grades), 2) Average (until grades), 3) Strong (until grades .)

Infraestructure of Irrigation

3. Have facilities for irrigation?	1) Yes – Continue 2) No – Pass to Chapter4.
Fulfill information about all lands that you own..	
4. Which is the main irrigation system that is used?	1) Drip , 2) Sprinkler, 3) Pump, 4) Gravity, 5) Other
5. Area of the irrigated land with these facilities? (unit: ha)	
6. Where does mainly the water used for irrigation comes from?	1) Irrigation canal, 2) River, stream, marsh, 3) Well, 4) Reservoir of rain water , 5) Private small pond

Lands	Hhave facilities for irrigation?	Which is the main irrigation system that is used?	Area of the land irrigated with these facilities?	Where does mainly the water used for irrigation come from?
Land 1				
Land 2				
Land 3				
Land 4				
Land 5				
Total of Lands				

Chapter 4. Permanent Crops

Cultivation and Harvest

1. Did he/she have permanent or perennial cultivations in forest or fruit plantations, between June 1, 2008 and May 30, 2009?	1) Yes – Continue, 2) No – Pass el Chapter 5

Nº of land	Name of Crop	Condition of Crop 1) Single, 2) Mixed, 3) Greenhouse	Nº of order of Mixed Cropping	Seeds of more use 1) Common 2) Improved 3) Certified	Dates of		Area		See note.
					Sowing	Harvests	Sowed	Harvested	

2. If the harvested area is smaller than the sowed area, what is the main reason of the lose?	1) Drought , 2) Freeze 3) Plagues , 4) Diseases , 5) Low price, 6) Migration , 7) Other

Practice in the cultivation 1) Si, 2) No			Name of dispersed trees in age of productive	Production Among one year			
Use of Irrigation	Application of fertilizers	Phytosanitary Treatment		Quantity of harvest	Unit of the harvest (kg)		Primary state of the harvested product Fresh or dry
					Name	Equivalence in pounds	Name

3. The quantity of crop had improved?	1) Yes – Continue, 2) No – Pass to Question 5.
4. How much percentage of the quantity was improved? a) 0-30%, b) 30-50%, o c) more than 50%?	a) 0-30%, b) 30-50%, c) more than 50%
5. Was the quantity of crop decreased?	1) Yes – Continue, 2) No. – Pass to Question 8.
6. How much was the decrease of the quantity?	a) 0-30%, b) 30-50%, c) more than 50%
7. What was the main reason of the production decrease?	1) Drought , 2) Freeze , 3) Plagues , Diseases , 4) Low price, 5) Emigration , 6) Other

Sales and Movement among June 1 2008 and May 30 the 2009

8. How much of each permanent crop was sold?
9. Did he/she sold directly or through middleman?
10. Where did you sell it?
11. How much of each permanent crop did you consume?

Quantity of Sold One	Unit of measure of the sales				Self-consumption, seed, commercialization	Primary state of the sold product
	Name	Equivalence in pounds	Sold price	To where it was sold?		Name

Chapter 5. Transitory Crops

Cultivation and Harvest

1. Did you sow some transitory or short cycle crop (including fodder) to harvest between June 1, 2008 and May 30, 2009?	1) Yes – Continue, 2) No – Pass to Question 6

Nº of land	Name of Crop	Condition of Crop 1) Single, 2) Mixed, 3) Greenhouse	Seeds of more use 1) Common 2) Improved 3) Certified	Dates of		Area		See Note
				Sow	Harvest	Sowed	Harvested	

2. If the harvested area is smaller than the sowed area, what was the main reason of the lose?	1) Drought , 2) Freeze 3) Plagues , 4) Diseases , 5) Low price, 6) Migration , 7) Other

Practice in the cultivation 1) Yes, 2) No			Name of dispersed trees in age of productive	Production Among one year			
Use of Irrigation	Use of Irrigation	Use of Irrigation		Quantity of harvest	Unit of the harvest (kg)		Primary state of the harvested product Fresh or dry
					Name	Equivalence in pounds	Nombre

3. Has the quantity of crop improved?	1) Yes – Continue, 2) No – Pass to Question 5.
4. How much percentage of the quantity was improved; a) 0-30%, b) 30-50%, o c) more than 50%?	a) 0-30%, b) 30-50%, c) more than 50%
5. Has the quantity of crop decreased?	1) Yes – Continue, 2) No. – Pass to Question 8.
6. How much percentage of the quantity was decreased: a) 0-30%, b) 30-50%, o c) more than 50%?	a) 0-30%, b) 30-50%, o c) more than 50%
7. What was the main reason of the decrease?	1) Drought , 2) Freeze , 3) Plagues , Diseases , 4) Low price, 5) Emigration , 6) Other

Sales and Movement among June 1, 2008 and May 30, 2009

6. How much of each transitory crop was sold?
7. Did he/she sold directly or through middleman?
8. Where did you sell it?

6. How much of each transitory crop was consumed?

Quantity of Sold One	Unit of measure of the sales				Self-consumption, seed, commercialization	Primary state of the sold product
	Name	Equivalence in pounds	Name	To where it was sold?		Nombre

Chapter 6. Grass Cropping

Cultivation and Harvest

1. Were grass being cultivated between June 1, 2008 and May 30, 2009?	1) Yes – Continue, 2) No – Pass to Question 7.

Number of the Land	Name of the Cultivated Grass	Condition of the Grass 1. Single, 2. Mixed	State of the grass during years	Area with the grass
			Total area	

Chapter 7. Medicinal plant

Cultivation and Harvest

1. Did medicinal plants sowed to be harvested between June 1, 2008 and May 30, 2009?	1) Yes – Continue, 2) No – Pass to Question 8

Number of Land	Name of Crop	Condition of Crop 1) Single, 2) Mixed, 3) Greenhouse	Seeds of more use 1) Common 2) Improved 3) Certified	Dates of		Area		See Note
				Sowed	Harvested	Sowed	Harvested	

2. If the harvested area is smaller than the sowed area, What was the main reason of the production decrease?	1) Drought , 2) Freeze 3) Plagues , 4) Diseases , 5) Low price, 6) Migration , 7) Other

Practice in the cultivation 1) Yes, 2) No			Name of dispersed trees in age of productive	Production Among one year			
Use of Irrigation	Use of Irrigation	Use of Irrigation		Quantity of harvest	Unit of the harvest (kg)		Primary state of the harvested product Fresh or dry
					Name	Equivalence in pounds	Nombre

3. Has the quantity of crop improved?	1) Yes – Continue, 2) No – Pass to Question 5.
4. How much was improved; a) 0-30%, b) 30-50%, o c) more than 50%?	a) 0-30%, b) 30-50%, or) more than 50%
5. Has the quantity of crop decreased?	1) Yes – Continue, 2) No. – Pass to Question 8.
6. How much was the decrease: a) 0-30%, b) 30-50%, o c) more than 50%?	a) 0-30%, b) 30-50%, or c) more than 50%
7. What was the main reason of the decrease?	1) Drought , 2) Freeze , 3) Plagues , Diseases , 4) Low price, 5) Emigration , 6) Other

Sales and Movement among June 1, 2008 and May 30, 2009

6. How much of each transitory crop was sold?
7. Did he/she sell directly or through middleman?
8. Where did you sell it?
9. How much of each medicinal plant was consumed?

Quantity of Sold One	Unit of measure of the sales				Self-consumption, seed, commercialization	Primary state of the sold product
	Name	Equivalence in pounds	Sold price	To where it was sold?		Name

Chapter 8. Beekeeping

Production of Poultry

1. Did he/she have poultry production between June 1, 2008 and May 30, 2009?	1) Yes – Continue, 2) No – Pass to Question 9

Number of Land	Number of Beehives	Condition of Beehive 1) Single, 2) Mixed, 3) Greenhouse	Source of honey	Dates of		Annual production (lbrs)	Qualification (1)Yes, 2)No)	Institution
				Beginning	Shipping			

2. Has the quantity of crop improved?	1) Ye – Continue, 2) No – Pass to Question 4.
3. How much was improved; a) 0-30%, b) 30-50%, or c) more than 50%?	a) 0-30%, b) 30-50%, or c) more than 50%
4. Has the quantity decreased?	1) Yes – Continue, 2) No. – Pass to Question 9.
5. How much was the production decrease: a) 0-30%, b) 30-50%, or c) more than 50%?	a) 0-30%, b) 30-50%, or c) more than 50%
6. What was the main reason of the decrease?	1) Drought, 2) Freeze, 3) Plagues , 4) Diseases, 5) Low price, 5) Emigration , 6) Other

Sales and Movement among June 1, 2008 and May 30, 2009

7. How much was sold?
8. Did he/she sold directly or through middleman?
9. Where did you sell it?
10. How many of each medicinal plant was consumed?

Quantity of Sold One	Unit of measure of the sales				Self-consumption, seed, commercialization	Primary state of the sold product
	Name	Equivalence in pounds	Name	To where it was sold?		Name

Chapter 9. Bovine Livestock

Production

1. As of Today, do you own bovine livestock or other people's livestock under the responsibility of Producer in UAP? Refer the total area informed in the Chapter 2.	1) Yes – Continue, 2) No – Pass to sales and movement if you had livestock in the year, in case of contrary, pass to Chapter 10.
2. What is the total number of heads owned by yourself and other people's livestock existent in UAP?	
Nº of Own Livestock :	Nº of Other People's Livestock :

3. As of Today, what is the number of heads of bovine livestock owned by yourself and other people's heads for race, sex, and age that are inside UPA?

Race of livestock-bovine	Total Nº of males and females	Nº of males			Nº of females		
		Less than 1 year of age (Calves)	From 1 year to less than 2 years of age (Tortes)	More than 2 years or age (Bulls)	Less than 1 year of age (Calves)	From 1 year to less than 2 years of age (Tortes)	More than 2 years or age (Bulls)
Creole							
Crossbreed without registration							
Crossbreed with registration							
Pure blood of meat							
Brahman (or zebu)							
GYR							
Nelore							
Other							
Pure blood of milk							
Holstein Freisan							
Jersey							
Other							
Pure blood of double							
Brown Swiss							
Charolois							
Normando							
Simenthal							
Other							
Total Livestock							

Sales and Movement of Own Bovine Livestock between June 1, 2008 and May 30, 2009

4. How many heads of bovine livestock were born?

5. How many abortions was that?

Purchases , Losses , Sacrifices and Sales of Bovine Livestock	Total of bovine livestock	Less than 1 year of age (Calves)	From 1 year to less than 2 years of age (Tortes and cattle)	More than 2 years or age (Bulls and cows)
Number of heads purchaseed				
Number of heads lost by death				
Number of heads lost by other causes				
Number of heads sacrificed in UPA				
Number of sold heads				

6. Value of purchase and sale?

	Price of Purchase	Selling Price
Less than 1 year of age (Calves)		
From 1 year to less than 2 years of age (Tortes and cattle)		
More than 2 years or age (Bulls and cows)		
Other sale forms / processed product		

Management and Care of the Bovine Livestock Owned between June 1, 2008 and May 30, 2009

7. Which was the main form of managing livestock?	1) Pasturage, 2) Tethering, 3) Electric Fences, 4) Another form of management
8. Which was the main form of feeding livestock?	1) Grass, 2) Silage, 3) Hay, 4) Banana, 5) Balanced feed, 6) Other
9. Did it use mineral salts?	1) Yes, 2) No
10. Which was the main form of reproduction of the livestock?	1) Free mounting, 2) Controlled mounting , 3) Artificial insemination , 4) Transfer of embryos , 5) Not applicable
11. Did the livestock deworm?	1) Yes – Continue, 2) No – Pass to Question 14.
12. Which was the main form of deworming?	1) Externally , 2) Internally , 3) Both methods
13. Did the livestock vaccinate?	1) Yes – Continue, 2) No – Pass to Question 19.
14. Did the cattle apply vaccine for the mouth and foot disease?	1) Yes – Continue, 2) No – Pass to Question 17
15. How many times did it vaccinate the cluster against the mouth and foot disease?	1) Once, 2) twice
16. Did it apply vaccine three times?	1) Yes, 2) No
17. Did it apply vaccines for other diseases?	1) Yes, 2) No
18. Did it detect cases of mouth and foot disease in the cluster?	1) Yes, 2) No

Milk Production of Yesterday

19. Did you collect cow milk yesterday?	1) Yes – Continue, 2) No – Pass to Chapter 10
20. How many times did you collect milk?	time(s)
21. Which was the method used for milking?	1) Manual, 2) Mechanic
22. How much liters of milk did you obtain in total?	liter(s)
23. Which was the main destination of the production of milk?	1) Sold in liquid, 2) Consumption in the UPA, 3) Diet, 4) Processed in the UPA, 5) Dedicated to other ends
24. Are milky products sold directly or indirectly through middleman?	1) Direct, 2) Middleman
25. Average daily production?	liter(s)

Chapter 10. Swine Production

Production

1. In now days, is there any pork owned by yourself or other person's under the responsibility of a producer in UAP? Refer the total surface informed in chapter 2.	1. Yes– Continue, 2. No – Pass to selling and movement if you owed pork in the year. If not, go to chapter 11.
2. How much is the total pork that you own nowadays?	heads

3. How much is the total pork you own nowadays by race, sex and age?

Race	Total Number	Less than 2 months (Female and Male)	2 months or more (Female and Male)	Destinated for Reproduction	
				Female	Male
Criollos					
Mixed					
Pure					

Selling and Movement of Swine Owned by Yourself Between June 1st of 2008 and Mayo 31st of 2009

4. How much porks borned alive?

Bying, Losses, Sacrificed and Sold Suines	Total Number of suines	Less than 2 months (Female and Male)	More than 2 Months or More (Female and Male)
Number of suines buyied			
Number of suines lost by death			
Number of suines lost by other causes			
Number of suines sacrificed in the UAP			
Number of suines sold			

5. How much was the value of selling and buying?

	Buying Price	Sellig Price
Less than 2 months (Female and male)		
2 months or more (Female and male)		
Other forms of selling / processed products		

Management and Care of the Owned Swine Between June 1st of 2008 to May 31st of 2009

6. What was the main form to feed the porks?	1) Balanced, 2) Banana, 3) House Residues, 4) Rice Powder, 5) Others
7. What was the main form of suine reproduction?	1) Free mounting, 2) Controlled mounting, 3) Artificial insemination, 4) Not applicable
8. Did you take parasites of the swines?	1) Yes– Continue, 2) No – Go to question 10
9. How you took parasites of the suines?	1) External, 2) Internal, 3) Both
10. Did you vaccinate the suines?	1) Yes– Continue, 2) No – Go to question 14.
11. Did you vaccinate against Foot and Mouth Disease?	1) Yes– Continue, 2) No – Go to question 13.
12. How many times did you vaccinate against Foot and Mouth Disease?	times
13. Did you apply any other vaccine against other	1) Yes, 2) No

diseases?	
14. Did you detect cases of foot and mouth disease for the pork?	1) Yes, 2) No

Chapter 11. Ovine Production

1. Are ovine owned by yourself or by others under the responsibility of the producer in the UAP nowadays? Refer the total surface in chapter 2.	1) Yes– Continue, 2) No – Go to selling and movement if there were ovines in the year. If not go to chapter 12.
2. How much is the total number of ovines in the UAP?	

3. How much is the number of ovines by race and age nowadays?

Race	Total Number	Less than 2 months (Female and male)	2 months or more (Female and Male)
Criollos			
Mixed			
Llana			
Pure			

Selling and Movement of Ovine Owned by Yourself between June 1st of 2008 to May 31st of 2009

4. How may ovines borned alive?

Buying, losses, sacrificed and sold ovines	Total Number	Less than 2 months (Female and male)	2 months or more (Female and Male)
Number of buyed ovines			
Number of ovines lost by death			
Number of ovines lost by other causes			
Number of ovines sacrificed in the UAP			
Number of sold ovines			
Number of ovines for wool buyed			
Number of ovines for wool lost by death			
Number of ovines for wool lost by other causes			
Number of ovines for wool sacrificed in the UAP			
Number of ovines for wool sold			

5. How much was the value of buying and selling?

	Buying Price		Selling Price	
	Ovine	Wool	Ovine	Wool
Less thatn 2 months (Female and male)				
2 months or more (Female and male)				
Other forms of selling / processed products				

Management and Care of Ovine Owned between June 1st of 2008 and May 31st of 2009

6. What was the main form of feeding the ovines?	1) Pasture, 2) Balanced, 3) Domestic Residues , 4) Others
7. What was the main form of reproduction?	1) Free mounting, 2) Controlled mounting, 3) Artificial insemination, 4) Not applicable
8. Did you take parasites of the ovine?	1) Yes– Continue, 2) No – Go to question 10
9. How was the main form to take parasites from the ovine?	1) External, 2) Internal, 3) Both
10. Did you vaccinate the ovine?	1) Yes– Continue, 2) No – Go to question 15.
11. Did you vaccinate against foot and mouth disease?	1) Yes– Continue, 2) No – Go to question 13.
12. How many times you vaccinated against foot and mouth disease?	times
13. Did you apply triple vaccine?	1) Yes, 2) No.
14. Did you apply any othere vaccine?	1) Yes, 2) No.
15. Did you detect any case of foot and mouth disease?	1) Yes, 2) No.

Chapter 12. Other Species

Production

1. Are there other species nowadays as: ass, horses, sheep, guinea pigs... under the responsibility of a producer in the UAP?	1) Yes– Continue, 2) No – Go to selling and movement if you have other species of animal. If not go to chapter 13.

2. Existence of animal by specie nowadays

	Ass	Horse	Mule	Caprine	Alpacas	Llamas	Sheep	Cuyes
Total Number								

Selling between June 1st of 2008 and May 31st of 2009

	Ass	Horse	Mule	Caprine	Alpacas	Llamas	Sheep	Cuyes
Number of sold animals								
Selling price								

Chapter 13. Poultry

Production and Selling

1. Are there any poultry production unde the responsibility of a producer in the UAP nowadays?	1) Yes– Continue, 2) No – Go to consumption and selling if you had it in the past 3 years. If not go to chapter 14.

Birds and eggs	Existance of poultry nowadays	Manegement, consumption and selling of poultry nowadays				Selling
	Total Number	Buyied Number	Death Number	Number for self - consumption	Selling price	
Birds produced in field						
Chicken						
Cock and hen						
Ducks						
Turkeys						
Other birds						
Production of hen eggs in the last 7 days of the interview day.						
Inhouse Birds						
Pollitas (less than 4 months)						
Pollonas (4 to 16 months)						
Egg producer (more than 16 months)						
Procreators of fertile light eggs						
Procreators of fertile heavy eggs						
Fattening chickens						
Ortriches						
Turkeys						
Quails						
Other birds						
Producción de Huevos de gallina en los últimos siete días anteriores al día de la entrevista						

Inhouse Artificial Incubation

2. Is there incubators and/or reproduction houses in the UAP nowadays?	1) Yes – Continue, 2) No. – Go to chapter 14.

Incubators (Nowadays)		Reproduction houses (Nowadays)		Eggs and incubated young birds (between June 1st of 2008 and May 31st of 2009)	
Number	Total capacity in eggs number	Number	Total capacity in eggs number	Fertile eggs	Incubated young birds

Chapter 14. Population and Manpower

Information of the members of the Producer family who live in UAP.

	Relationship with the Producer	Does he/she participate in making decisions on the handling of UAP? 1) Yes, 2) No.	Age	Sex	Last year of approved formal instruction	Register the information of the working kept previous to the day of the survey only for the home members bigger than 10 years old.				
						If he/she worked inside UAP in Agricultural Activities		If he/she worked outside of UAP		If he/she didn't work neither inside of neither outside of UAP
						Number of weekly hours	Was it remunerated? 1) Yes, 2) No.	Number of hours in agricultural activities	Number of hours in NON agricultural activities	Was it looking for work? 1) Yes, 2) No.
1	Producer									
2										
3										
4										
5										
6										
7										
8										
9										
10										
11										
12										
13										

Permanent Remunerated workers in UAP today

Personal Permanent	Administrator	Steward	Farmer	Cattle	Other Professions	Tractorist, driver or similar	Peon / day loborer	Other permanent employees
Total workers								
Men								
Women								
Smaller than 18 years olde								
Average monthly wage for person								

Occasional Remunerated workers in UAP Interviewed on the day

Personal Occasional	Farmer	Cattle	Other Professions and/or Technicians	Tractorista, driver or similar	Peon / day loborer	Other Occasional Workers
Total workers						
Men						
Women						
N° of working days						
Average Wage per day for person						

Chapter 15. Income and Expenditure

1. How much was the monthly expenditure he/she has for the following items?

Total Expenditure	Food	Basic Services	Education	Transport	Clothing allowance	Health	Others

2. How much was the monthly income he/she have for following items?

Agriculture	Cattle	QQ.DD	Processing	Interior Migration	International Migration.

3. Who takes the decisions to use the resources coming from the agricultural activity?	1) Man 2) Woman 3) Both

Chapter 16. Causes of the Agriculture Low Productivity

1. What is the cause of the agriculture low productivity? Select 5 priorities from following items.

Items	Causes	Yes or No	Scale
Soil	- Low fertility of Soil		
	- Degradation of the soil due to cultivation		
	- Degradation of the soil due to development in the area of Paramo/ forest		
	- Erosion of the soil in their farmlands		
	- Lack of fertilization		
	- No practices of crop rotation		
Agricultural technology	- Ignorance of agricultural ecology		
	- Control of plagues and disease		
	- No machinery for cultivation		
	- Cultural labor		
	- Access to good quality seeds		
	- High cost of farming , price of fertilizers, etc .		
	- Non use of the agricultural calendar.		
Water Resource	- Lack of water for cultivation		
	- No irrigation system		
	- Lack of labor		
Topography	- Cultivación surface is narrow		
	- Dispersion of Land for cultivation		
Commercialization	- Access to sell agricultural products		
	- Place for Commercialization (Citizen fair, Market, Stores)		
Agricultural Supporting Service	- Access to Credit		
	- Access to Qualification and Transfer of Agricultural Technology		
	- Access to Qualification in Commercialization and Marketing (Gathering, transport, sale)		
	-		

2. 5 bigger importance and 1 low importance	
1st bigger importance	
2nd bigger importance	
3rd bigger importance	
4th bigger importance	
5th bigger importance	
1 low importance	

Chapter 17. Causes of low productivity of animal husbandry

1. What is cause of the low productivity in the animal husbandry? Select 3 priorities from the following items.

Items	Causes	Yes or No	Scale
Soil	- Low fertility of Soil		
	- Degradation of the soil due to cultivation		
	- Degradation of the soil due to development in the area of Paramo/ forest		
	- Erosion of the soil in their farmlands		
	- Lack of fertilization		
	- No practices of crop rotation		
Technology of animal husbandry	- Lack of knowledge and technology of the animal husbandry		
	- High cost of inputs		
	- Lack of Technical assistance		
	- High cost of the technical assistance		
	- Genetics of the animals		
	- High cost of equipment of insemination		
	- Quality Control of the primary matter		
	- Non application of agricultural calendar		
	- Access to seeds of good quality		
Water Resources	- Lack of irrigation and water for grass		
	- No irrigation system		
	- Bad quality of water		
	- Wrong use of the water		
Topography	- Cultivation surface is narrow		
	- Dispersion of Land for cultivation		
Commercialization	- Access to sell livestock products		
Agricultural Supporting Service	- Access to Credit		
	- Qualification access and transfer of livestock technology		
	- Access to Qualification in Commercialization and Mechanism (Gathering, transport, sale)		

2. 5 bigger importance and 1 low importance

1st bigger importance	
2nd bigger importance	
3rd bigger importance	
4th bigger importance	
5th bigger importance	
1 low important	

Chapter 18. Demand of the necessities from Producer in UAP

1. 5 main causes of low productivity to outline 5 possible solutions for agricultural and animal husbandry.

1st possible solution	
2nd possible solution	
3rd possible solution	
4th possible solution	
5th possible solution	

2. How can the following institutions solve the low productivity?

Institution	Forms of support
MAGAP	
INDA	
INAR	
BNF	
INIAP	
INCCA	
CFN	
SESA(AGRO CALIDAD)	
CADERS	
PROFORESTAL	
Others	

Results of the Surveys in the 4 Provinces

The following table shows results of a questionnaire, in terms to know the correlation between each province. The results not consider the attribution of the interviewed person.

1. Sex of the producer

Table 1. Sex of the producer

	COTOPAXI		TUNGURAHUA		BOLIVAR		CHIMBORAZO		Total	
	No.	%	No.	%	No.	%	No.	%	No.	%
Male	224	68%	145	58%	149	60%	326	69%	844	65%
Female	105	32%	107	42%	99	40%	148	31%	459	35%
Total	329	100%	252	100%	248	100%	474	100%	1303	100%

The ratio of male and female producers is about 6 : 4 for TUNGURAHUA and BOLIVAR, and about 7 : 3 for COTOPAXI and CHIMBORAZO.

2. Final academic background of the producers

Table 2. Final academic background of the producers

	COTOPAXI		TUNGURAHUA		BOLIVAR		CHIMBORAZO		Total	
	No.	%	No.	%	No.	%	No.	%	No.	%
NO INSTRUCTION	107	32.5%	38	15.1%	56	22.6%	35	10.2%	236	20.1%
INITIAL	12	3.6%	6	2.4%	2	0.8%	34	9.9%	54	4.6%
INCOMPLETE PRIMARY	76	23.1%	59	23.4%	74	29.8%	63	18.3%	272	23.2%
PRIMARY COMPLETE	93	28.3%	114	45.2%	83	33.5%	154	44.8%	444	37.9%
SECUNDARY INCOMPLETE	19	5.8%	14	5.6%	9	3.6%	32	9.3%	74	6.3%
SECUNDARIY COMPLETE	19	5.8%	11	4.4%	16	6.5%	22	6.4%	68	5.8%
SUPERIOR NO UNIVERSITY	1	0.3%	1	0.4%	2	0.8%	1	0.3%	5	0.4%
UNIVERSITY	2	0.6%	9	3.6%	6	2.4%	3	0.9%	20	1.7%
Total	329	100.0%	252	100.0%	248	100.0%	344	100.0%	1173	100.0%

The interviewed population has an education lower than the complete primary in an average of 85.7%. It becomes as follow if ordering from the highest: Cotopaxi 87.5%, Bolívar 86.7%, Tungurahua86.1% and Chimborazo 83.1% .

3. Income

Table 3. Income

		Agriculture	Animal husbandry	Side Job	Agro industry	Interior Migration	International Migration	TOTAL
COTOPAXI	Valid	264	189	23	17	210	30	
	Invalid	81	156	322	328	135	315	
	Total	$61.54	$57.15	$28.26	$14.12	$138.30	$90.33	
	Adjust	$47.09	$31.31	$1.88	$0.70	$84.18	$7.86	$173.02
TUNGURAHUA	Valid	138	149	10	18	195	12	
	Invalid	114	103	242	234	57	240	
	Total	$114.56	$103.17	$57.20	$220.56	$196.27	$156.39	
	Adjust	$62.74	$61.00	$2.27	$15.75	$151.87	$7.45	$301.08
BOLIVAR	Valid	249	249	249	249	249	249	
	Invalid	0	0	0	0	0	0	
	Total	$61.84	$34.92	$1.39	$6.64	$50.99	$0.64	
	Adjust	$61.84	$34.92	$1.39	$6.64	$50.99	$0.64	$156.42
CHIMBORAZO	Valid	341	338	314	317	331	315	
	Invalid	4	7	31	28	14	30	
	Total	$94.41	$35.87	$3.39	$1.81	$111.90	$3.05	
	Adjust	$93.32	$35.14	$3.08	$1.67	$107.36	$2.78	$243.35
Average		$66.25	$40.60	$2.16	$6.19	$98.60	$4.68	$218.47

The income average from agriculture is bigger comparing to the agriculture and livestock sectors and it is remarkable in Chimborazo. On the contrary, it seems to have a balanced income for both sectors in Tungurahua. In general the livestock sector seems to have more income from selling milk daily, however the survey's results did not show it.

The side job and agro-industry doesn't have a big contribution in the average income.

Although various factors are compensated in the total, Bolívar counts only half of the income of Tungurahua and there is a great difference between provinces. However, the income from the agriculture sector of Bolívar is 80% of Tungurahua. This means that the difference comes from non-agricultural income.

4. Expenditures

Table 4. Expenditures

		Total expenditure	Food expense	Basic services	Education	Transport	Clothes	Health	Others
Tungurahua	Valid	252	252	247	165	214	179	147	15
	Invalid	0	0	5	87	38	73	105	237
	Mean	$152.48	$78.67	$9.84	$25.34	$22.50	$11.92	$15.62	$166.07
	Adjust	$151.47	$78.67	$9.64	$16.59	$19.11	$8.46	$9.11	$9.88
	(%)	100.0	51.9	6.4	11.0	12.6	5.6	6.0	6.5
	Total	$38,424.18	$19,826.00	$2,429.65	$4,180.75	$4,815.50	$2,132.82	$2,295.52	$2,491.00
Bolívar	Valid		249	249	249	249	249	249	249
	Invalid		0	0	0	0	0	0	0
	Mean	$156.29	$79.09	$6.63	$20.36	$16.32	$19.72	$12.90	$1.27
	(%)	100.0	50.6	4.2	13.0	10.4	12.6	8.3	0.8

Based on this table, half of the income of the families is used in food expense (2.60 dollars/day). The basic services would be related to the infrastructure level and while these expenses in Tungurahua are 10 dollars/month, in Bolívar is 7 dollars. The education and clothes costs are bigger in Bolívar and the expenses in transport occupy 10 to 13% of the total income.

5. Power to make decisions among the Producers

Table 5. Power to make decisions of the producers

	COTOPAXI		TUNGURAHUA		BOLIVAR		CHIMBORAZO		Total	
	No.	%	No.	%	No.	%	No.	%	No.	%
Male	47	13.6	11	4.4	27	11.9	21	6.1	106	9.1
Female	41	11.9	48	19.0	38	16.8	37	10.7	164	14.0
Both	257	74.5	193	76.6	161	71.2	287	83.2	898	76.9
Total	345	100.0	252	100.0	226	100.0	345	100.0	1,168	100.0

Approximately 80% of the producers make decisions in couple. A notable point is that women make decisions at most of the family excluded Cotopaxi. This could be the result of the migrant works.

6. Migrant works

Table 6. Migrant works

	COTOPAXI		TUNGURAHUA		BOLIVAR		CHIMBORAZO		Total	
	No.	%	No.	%	No.	%	No.	%	No.	%
Yes	35	10.6%	25	9.9%	51	20.8%	52	15.2%	163	13.9%
No	294	89.4%	227	90.1%	194	79.2%	291	84.8%	1006	86.1%
Total	329	100.0%	252	100.0%	245	100.0%	343	100.0%	1169	100.0%

		Male Migrant Workers				Female Migrant Workers			
		No	Average Age	Minimum Age	Maximum Age	No	Average Age	Minimum Age	Maximum Age
COTOPAXI	No	40	29.7	15.0	50.0	15	28.7	20.0	40.0
	%	72.7%				27.3%			
TUNGURAHUA	No	32	27.0	18.0	42.0	12	30.0	18.0	52.0
	%	72.7%				27.3%			
BOLIVAR	No	67	26.6	16.0	59.0	48	25.3	10.0	84.0
	%	58.3%				41.7%			
CHIMBORAZO	No	68	26.2	16.0	59.0	37	19.7	16.0	45.0
	%	64.8%				35.2%			

Bolívar's Migrant workers is the highest reaching 21%.

7. Lands ownership type by producer

Table 7. Lands ownership type by producer

Land Holding		1	2	3	4	5	6	Total
COTOPAXI	No	320.5	143.6	0.0	5.9	106.1	6.8	582.8
	%	55.0%	24.6%	0.0%	1.0%	18.2%	1.2%	100.0%
TUNGURAHUA	No	323.9	77.7	2.5	5.5	9.2	8.6	427.4
	%	75.8%	18.2%	0.6%	1.3%	2.1%	2.0%	100.0%
BOLIVAR	No	836.5	95.5	50.2	125.8	229.9	0.0	1337.9
	%	62.5%	7.1%	3.7%	9.4%	17.2%	0.0%	100.0%
CHIMBORAZO	No	345.0	92.9	0.8	7.6	2.2	0.6	449.1
	%	76.8%	20.7%	0.2%	1.7%	0.5%	0.1%	100.0%
Total	No	1826.0	409.7	53.4	144.8	347.4	16.0	2797.3
	%	65.3%	14.6%	1.9%	5.2%	12.4%	0.6%	100.0%

1. Registered owner, 2. Occupied without registration, 3. Rented, 4. Partnership, 5. Corporate land , 6. Another holding form

The provinces with larger quantity of owner with registered lands are Chimborazo and Tungurahua. Cotopaxi with occupied lands without title is 25%. Corporate lands is larger in Bolivar.

8. Form of Land Holding

Table 8. Form of Land Holding

	COTOPAXI		TUNGURAHUA		BOLIVAR		CHIMBORAZO		Total	
	No.	%	No.	%	No.	%	No.	%	No.	%
No response					22	4.2			22	0.8
Own with title	234	50.2	512	62.5	261	50.2	514	60.0	1,521	57.1
Occupied without title	74	15.9	257	31.4	40	7.7	312	36.4	683	25.7
Leased			7	0.9	18	3.5	3	0.4	28	1.1
Tenant or commission	5	1.1	30	3.7	75	14.4	19	2.2	129	4.8
Corporate land	148	31.8	6	0.7	103	19.8	2	0.2	259	9.7
Another holding form	5	1.1	7	0.9	1	0.2	7	0.8	20	0.8
Total	466	100.0	819	100.0	520	100.0	857	100.0	2,662	100.0
No. of land	1.35		3.25		2.09		2.48		2.24	

The farmers have their lands in several places. The last line of the above table indicates the ratio between holding number of land and the number of producers, which represents the average number of land owed by the producers. This means that each producer has approximately of 2 or 3 lands in the 4 provinces. Tungurahua with the smallest land holding in the Sierra region has the most separated lands holders among the 4 provinces. We can get some idea about *minifundio* (considerably small land holding) from this fact.

The aspect of land unit changes completely when comparing the indexes of the land holding form and by farmer. The average of the 4 provinces that owns registered land is 60%. The highest index is of Tungurahua, that leads the other provinces.

9. Land Use Area

Table 9. Land use area

		Permanent or Perennial crop	Short-term crop	Abandoned/ desolated land	Fallow	Artificial pasture	Natural pasture	High plateau	Woodland and forest	Other uses	Total
COTOPAXI	ha	1.3	216.3	24.8	98.1	45.1	120.2	61.5	14.2	3.9	585.3
	%	0.2%	37.0%	4.2%	16.8%	7.7%	20.5%	10.5%	2.4%	0.7%	100.0%
TUNGURAHUA	ha	35.9	80.8	3.6	26.8	122.7	131.7	14.3	24.7	0.6	441.1
	%	8.1%	18.3%	0.8%	6.1%	27.8%	29.9%	3.2%	5.6%	0.1%	100.0%
BOLIVAR	ha	28.8	361.2	124.1	141.4	203.7	386.5	19.0	119.4	4.4	1388.6
	%	2.1%	26.0%	8.9%	10.2%	14.7%	27.8%	1.4%	8.6%	0.3%	100.0%
CHIMBORAZO	ha	24.8	243.6	58.8	24.7	53.0	40.4	55.7	10.1	1.4	512.5
	%	4.8%	47.5%	11.5%	4.8%	10.3%	7.9%	10.9%	2.0%	0.3%	100.0%
Total	ha	90.8	901.8	211.4	291.0	424.5	678.9	150.4	168.4	10.3	2927.4
	%	3.1%	30.8%	7.2%	9.9%	14.5%	23.2%	5.1%	5.8%	0.4%	100.0%

10. Irrigation facilities

Table 10. Irrigation facilities

	COTOPAXI		TUNGURAHUA		BOLIVAR		CHIMBORAZO		Total	
	No.	%	No.	%	No.	%	No.	%	No.	%
With	34	10.3%	167	66.5%	7	3.0%	182	53.4%	390	33.8%
Without	295	89.7%	84	33.5%	227	97.0%	159	46.6%	765	66.2%
Total	329	100.0%	251	100.0%	234	100.0%	341	100.0%	1155	100.0%

It stands out that the land with irrigation in Bolívar is only 3%. On the other hand, 2/3 in Tungurahua is irrigated. These are the same results of the Census in 2000.

11. Irrigation system

Table 11. Irrigation system

	COTOPAXI		TUNGURAHUA		BOLIVAR		CHIMBORAZO		Total	
	No.	%	No.	%	No.	%	No.	%	No.	%
Drip	2	5.7%	4	2.4%	0	0.0%	10	5.6%	16	4.1%
Sprinkler	3	8.6%	6	3.6%	4	57.1%	10	5.6%	23	5.9%
Pumping	0	0.0%	2	1.2%	0	0.0%	2	1.1%	4	1.0%
Gravity	30	85.7%	157	92.9%	2	28.6%	156	87.2%	345	88.5%
Other	0	0.0%	0	0.0%	1	14.3%	1	0.6%	2	0.5%
Total	35	100.0%	169	100.0%	7	100.0%	179	100.0%	390	100.0%

The most popular irrigation type is the gravity system. The drip irrigation, a way of saving water, exists in approximately 6% in Cotopaxi and Chimborazo, and also there are sprinkler irrigation system in a moderate percentage. Since there is many gravity irrigation system in the slopes, it would be possible to enlarge the irrigated area if applying the water saving system by using the difference of elevation in the slopes,.

12. Water resources of irrigation

Table 12. Water resources of irrigation

	COTOPAXI		TUNGURAHUA		BOLIVAR		CHIMBORAZO		Total	
	No.	%	No.	%	No.	%	No.	%	No.	%
Irrigaion canal	15	45.5%	142	84.5%	0	0.0%	171	95.0%	328	84.5%
Rivers (atream, creek)	17	51.5%	7	4.2%	5	71.4%	8	4.4%	37	9.5%
Well	0	0.0%	0	0.0%	1	14.3%	0	0.0%	1	0.3%
Reservoir of raine water	0	0.0%	4	2.4%	0	0.0%	0	0.0%	4	1.0%
Small pond	1	3.0%	15	8.9%	1	14.3%	1	0.6%	18	4.6%
Total	33	100.0%	168	100.0%	7	100.0%	180	100.0%	388	100.0%

The majority of the water resources is rivers (includes tributaries). However, Tungurahua stands out again here. About 9% take water from the resources by their own ideas. There is some samples of idea here to improve the irrigation.

13. Existence of short-term crop cultivations in the last year

Table 13. Existence of short-term crop cultivations in the last year

	COTOPAXI		TUNGURAHUA		BOLIVAR		CHIMBORAZO		Total	
	No.	%	No.	%	No.	%	No.	%	No.	%
Yes	253	76.9%	155	74.9%	144	60.5%	306	89.5%	858	76.9%
No	76	23.1%	52	25.1%	94	39.5%	36	10.5%	258	23.1%
Total	329	100.0%	207	100.0%	238	100.0%	342	100.0%	1116	100.0%

The cultivation rate is 89.5% in Chimborazo, approximately 77% in Cotopaxi and Tungurahua, while in Bolívar is 60%.

14. Presence of mixed cropping

Table 14.1. Permanent cultivations

	COTOPAXI		TUNGURAHUA		BOLIVAR		CHIMBORAZO		Total	
	No.	%	No.	%	No.	%	No.	%	No.	%
Single	0		55	98.2%	19	100.0%	15	100.0%	89	98.9%
Mixed	0		1	1.8%	0	0.0%	0	0.0%	1	1.1%
Total	0		56	100.0%	19	100.0%	15	100.0%	90	100.0%

Table 14.2. Short-term cultivations

	COTOPAXI		TUNGURAHUA		BOLIVAR		CHIMBORAZO		Total	
	No.	%	No.	%	No.	%	No.	%	No.	%
Single	421	88.6%	227	78.8%	332	94.6%	670	92.2%	1650	89.6%
Mixed	54	11.4%	61	21.2%	19	5.4%	57	7.8%	191	10.4%
Total	475	100.0%	288	100.0%	351	100.0%	727	100.0%	1841	100.0%

Tungurahua differs from the other 3 provinces. While in Tungurahua 1/5 is mixed cropping, in the

other 3 provinces it only reaches around 10% or less than that.

15. Crops

The variety of noted crops was of 48 and various crops are cultivated in the region. In the following table 15.2, as there are so many crops, crops counted less than 3 in total are not displayed

The top three crops in the four provinces are as the followings:

Cotopaxi: Potato, Bean and Barley (Total of three crops: 67.6 %)
TungurahUPAotato, Bean and Barley (Total of three crops:69.7%)
Bolívar: Corn, Wheat and Barley (Total of three crops: 75.7 %)
Chimborazo: Potato, Barley and Corn (Total of three crops: 53.2 %)

Tableo 15.1. Permanent crops

	COTOPAXI		TUNGURAHUA		BOLIVAR		CHIMBORAZO		Total	
	No.	%	No.	%	No.	%	No.	%	No.	%
Babaco	0		1	1.8%	0	0.0%	0	0.0%	1	1.1%
Greengage	0		1	1.8%	0	0.0%	0	0.0%	1	1.1%
Passion fruit	0		1	1.8%	0	0.0%	0	0.0%	1	1.1%
Blackberry	0		51	91.1%	12	63.2%	0	0.0%	63	67.0%
Tree tomato	0		0	0.0%	2	10.5%	3	15.8%	5	5.3%
Other Permanents	0		2	3.6%	5	26.3%	16	84.2%	23	24.5%
Total	0		56	100.0%	19	100.0%	19	100.0%	94	1

Table 15.2. Short-term crops

	COTOPAXI		TUNGURAHUA		BOLIVAR		CHIMBORAZO		Total	
	No.	%	No.	%	No.	%	No.	%	No.	%
Dry pea	8	1.7%	0	0.0%	9	2.6%	5	0.7%	22	1.2%
Tender pea	7	1.5%	2	0.7%	10	2.8%	24	3.3%	43	2.3%
Oats	2	0.4%	1	0.3%	0	0.0%	25	3.4%	28	1.5%
Broccoli	0	0.0%	0	0.0%	0	0.0%	9	1.2%	9	0.5%
Barley	68	14.3%	36	12.5%	51	14.5%	97	13.2%	252	13.6%
White onion	0	0.0%	14	4.9%	8	2.3%	0	0.0%	22	1.2%
Red onion	0	0.0%	2	0.7%	0	0.0%	2	0.3%	4	0.2%
Rye	0	0.0%	0	0.0%	0	0.0%	8	1.1%	8	0.4%
Chocho	41	8.6%	0	0.0%	1	0.3%	20	2.7%	62	3.4%
Cilantro	0	0.0%	1	0.3%	0	0.0%	24	3.3%	25	1.4%
Cabbage	0	0.0%	0	0.0%	1	0.3%	6	0.8%	7	0.4%
Cauliflower	0	0.0%	0	0.0%	0	0.0%	13	1.8%	13	0.7%
Dry Frijol	1	0.2%	0	0.0%	1	0.3%	2	0.3%	4	0.2%
Tender Frijol	1	0.2%	0	0.0%	0	0.0%	23	3.1%	24	1.3%
Dry bean	28	5.9%	0	0.0%	7	2.0%	28	3.8%	63	3.4%
Tender bean	52	10.9%	75	26.1%	8	2.3%	40	5.4%	175	9.5%
Lettuce	0	0.0%	0	0.0%	0	0.0%	34	4.6%	34	1.8%
Lentil	5	1.1%	0	0.0%	5	1.4%	16	2.2%	26	1.4%
Hard dry corn	10	2.1%	0	0.0%	1	0.3%	0	0.0%	11	0.6%
Corn soft choclo	11	2.3%	17	5.9%	73	20.8%	19	2.6%	120	6.5%
Soft dry corn	7	1.5%	0	0.0%	64	18.2%	67	9.1%	138	7.5%
Melloco	19	4.0%	6	2.1%	1	0.3%	5	0.7%	31	1.7%
Oca	18	3.8%	5	1.7%	1	0.3%	1	0.1%	25	1.4%
Potato	174	36.6%	118	41.1%	31	8.8%	208	28.3%	531	28.7%
Radish	0	0.0%	0	0.0%	0	0.0%	5	0.7%	5	0.3%
Cherry tomate	0	0.0%	0	0.0%	0	0.0%	15	2.0%	15	0.8%
Wheat	21	4.4%	0	0.0%	77	21.9%	12	1.6%	110	5.9%
Carrot	0	0.0%	8	2.8%	0	0.0%	20	2.7%	28	1.5%
Total	475	100.0%	287	100.0%	351	100.0%	736	100.0%	1849	100.0%

Most of the lands are cultivated with basic foods as potato, corn, barley and wheat. There are a few lands with frijol. It is possible that the frijol is considered associated cultivation and doesn't appear in the statistics.

By the way, in Tungurahua fruit culture is active, between 56 producers, 51 responded to have fruit culture cultivating blackberry. It shows that the blackberry is widely cultivated by small producers in Tungurahua.

16. Sold product

Table 16.1. Sold product - Permanent crops

	COTOPAXI		TUNGURAHUA		BOLIVAR		CHIMBORAZO		Total	
	No.	%	No.	%	No.	%	No.	%	No.	%
Blackberry	0	0	29	90.6%	12	85.7%	0	0.0%	41	82.0%
Tree tomato	0	0	0	0.0%	2	14.3%	3	75.0%	5	10.0%
Tomato	0	0	0	0.0%	0	0.0%	1	25.0%	1	2.0%
Rosy mallow	0	0	1	3.1%	0	0.0%	0	0.0%	1	2.0%
Greengage	0	0	1	3.1%	0	0.0%	0	0.0%	1	2.0%
Zambo	0	0	1	3.1%	0	0.0%	0	0.0%	1	2.0%
Total	0	0	32	100.0%	14	100.0%	4	100.0%	50	100.0%

Table 16.2. Sold product – Short-term crops

	COTOPAXI		TUNGURAHUA		BOLIVAR		CHIMBORAZO		Total	
	No.	%	No.	%	No.	%	No.	%	No.	%
CORN	16	4.0%	13	5.0%	17	8.1%	62	11.1%	108	7.5%
CORN CHOCLO	2	0.5%	0	0.0%	36	17.1%	0	0.0%	38	2.7%
WHEAT	22	5.5%	0	0.0%	60	28.6%	2	0.4%	84	5.9%
DRY CORN	5	1.2%	0	0.0%	19	9.0%	0	0.0%	24	1.7%
BARLEY	59	14.7%	31	11.9%	37	17.6%	78	13.9%	205	14.3%
POTATO	151	37.7%	108	41.4%	10	4.8%	156	27.9%	425	29.7%
WHITE ONION	0	0.0%	16	6.1%	2	1.0%	1	0.2%	19	1.3%
PEA	16	4.0%	2	0.8%	10	4.8%	20	3.6%	48	3.4%
BEANS	60	15.0%	68	26.1%	9	4.3%	59	10.5%	196	13.7%
OATS	1	0.2%	1	0.4%	0	0.0%	17	3.0%	19	1.3%
LENTIL	5	1.2%	0	0.0%	3	1.4%	12	2.1%	20	1.4%
CHOCHO	25	6.2%	0	0.0%	1	0.5%	11	2.0%	37	2.6%
YELLOW CARROT	0	0.0%	7	2.7%	0	0.0%	12	2.1%	19	1.3%
RYE	0	0.0%	0	0.0%	0	0.0%	5	0.9%	5	0.3%
MELLOCO	16	4.0%	4	1.5%	1	0.5%	3	0.5%	24	1.7%
FRIJOL	2	0.5%	0	0.0%	0	0.0%	22	3.9%	24	1.7%
BROCCOLI	0	0.0%	0	0.0%	0	0.0%	8	1.4%	8	0.6%
LETTUCE	0	0.0%	0	0.0%	0	0.0%	29	5.2%	29	2.0%
CAULIFLOWER	0	0.0%	0	0.0%	0	0.0%	11	2.0%	11	0.8%
TOMATO	0	0.0%	0	0.0%	0	0.0%	12	2.1%	12	0.8%
CABBAGE	0	0.0%	0	0.0%	0	0.0%	6	1.1%	6	0.4%
CORIANDER	0	0.0%	1	0.4%	0	0.0%	20	3.6%	21	1.5%
HARD CORN	4	1.0%	0	0.0%	0	0.0%	0	0.0%	4	0.3%
OCA	13	3.2%	5	1.9%	0	0.0%	1	0.2%	19	1.3%
Total	401	100.0%	261	100.0%	210	100.0%	560	100.0%	1432	100.0%

The tendency is the same for the cultivations and for the largest sold crops. The high-ranked four crops occupy 68 % of the total crops.

17. Cases that the harvested area has been smaller than the cultivated area

Table 17.1. Cases that the harvested area has been smaller than the cultivated area (Permanent crops)

	COTOPAXI		TUNGURAHUA		BOLIVAR		CHIMBORAZO		Total	
	No.	%	No.	%	No.	%	No.	%	No.	%
Yes	0	0.0%	9	18.4%	0	0.0%	0	0.0%	9	13.8%
No	0	0.0%	40	81.6%	12	100.0%	4	100.0%	56	86.2%
Total	0	0.0%	49	100.0%	12	100.0%	4	100.0%	65	100.0%

Table 17.2. Cases that the harvested area has been smaller than the cultivated area (Short-term crops)

	COTOPAXI		TUNGURAHUA		BOLIVAR		CHIMBORAZO		Total	
	No.	%	No.	%	No.	%	No.	%	No.	%
Yes	94	22.5%	131	47.0%	63	23.0%	121	19.8%	409	25.9%
No	323	77.5%	148	53.0%	211	77.0%	491	80.2%	1173	74.1%
Total	417	100.0%	279	100.0%	274	100.0%	612	100.0%	1582	100.0%

25.9 % of the cultivated area were not harvested on average. The corresponding highest value was in Tungurahua (47.0%) and the lowest was in Chimborazo (19.8%).

The percentage of losses and their reasons are treated later.

18. Utilization of irrigation for the cultivation

Table 18.1. Use of irrigation (Permanent crops)

	COTOPAXI		TUNGURAHUA		BOLIVAR		CHIMBORAZO		Total	
	No.	%	No.	%	No.	%	No.	%	No.	%
Yes	0	0.0%	31	29.8%	8	57.1%	4	50.0%	43	34.1%
No	0	0.0%	73	70.2%	6	42.9%	4	50.0%	83	65.9%
Total	0	0.0%	104	100.0%	14	100.0%	8	100.0%	126	100.0%

Cuadro 18.2. Use of irrigation (Short-term crops)

	COTOPAXI		TUNGURAHUA		BOLIVAR		CHIMBORAZO		Total	
	No.	%	No.	%	No.	%	No.	%	No.	%
Yes	54	13.2%	186	61.2%	120	39.7%	379	56.5%	739	43.9%
No	354	86.8%	118	38.8%	182	60.3%	292	43.5%	946	56.1%
Total	408	100.0%	304	100.0%	302	100.0%	671	100.0%	1685	100.0%

Tungurahua leads the use of irrigation with 61.2%, then Chimborazo follows with 56.5%. The utilization of irrigation in Cotopaxi is low.

19. Use of fertilizers in the cultivation

Table 19.1. Application of fertilizers (Permanent crops)

	COTOPAXI		TUNGURAHUA		BOLIVAR		CHIMBORAZO		Total	
	No.	%	No.	%	No.	%	No.	%	No.	%
Yes	0		31	75.6%	13	92.9%	4	50.0%	48	76.2%
No	0		10	24.4%	1	7.1%	4	50.0%	15	23.8%
Total	0		41	100.0%	14	100.0%	8	100.0%	63	100.0%

Table 19.2. Application of fertilizers (Short-term crops)

	COTOPAXI		TUNGURAHUA		BOLIVAR		CHIMBORAZO		Total	
	No.	%	No.	%	No.	%	No.	%	No.	%
Yes	34	8.4%	192	63.2%	2	0.7%	336	50.1%	564	33.5%
No	373	91.6%	112	36.8%	301	99.3%	335	49.9%	1121	66.5%
Total	407	100.0%	304	100.0%	303	100.0%	671	100.0%	1685	100.0%

The figures of the 4 provinces are very varied. However the fact that the use of fertilizers is only 8.4% in Cotopaxi and only 0.7% in Bolívar is surprising. Tungurahua shown an high productivity in the statistics where the use of fertilizers is high. However Bolívar showed the lowest productivity where the use of fertilizers is low.

20. Disease and pest control in cultivations

Table 20.1. Disease and pest control (Permanent crops)

	COTOPAXI		TUNGURAHUA		BOLIVAR		CHIMBORAZO		Total	
	No.	%	No.	%	No.	%	No.	%	No.	%
Yes	0	0	27	65.9%	12	85.7%	4	50.0%	43	68.3%
No	0	0	14	34.1%	2	14.3%	4	50.0%	20	31.7%
Total	0	0	41	100.0%	14	100.0%	8	100.0%	63	100.0%

Table 20.2. Disease and pest control (Short-term crops)

	COTOPAXI		TUNGURAHUA		BOLIVAR		CHIMBORAZO		Total	
	No.	%	No.	%	No.	%	No.	%	No.	%
Yes	34	8.3%	161	57.9%	133	46.8%	411	61.3%	739	45.1%
No	374	91.7%	117	42.1%	151	53.2%	259	38.7%	901	54.9%
Total	408	100.0%	278	100.0%	284	100.0%	670	100.0%	1640	100.0%

These data are similar to the item 19 of the use of fertilizers in the three provinces except for Bolívar. Bolívar controls disease and pest more than the use of fertilizers.

21. Condition of the harvested products: fresh or dry

Table 21. Condition of the harvested product (Short-term crops)

	COTOPAXI		TUNGURAHUA		BOLIVAR		CHIMBORAZO		Total	
	No.	%	No.	%	No.	%	No.	%	No.	%
Fresh	246	62.3%	228	87.4%	72	31.9%	387	63.7%	933	62.6%
Dry	149	37.7%	33	12.6%	154	68.1%	221	36.3%	557	37.4%
Total	395	100.0%	261	100.0%	226	100.0%	608	100.0%	1490	100.0%

The average ratio for fresh products and the dry ones is 6 : 4. However, there is a contradiction between Tungurahua and Bolívar: fresh ones is 87% in Tungurahuael and 32% in Bolívar.

22. Decrease in production

Table 22.1. Decrease in production (Permanent crops)

	COTOPAXI		TUNGURAHUA		BOLIVAR		CHIMBORAZO		Total	
	No.	%	No.	%	No.	%	No.	%	No.	%
Yes	0		22	71.0%	2	25.0%	1	33.3%	25	59.5%
No	0		9	29.0%	6	75.0%	2	66.7%	17	40.5%
Total	0		31	100.0%	8	100.0%	3	100.0%	42	100.0%

Table 22.2. Decrease in production (Short-term crops)

	COTOPAXI		TUNGURAHUA		BOLIVAR		CHIMBORAZO		Total	
	No.	%	No.	%	No.	%	No.	%	No.	%
Yes (1)	194	81.9%	103	68.7%	94	82.5%	242	84.3%	633	80.3%
No	43	18.1%	47	31.3%	20	17.5%	45	15.7%	155	19.7%
Total	237	100.0%	150	100.0%	114	100.0%	287	100.0%	788	100.0%
Total (2)	329		207		238		342		1116	
(1)/(2)	59.0%		49.8%		39.5%		70.8%		56.7%	
C12 (Yes) (3)	253		155		144		306		858	
(1)/(3)	76.7%		66.5%		65.3%		79.1%		73.8%	

The figure of question 12 is adopted, since the parameter is smaller with only the answers of “Yes” and “No”. .

The production decreased on an average of 3/4. This rate was higher in Chimborazo and Cotopaxi, and lower in Bolívar and Tungurahua. This result can be reasonable, since farmers in Tungurahua has a farmland condition that can increase productivity by using agricultural inputs,. On the other hand, these factors in Bolívar are opposite to Tungurahua, so it is possible to say that little decrease can not be recognized due to originally low productivity.

23. Decreased percentage of production

Table 23.1. Decreased percentage of production (Permanent crops)

	COTOPAXI		TUNGURAHUA		BOLIVAR		CHIMBORAZO		Total	
	No.	%	No.	%	No.	%	No.	%	No.	%
1-30%	0		6	26.1%	1	50.0%	0	0.0%	7	26.9%
30-50%	0		5	21.7%	1	50.0%	1	100.0%	7	26.9%
More than 50%	0		12	52.2%	0	0.0%	0	0.0%	12	46.2%
Total	0		23	100.0%	2	100.0%	1	100.0%	26	100.0%

Table 23.2. Decreased percentage of production (Short-term crops)

	COTOPAXI		TUNGURAHUA		BOLIVAR		CHIMBORAZO		Total	
	No.	%	No.	%	No.	%	No.	%	No.	%
1-30%	62	32.3%	56	54.4%	36	38.3%	136	56.2%	290	46.0%
30-50%	48	25.0%	30	29.1%	42	44.7%	58	24.0%	178	28.2%
More than 50%	82	42.7%	17	16.5%	16	17.0%	48	19.8%	163	25.8%
Total	192	100.0%	103	100.0%	94	100.0%	242	100.0%	631	100.0%

The decreased percentages of Tungurahua and Chimborazo are lower than the other two provinces.

24. Main reasons of the decreased production

Table 24.1. Main reasons of the decreased production (Permanent crops)

	COTOPAXI		TUNGURAHUA		BOLIVAR		CHIMBORAZO		Total	
	No.	%	No.	%	No.	%	No.	%	No.	%
1) Drought	0		11	32.4%	1	25.0%	0	0.0%	12	30.8%
2) Frost	0		9	26.5%	1	25.0%	0	0.0%	10	25.6%
3) Disease and pest	0		9	26.5%	0	0.0%	1	100.0%	10	25.6%
4) Low price	0		3	8.8%	0	0.0%	0	0.0%	3	7.7%
5) Emigration	0		0	0.0%	1	25.0%	0	0.0%	1	2.6%
6) Others	0		2	5.9%	1	25.0%	0	0.0%	3	7.7%
Total	0		34	100.0%	4	100.0%	1	100.0%	39	100.0%

Table 24.2. Main reasons of the decreased production (Short-term crops)

	COTOPAXI		TUNGURAHUA		BOLIVAR		CHIMBORAZO		Total	
	No.	%	No.	%	No.	%	No.	%	No.	%
1) Drought	151	54.1%	23	12.7%	72	53.7%	185	38.0%	431	39.9%
2) Frost	79	28.3%	59	32.6%	16	11.9%	119	24.4%	273	25.3%
3) Disease and pest	31	11.1%	61	33.7%	21	15.7%	103	21.1%	216	20.0%
4) Low price	6	2.2%	27	14.9%	4	3.0%	65	13.3%	102	9.4%
5) Emigration	3	1.1%	11	6.1%	0	0.0%	0	0.0%	14	1.3%
6) Others	9	3.2%	0	0.0%	21	15.7%	15	3.1%	45	4.2%
Total	279	100.0%	181	100.0%	134	100.0%	487	100.0%	1081	100.0%

Droughts are the biggest cause of the production decrease, so irrigation is an important factor. Especially it is important in Bolívar that not utilizes irrigation. Disease and pest are larger in Tungurahua where they have relatively better irrigation facilities,.

25. Prices and weight of the products

Table 25.1. Prices and weight of the products (Permanent crops)

		No.	Minimum	Maximum	Mean
COTOPAXI	Sold Price	0	0	0	
	Sales (kg)	0	0	0	
TUNGURAHUA	Sold Price	30	0.15	10	1.4
	Sales (kg)	29	12.73	6543.36	1625.8
BOLIVAR	Sold Price	14	1	12	3.3
	Sales (kg)	14	4.582	6109	3000.4
CHIMBORAZO	Sold Price	4	7	10	8.4
	Sales (kg)	4	1.09	2288	573.2

Table 25.2 Prices and weight of the products (Short-term crops)

		No.	Minimum	Maximum	Mean
COTOPAXI	Sold Price	235	0.05	2800	125.5
	Sales (kg)	98	1	180	27.3
TUNGURAHUA	Sold Price	72	0.03	1.25	0.2
	Sales (kg)	156	1	2475	39.5
BOLIVAR	Sold Price	128	0.24	700	18.8
	Sales (kg)	129	1	1125	71.6
CHIMBORAZO	Sold Price	482	0.15	100	10.8
	Sales (kg)	501	1	7000	51.7

In spite of the fact that the information of the 4 provinces differs from each other, and the types of crops are not clear. The important information that can be read from the table is that the selling maximum price was 2,800 dollars.

26. Type of sale

Table 26.1. Type of sale (Short-term crops)

	COTOPAXI		TUNGURAHUA		BOLIVAR		CHIMBORAZO		Total	
	No.	%	No.	%	No.	%	No.	%	No.	%
Direct (1)	115	66.9%	43	58.1%	9	12.0%	15	6.4%	182	32.7%
Middleman	57	33.1%	31	41.9%	66	88.0%	221	93.6%	375	67.3%
Total	172	100.0%	74	100.0%	75	100.0%	236	100.0%	557	100.0%
C24	235		72		128		482		917	
Number of procucer	329		252		248		474		1303	
Proportion of producers who sell	71.4%		28.6%		51.6%		101.7%		70.4%	

As for the type of sale through middleman or direct differs widely for each province, the proportion of direct sale ranged in 66.9% in Cotopaxi and 6.4% in Chimborazo.

Table 26.2. Sold place (Permanent crops)

	COTOPAXI		TUNGURAHUA		BOLIVAR		CHIMBORAZO		Total	
	No.	%	No.	%	No.	%	No.	%	No.	%
In yard	0		2	7.7%	7	63.6%	0	0.0%	9	22.5%
Local market	0		1	3.8%	4	36.4%	0	0.0%	5	12.5%
Town market	0		23	88.5%	0	0.0%	3	100.0%	26	65.0%
Total	0		26	100.0%	11	100.0%	3	100.0%	40	100.0%

Table 26.3. Sold place (Short-term crops)

	COTOPAXI		TUNGURAHUA		BOLIVAR		CHIMBORAZO		Total	
	No.	%	No.	%	No.	%	No.	%	No.	%
In yard	0	0.0%	0	0.0%	13	17.3%	0	0.0%	13	2.4%
Local market	91	55.5%	16	21.9%	53	70.7%	98	41.9%	258	47.3%
Town market	73	44.5%	57	78.1%	9	12.0%	136	58.1%	275	50.4%
Total	164	100.0%	73	100.0%	75	100.0%	234	100.0%	546	100.0%

The sold place of Tungurahua was about 22% at the local market and 78% at the town market.

27. Condition of sold products: fresh or dry

Table 27. Condition of sold product (Permanet crops)

	COTOPAXI		TUNGURAHUA		BOLIVAR		CHIMBORAZO		Total	
	No.	%	No.	%	No.	%	No.	%	No.	%
Fressh	207	60.7%	190	87.6%	55	38.2%	339	66.3%	791	65.2%
Dry	134	39.3%	27	12.4%	89	61.8%	172	33.7%	422	34.8%
Total	341	100.0%	217	100.0%	144	100.0%	511	100.0%	1213	100.0%

These figures are like the condition of the harvested products. Since the dry products of sale conspire probably to the crop for self-consumption like corn, wheat and barley, it is natural in a sense that these proportions are rather low.

28. Destination of the products

Table 28. Destination of the products (Short-term crops)

	COTOPAXI		TUNGURAHUA		BOLIVAR		CHIMBORAZO		Total	
	No.	%	No.	%	No.	%	No.	%	No.	%
Self-consumption	253	45.7%	169	47.6%	112	42.3%	307	34.1%	841	40.5%
Seed	83	15.0%	61	17.2%	26	9.8%	106	11.8%	276	13.3%
Commercialization	218	39.4%	125	35.2%	127	47.9%	488	54.2%	958	46.2%
Total	554	100.0%	355	100.0%	265	100.0%	901	100.0%	2075	100.0%

The proportion of self-consumption and commercialization is higher and the part for seed is low.

29. Cultivation of grass in the last year

Table 29. Cultivation of grass in the last year

	COTOPAXI		TUNGURAHUA		BOLIVAR		CHIMBORAZO		Total	
	No.	%	No.	%	No.	%	No.	%	No.	%
Yes	71	21.5%	146	57.7%	56	36.1%	83	35.9%	356	36.7%
No	259	78.5%	107	42.3%	99	63.9%	148	64.1%	613	63.3%
Total	330	100.0%	253	100.0%	155	100.0%	231	100.0%	969	100.0%

Grass is cultivated in more than half of the agricultural lands in Tungurahua. Grass is cultivated in about 1/3 in Bolivar and Chimborazo and 1/5 in Cotopaxi.

30. Species of the artificial grass

Table 30.1. Species of the artificial grasses

	COTOPAXI		TUNGURAHUA		BOLIVAR		CHIMBORAZO		Total	
	No.	%	No.	%	No.	%	No.	%	No.	%
Alfalfa	43	57.3%	35	26.3%	4	6.3%	29	34.9%	111	31.4%
Kikuyo	0	0.0%	2	1.5%	11	17.5%	0	0.0%	13	3.7%
Blue pasture	13	17.3%	34	25.6%	20	31.7%	13	15.7%	80	22.6%
Elephant pasture	0	0.0%	0	0.0%	2	3.2%	0	0.0%	2	0.6%
Honey pasture	0	0.0%	1	0.8%	2	3.2%	0	0.0%	3	0.8%
Ryegrass	17	22.7%	48	36.1%	22	34.9%	24	28.9%	111	31.4%
White clover	0	0.0%	1	0.8%	0	0.0%	0	0.0%	1	0.3%
Red clover	0	0.0%	1	0.8%	0	0.0%	0	0.0%	1	0.3%
Others	2	2.7%	11	8.3%	2	3.2%	17	20.5%	32	9.0%
Total	75	100.0%	133	100.0%	63	100.0%	83	100.0%	354	100.0%

Table 30.2. Species of the artificial grasses (The top three)

	COTOPAXI		TUNGURAHUA		BOLIVAR		CHIMBORAZO		Total	
	No.	%	No.	%	No.	%	No.	%	No.	%
Alfalfa	43	58.9%	35	29.9%	4	8.7%	29	43.9%	111	36.8%
Blue pasture	13	17.8%	34	29.1%	20	43.5%	13	19.7%	80	26.5%
Ryegrass	17	23.3%	48	41.0%	22	47.8%	24	36.4%	111	36.8%
Total	73	100.0%	117	100.0%	46	100.0%	66	100.0%	302	100.0%

48 varieties of the grasses are cultivated. Among them, the top 3 grasses were listed up. In Cotopaxi, alfalfa occupies 58.9%. In Tungurahua and Bolívar, ryegrass occupies 41% and 47% respectively, while in Chimborazo alfalfa and ryegrass jointly occupy 80%.

31. Presence of permanent or perennial plantations in the last year

Table 31. Presence of permanent or perennial plantations in the last year

	COTOPAXI		TUNGURAHUA		BOLIVAR		CHIMBORAZO		Total	
	No.	%	No.	%	No.	%	No.	%	No.	%
Yes	0	0.0%	40	15.9%	15	6.0%	11	3.2%	66	5.6%
No	345	100.0%	212	84.1%	233	94.0%	333	96.8%	1123	94.4%
Total	345	100.0%	252	100.0%	248	100.0%	344	100.0%	1189	100.0%

In Tungurahua, the proportion of the fruitculture is high.

32. Causes of the low productivity. - Soil -

The farmers were questioned concerning to the soil for the low agricultural productivity.

Table 32. Causes of the low productivity. - soil -

	COTOPAXI		TUNGURAHUA		BOLIVAR		CHIMBORAZO		Total	
	No.	%	No.	%	No.	%	No.	%	No.	%
Low fertility of the soil	209	51.5%	52	26.5%	47	29.6%	202	43.3%	510	41.5%
Degradation of the soil due to cultivation	27	6.7%	8	4.1%	18	11.3%	47	10.1%	100	8.1%
Degradation of the soil due to development in the paramo and forest region	28	6.9%	5	2.6%	13	8.2%	14	3.0%	60	4.9%
Erosion of the soil in farmlands	48	11.8%	13	6.6%	16	10.1%	119	25.5%	196	16.0%
Shortage of fertilization	59	14.5%	99	50.5%	56	35.2%	57	12.2%	271	22.1%
No practice of crop rotation	35	8.6%	19	9.7%	9	5.7%	28	6.0%	91	7.4%
Total	406	100.0%	196	100.0%	159	100.0%	467	100.0%	1228	100.0%

1) Low fertility of the soil: The percentage that answered that the fertility of the farmlands is originally low was 52% in Cotopaxi, 43% in Chimborazo, 30% in Bolívar and 27% in Tungurahua.
2) Degradation of the soil due to cultivation: It varied between 4% ~ 11%.
3) Degradation of the soil due to development of paramo and forests: Bolívar was 8%, Cotopaxi was 7% and the other two provinces were 2%.
4) Soil erosion: Chimborazo showed the highest proportion of 25 %.
5) Shortage of fertilization: Recognition of shortage in fertilization was generally high showing 51% in Tungurahua, 35% in Bolívar and 15% in Cotopaxi.
6) No practice of crop rotation: Tungurahua was high with 9%, Cotopaxi was 8%, Chimborazo 6% and Bolívar was 5%.

33. Causes of the low productivity - Water Resources -

Table 33. Causes of the low productivity - Water Resources -

	COTOPAXI		TUNGURAHUA		BOLIVAR		CHIMBORAZO		Total	
	No.	%	No.	%	No.	%	No.	%	No.	%
Lack of water for cultivation	161	67.6%	75	51.0%	169	63.5%	232	65.4%	637	63.3%
No presence of irrigation system	70	29.4%	62	42.2%	81	30.5%	116	32.7%	329	32.7%
Shortage of laborares	7	2.9%	10	6.8%	16	6.0%	7	2.0%	40	4.0%
Total	238	100.0%	147	100.0%	266	100.0%	355	100.0%	1006	100.0%

1) Lack of water for cultivation: Tungurahua which has the largest irrigation systems presented 50% and the other 3 provinces were 60%.
2) No irrigation system: Tungurahua with the largest irrigation systems presented 42% and the other 3 provinces were around 30%.

34. Causes of the low productivity - Agricultural Technology -

Table 34. Causes of the low productivity - Agricultural Technology -

	COTOPAXI		TUNGURAHUA		BOLIVAR		CHIMBORAZO		Total	
	No.	%	No.	%	No.	%	No.	%	No.	%
Ignorance of ecologial farming	63	13.5%	37	7.5%	54	16.0%	69	19.3%	223	13.5%
Disease and pest control	42	9.0%	158	32.0%	90	26.7%	65	18.2%	355	21.5%
No presence of machinery for cultivation	22	4.7%	62	12.6%	37	11.0%	13	3.6%	134	8.1%
Labour for cultivation	90	19.4%	33	6.7%	23	6.8%	17	4.7%	163	9.9%
Access to seeds of good quality	100	21.5%	120	24.3%	61	18.1%	65	18.2%	346	20.9%
High cost of the cultivation, price of fertilizers and etc.	42	9.0%	76	15.4%	66	19.6%	116	32.4%	300	18.1%
No use of the agricultural calendar.	106	22.8%	8	1.6%	6	1.8%	13	3.6%	133	8.0%
Total	465	100.0 %	494	100.0%	337	100.0%	358	100.0%	1654	100.0%

1) Ignorance of ecological farming: The highest figure was 19.3% in Chimborazo, followed by 16.0% in Bolívar, 13.5% in Cotopaxi and 7.5% in Tungurahua.

2) Disease and pest control: Generally it was high with 32% in Tungurahua, 27% in Bolívar, 18% in Chimborazo and 9% in Cotopaxi.

3) No machinery for cultivation: The actual condition of the machinery for cultivation is not clear, however 13% of Tungurahua was the highest.

4) Labor for cultivation: The highest value was 19% in Chimborazo and the other 3 provinces were low varying between 4% ~ 7%.

5) Access to seeds of good quality: In average it was high followed by the disease and pest control, showing 22% in Cotopaxi, 24% in Tungurahua 24% and 18% in the other 2 provinces.

6) High costs of cultivation, fertilizers price, etc.: The highest value was 32% in Chimborazo, followed by 20% in Bolívar, 15% in Tungurahua and 9% in Cotopaxi.

7) No use of the cropping schedule: The highest value was 23% in Cotopaxi and the other 3 provinces were low between 1% ~ 3%.

35. Causes of the low productivity - Services of agricultural support -

Table 35. Causes of the low productivity - Services of agricultural support -

	COTOPAXI		TUNGURAHUA		BOLIVAR		CHIMBORAZO		Total	
	No.	%	No.	%	No.	%	No.	%	No.	%
Access to credit	124	47.3%	119	53.8%	64	34.4%	167	40.8%	474	44.0%
Access to qualification and transfer of agricultural technology	96	36.6%	61	27.6%	98	52.7%	230	56.2%	485	45.0%
Access to qualification in commercialization and marketing (collection, transportation, sale)	42	16.0%	41	18.6%	24	12.9%	12	2.9%	119	11.0%
Total	262	100.0%	221	100.0%	186	100.0%	409	100.0%	1078	100.0%

1) Access to credit: The values were between 54% in Tungurahua and 34% in Bolívar.

2) Access to training and transfer of agricultural technology: Bolívar and Chimborazo were high with 50% and Tungurahua was about half with 27%.

3) Access to training in commercialization and marketing system (collection, transportation, sale): It was low compared with the previous 2 parameters and it ranged between 19% in Tungurahua and 3% in Chimborazo. Chimborazo is divided in two parts: credit and agricultural technology.

36. Causes of the low productivity - Commercialization -

Table 36. Causes of the low productivity - Commercialization -

	COTOPAXI		TUNGURAHUA		BOLIVAR		CHIMBORAZO		Total	
	No.	%	No.	%	No.	%	No.	%	No.	%
Access to sale of agricultural products	84	44.0%	63	62.4%	8	4.3%	91	61.1%	246	52.9%
Place of commercialization (Citizen fair, Market, Stores)	107	56.0%	38	37.6%	16	66.7%	58	38.9%	219	47.1%
Total	191	100.0%	101	100.0%	24	100.0%	149	100.0%	465	100.0%

Compared to the previous parameters, the number of farmers who selected commercialization as a cause of the low productivity were low, especially in Bolívar.

37. Cattle breeding farmer

Table 37. Cattle breeding farmer

	COTOPAXI		TUNGURAHUA		BOLIVAR		CHIMBORAZO		Total	
	No.	%	No.	%	No.	%	No.	%	No.	%
Yes	167	50.8%	163	64.7%	35	36.5%	244	70.9%	609	59.6%
No	162	49.2%	89	35.3%	61	63.5%	100	29.1%	412	40.4%
Total	329	100.0%	252	100.0%	96	100.0%	344	100.0%	1021	100.0%

In average 60% of the farmers are breeding cattle. It varies between 37% in Bolívar and 71% in Chimborazo.

38. Number of cows

Table 38. Number of cows

		No.	%	Minimum	Maximum	Mean
COTOPAXI	Number of owned heads	164	95.3%	1	10	3.07
	Number of entrusted heads	8	4.7%	1	6	3.13
TUNGURAHUA	Number of owned heads	160	96.4%	1	40	3.68
	Number of entrusted heads	6	3.6%	1	1	1.00
BOLIVAR	Number of owned heads	176	95.1%	1	40	6.13
	Number of entrusted heads	9	4.9%	2	20	8.22
CHIMBORAZO	Number of owned heads	243	98.8%	1	10	2.17
	Number of entrusted heads	3	1.2%	1	2	1.33

The table shows cases of self-ownership and entrustment. But the latter presents cases between 1% to 5%, however the number of heads is low.

The number of heads are a minimum of 1 and maximum of 40 heads, with an average of 2 to 8 heads.

39. Management of Cattle

Table 39. Management of Cattle (%)

		COTOPAXI	TUNGURAHUA	BOLIVAR	CHIMBORAZO
Management	Pasturage	19.2%	8.1%	24.3%	32.2%
	Tethering	80.2%	91.9%	75.7%	63.6%
	Other	0.6%	0.0%	0.0%	4.2%
	Total	100.0%	100.0%	100.0%	100.0%
Feeding	Grasses	98.2%	97.0%	73.6%	93.2%
	Silo	0.0%	0.0%	0.0%	0.0%
	Hay	0.0%	0.0%	0.0%	0.0%
	Banana	1.2%	0.6%	0.5%	1.4%
	Mixed forage	0.0%	1.8%	2.6%	0.0%
	Other	0.6%	0.6%	23.3%	5.5%
	Total	100.0%	100.0%	100.0%	100.0%
Use of mineral salt	Yes	50.6%	58.0%	80.8%	36.1%
	No	49.4%	42.0%	19.2%	63.9%
	Total	100.0%	100.0%	100.0%	100.0%
Reproduction	Free Mounting	50.9%	42.1%	32.9%	53.9%
	Controlled Mounting	9.3%	17.0%	60.1%	27.7%
	Artificial Insemination	1.2%	2.5%	0.6%	0.0%
	No Application	38.5%	38.4%	6.4%	18.4%
	Total	100.0%	100.0%	100.0%	100.0%
Pest control	External	12.6%	1.5%	4.1%	12.0%
	Internal	46.5%	33.1%	59.5%	43.5%
	Both	40.9%	65.4%	36.5%	44.4%
	Total	100.0%	100.0%	100.0%	100.0%
Vaccination	Yes	81.9%	95.7%	87.6%	87.4%
	No	18.1%	4.3%	12.4%	12.6%
	Total	100.0%	100.0%	100.0%	100.0%
Dose for foot and mouth disease	1 Dose	81.1%	91.8%	73.8%	70.2%
	2 Doses	18.9%	8.2%	26.2%	29.8%
	Total	100.0%	100.0%	100.0%	100.0%
Triple Vaccination	Yes	6.3%	16.0%	25.9%	18.3%
	No	93.8%	84.0%	74.1%	81.7%
	Total	100.0%	100.0%	100.0%	100.0%
Other vaccinations	Yes	8.9%	18.6%	11.8%	17.2%
	No	91.1%	81.4%	88.2%	82.8%
	Total	100.0%	100.0%	100.0%	100.0%
Flock of foot and mouth disease	Yes	3.1%	1.9%	4.0%	2.1%
	No	96.9%	98.1%	96.0%	97.9%
	Total	100.0%	100.0%	100.0%	100.0%
Yesterday's Milking	Yes	53.4%	42.5%	69.1%	35.4%
	No	46.6%	57.5%	30.9%	64.6%
	Total	100.0%	100.0%	100.0%	100.0%
Sale of milk	Direct	41.8%	59.6%	49.2%	28.3%
	Indirect	58.2%	40.4%	50.8%	71.7%
	Total	100.0%	100.0%	100.0%	100.0%
Destination of milk	Raw sale	56.7%	50.6%	29.5%	63.2%
	Consummed byUPA	24.7%	41.4%	41.8%	11.8%
	Suto-comsumption	17.5%	4.6%	10.7%	25.0%
	Processed by UPA	1.0%	3.4%	18.0%	0.0%
	Total	100.0%	100.0%	100.0%	100.0%

Management: Concerning to pasturage or tethering, the majority is the tethering, where Chimborazo presented the lowest among the 4 provinces presenting 64%.

Feeding: Majority is grass. But in Bolívar there was 18% that use others items.

Use of mineral salt: In the case that majority is the tethering, it is important to provide mineral salt. Its usage was 56% in average and high in Bolívar.

Reproduction method: It is notable the 60% controlled copulation in Bolívar.

Pest control method: The internal and external method or both is used mostly, but the external method is not much used.

Vaccination: At least more than 80% of the cattle have been vaccinated.

Vaccination times for foot and mouth disease: They answered that vaccinate once or twice. The majority had the tendency for one vaccination.

Triple vaccination: It is natural that is low, however in Bolívar there was a lot case that the vaccination was done 3 times, if it was done twice.

Other vaccinations: It is not clear what kind of disease are there, however it is notable that near 20% did it in Tungurahua and Chimborazo.

Example of finding foot and mouth disease: There were little cases of foot and mouth disease.

Yesterday's Milking: In Bolívar the yesterday's milking presented 70%, however in Chimborazo and Tungurahua it represented about 40%

Sale of milk: They were asked whether they sold milk directly or indirectly. In Chimborazo 70% uses middlemen, while the other 3 provinces use both methods.

Destination of milk: The main form to sell milk is in fresh form. It is notable that the processing by UPA presents a high proportion in Bolívar. In the same way, the consumption of UPA's milk are high in Tungurahua and Bolívar. Which recognizes the importance of the cattle in food self-production.

40. Average production of cow milk

Table 40. Average production of cow milk (l/head)

		No.	Minimum	Maximum	Mean	Census III
COTOPAXI	Average production of milk	84	1	34	9.18	5.9
TUNGURAHUA	Average production of milk	68	1	240	17.12	5.8
BOLIVAR	Average production of milk	115	1	30	4.59	3.6
CHIMBORAZO	Average production of milk	51	1	17	6.35	4.9

The values increased in comparison with the census. However, there is still a margin of improvement, considering the maximum value.

41. Suineculture

Table 41. Suineculture

	COTOPAXI		TUNGURAHUA		BOLIVAR		CHIMBORAZO		Total	
	No.	%	No.	%	No.	%	No.	%	No.	%
Yes	76	23.1%	164	65.1%	170	68.3%	230	66.9%	640	54.5%
No	253	76.9%	88	34.9%	79	31.7%	114	33.1%	534	45.5%
Total	329	100.0%	252	100.0%	249	100.0%	344	100.0%	1174	100.0%

In average 55% of the producers are raising pigs. So it is believed that a great number of producers are simultaneously raising pigs and cattle.

The highest rate was 68% in Bolívar, followed by 67% in Chimborazo and 65% in Tungurahua and the lowest was 23% in Cotopaxi.

42. Number of heads - Pigs -

Table 42. Number of heads - Pigs -

				No.	Min.	Max.	Mean
Cotopaxi	Native species	Less than 2 months of age	Male	28	1	8	2.04
		2 months and more of age	Femele	42	1	7	1.95
		Dedicated for the reproduction	Femele	35	1	5	1.51
			Male	23	1	2	1.13
	Crossbred	Less than 2 months of age	Male	0	0	0	
		2 months and more of age	Femele	1	3	3	3.00
		Dedicated for the reproduction	Femele	0	0	0	
			Male	0	0	0	
	Pureblood	Less than 2 months of age	Male	0	0	0	
		2 months and more of age	Femele	0	0	0	
		Dedicated for the reproduction	Femele	0	0	0	
			Male	0	0	0	
Tungurahua	Native species	Less than 2 months of age	Male	25	1	7	2.08
		2 months and more of age	Femele	126	126	11	1.45
		Dedicated for the reproduction	Femele	56	56	7	1.38
			Male	59	59	4	1.25
	Crossbred	Less than 2 months of age	Male	2	3	4	3.50
		2 months and more of age	Femele	10	10	2	1.30
		Dedicated for the reproduction	Femele	7	7	2	1.29
			Male	3	3	2	1.33
	Pureblood	Less than 2 months of age	Male	0	0	0	
		2 months and more of age	Femele	2	2	1	1.00
		Dedicated for the reproduction	Femele	1	1	1	1.00
			Male	1	1	1	1.00
Bolívar	Native species	Less than 2 months of age	Male	46	1	16	3.46
		2 months and more of age	Femele	131	131	7	1.76
		Dedicated for the reproduction	Femele	45	45	10	1.82
			Male	19	19	10	1.74
	Crossbred	Less than 2 months of age	Male	3	1	10	4.33
		2 months and more of age	Femele	15	15	4	1.80
		Dedicated for the reproduction	Femele	6	6	2	1.33
			Male	1	1	1	1.00
	Pureblood	Less than 2 months of age	Male	0	0	0	
		2 months and more of age	Femele	0	0	0	
		Dedicated for the reproduction	Femele	0	0	0	
			Male	0	0	0	
Chimborazo	Native species	Less than 2 months of age	Male	32	1	10	2.53
		2 months and more of age	Femele	177	177	7	1.45
		Dedicated for the reproduction	Femele	112	112	22	1.56
			Male	62	62	7	1.35
	Crossbred	Less than 2 months of age	Male	6	1	13	5.67
		2 months and more of age	Femele	14	14	3	1.57
		Dedicated for the reproduction	Femele	10	10	14	4.00
			Male	7	7	10	3.14
	Pureblood	Less than 2 months of age	Male	1	5	5	5.00
		2 months and more of age	Femele	3	3	2	1.33
		Dedicated for the reproduction	Femele	2	2	5	3.00
			Male	0	0	0	

They possess one to three pigs and the larger farmers are raising about 20 pigs.

43. Management of pigs

Table 43. Management of pigs

		COTOPAXI	TUNGURAHUA	BOLIVAR	CHIMBORAZO
Feeding	Mixed forage	8.5%	8.9%	3.0%	2.6%
	Banana	14.6%	0.6%	6.0%	2.6%
	Residuals	75.6%	88.8%	66.5%	78.9%
	Bran	1.2%	1.8%	24.5%	15.8%
	Other	6.1%	5.9%	36.5%	9.4%
	Total	100.0%	100.0%	100.0%	100.0%
Reproduction	Free Mounting	25.0%	31.1%	25.6%	50.0%
	Controlled Mounting	3.9%	7.9%	30.2%	23.7%
	Artificial Insemination	0.0%	0.6%	0.0%	0.0%
	No Application	71.1%	60.4%	44.2%	26.3%
	Total	100.0%	100.0%	100.0%	100.0%
Pest Control	External	8.3%	4.8%	2.8%	10.3%
	Internal	58.3%	42.9%	67.3%	50.5%
	Both	33.3%	52.4%	29.9%	39.3%
	Total	100.0%	100.0%	100.0%	100.0%
Vaccination	Yes	17.1%	37.8%	56.8%	33.2%
	No	82.9%	62.2%	43.2%	66.8%
	Total	100.0%	100.0%	100.0%	100.0%
Dose for foot and mouth disease	1 Dose	42.9%	22.7%	33.0%	51.9%
	2 Doses	57.1%	77.3%	67.0%	48.1%
	Total	100.0%	100.0%	100.0%	100.0%
Other vaccinations	Yes	57.1%	53.8%	73.2%	72.2%
	No	42.9%	46.2%	26.8%	27.8%
	Total	100.0%	100.0%	100.0%	100.0%
Flock of foot and mouth disease	Yes	1.3%	11.8%	1.8%	2.6%
	No	98.7%	88.2%	98.2%	97.4%
	Total	100.0%	100.0%	100.0%	100.0%

Feeding: It was asked which feed is used for pigs among mixed forage, banana, residuals, bran and others. The majority uses domestic residuals, however some amount of mixed forage is used in Cotopaxi and Tungurahua and banana represents 15 % in Cotopaxi.

Reproduction: Controlled copulation represents about 20% to 30% in Bolívar and Chimborazo, which means that they maintain certain control.

Pest control: They were asked how is the pest control among external, internal or both ways. The use of the external way was little and the internal way or both was more used.

Vaccination: More than 30% vaccinated the animals, except for Cotopaxi.

Vaccination times: More than 60% applied twice in the provinces, except for Chimborazo.

Other vaccination: It is not clear the type of disease, however, more than half got vaccination.

Example of foot and mouth disease: There were few cases of foot and mouth disease.

44. Possession of sheep

Table 44. Possession of sheep

	COTOPAXI		TUNGURAHUA		BOLIVAR		CHIMBORAZO		Total	
	No.	%	No.	%	No.	%	No.	%	No.	%
Yes	157	47.9%	154	61.1%	168	68.9%	205	59.6%	684	58.6%
No	171	52.1%	98	38.9%	76	31.1%	139	40.4%	484	41.4%
Total	328	100.0%	252	100.0%	244	100.0%	344	100.0%	1168	100.0%

There were more than 50% cases. So, it is believed that great number of producers were raising sheep simultaneously with pigs and cattle.

45. Number of heads - Sheep -

Table 45. Number of heads - Sheep -

			No.	Min.	Max.	Mean
Cotopaxi	Native species	Less than 2 months	102	1	15	3.54
		2 months and more	147	1	40	6.56
	Crossbred	Less than 2 months	3	2	6	4.00
		2 months and more	2	4	6	5.00
	Wool type	Less than 2 months	2	3	4	3.50
		2 months and more	2	4	4	4.00
	Pure blood	Less than 2 months	0	0	0	
		2 months and more	2	1	8	4.50
Tungurahua	Native species	Less than 2 months	43	1	10	2.70
		2 months and more	138	1	30	4.06
	Crossbred (without Registration)	Less than 2 months	3	2	3	2.33
		2 months and more	10	2	10	5.50
	Crossbred (with Registration)	Less than 2 months	0	0	0	
		2 months and more	0	0	0	
	Brahman	Less than 2 months	1	2	2	2.00
		2 months and more	1	2	2	2.00
Bolívar	Native species	Less than 2 months	77	1	25	3.43
		2 months and more	143	1	95	6.31
	Crossbred (without Registration)	Less than 2 months	5	1	5	2.80
		2 months and more	20	1	35	6.70
	Crossbred (with Registration)	Less than 2 months	0	0	0	
		2 months and more	0	0	0	
	Brahman	Less than 2 months	0	0	0	
		2 months and more	1	2	2	2.00
Chimborazo	Native species	Less than 2 months	39	1	7	2.05
		2 months and more	173	1	18	4.05
	Crossbred (without Registration)	Less than 2 months	25	1	25	4.92
		2 months and more	10	1	5	1.70
	Crossbred (with Registration)	Less than 2 months	23	1	20	4.61
		2 months and more	0	0	0	
	Brahman	Less than 2 months	0	0	0	
		2 months and more	2	1	3	2.00

Few sheeps were raised, showing that they had dozens at most.

46. Management of sheep

Table 46. Management of sheep

		COTOPAXI	TUNGURAHUA	BOLIVAR	CHIMBORAZO
Feeding	Grass	97.5%	99.4%	85.1%	93.4%
	Mixed forage	0.6%	0.0%	1.7%	0.0%
	Residuals	0.6%	0.6%	8.0%	0.5%
	Others	1.3%	0.0%	5.1%	6.2%
	Total	100.0%	100.0%	100.0%	100.0%
Reproducction	Free Mounting	90.3%	74.0%	66.2%	80.4%
	Controlled Mounting	1.3%	5.2%	18.8%	14.2%
	Artificial Insemination	0.0%	0.6%	0.0%	0.0%
	No Application	8.4%	20.1%	14.9%	5.4%
	Total	100.0%	100.0%	100.0%	100.0%
Pest control	External	22.2%	2.8%	21.6%	6.1%
	Internal	55.6%	33.3%	59.5%	54.5%
	Both	22.2%	63.9%	18.9%	39.4%
	Total	100.0%	100.0%	100.0%	100.0%
Vaccination	Ye	12.7%	9.8%	10.7%	19.6%
	No	87.3%	90.2%	89.3%	80.4%
	Total	100.0%	100.0%	100.0%	100.0%
Dose for foot and mouth disease	1 Dose	40.0%	6.1%	42.1%	15.3%
	2 Doses	60.0%	93.9%	57.9%	84.7%
	Total	100.0%	100.0%	100.0%	100.0%
Other Vaccination	Yes	21.2%	16.7%	26.3%	6.2%
	No	78.8%	83.3%	73.7%	93.8%
	Total	100.0%	100.0%	100.0%	100.0%

Feeding: It was asked about the type of feed: Among grass, mixed forage, domestic residuals, others, the majority was grasses, however there was 8% of domestic residuals in Bolívar.

Reproduction: The natural reproduction is generally applied. However, controlled copulation presents 20% in Bolívar, which differs from Cotopaxi and Tungurahua.

Pest control: They were asked how was the deworming used among external, internal or both way. The internal way was used more in Cotopaxi, Bolívar, and Chimborazo and both way is used more in Tungurahua.

Vaccination: There was a large difference between the provinces. It represented 13% in Cotopaxi, 20% in Chimborazo, while in Tungurahua and Bolívar it represented about 10%.

Vaccination times for foot and mouth disease: One dose represented approximately 40% in Cotopaxi and Bolívar, while twice doses represented high proportion in Tungurahua and Chimborazo.

Other Vaccinations: The number in Chimborazo was lower than the others.

47. Other livestock

Table 47. Other livestock

		Donkey	Horse	Mule	Goat	Alpaca	Llma	Rabbit	Guinea pig
Cotopaxi	No.	65	69	11	47	2	43	466	3151
	%	1.7%	1.8%	0.3%	1.2%	0.1%	1.1%	12.1%	81.8%
Tungurahua	No.	72	74	1	9	0	6	761	4319
	%	1.4%	1.4%	0.0%	0.2%	0.0%	0.1%	14.5%	82.4%
Bolívar	No.	57	89	41	6	13	172	151	2230
	%	2.1%	3.2%	1.5%	0.2%	0.5%	6.2%	5.5%	80.8%
Chimborazo	No.	152	10	0	1	1	56	1141	4434
	%	2.6%	0.2%	0.0%	0.0%	0.0%	1.0%	19.7%	76.5%

The percentage is the value of the number of farmers breeding livestock divided by the total farmers number. A lot of farmers keep Guinea pig and its proportion reaches 77% to 82%. Also relatively lot of farmers keep rabbit

48. Poultry

Table 48. Poultry

	COTOPAXI		TUNGURAHUA		BOLIVAR		CHIMBORAZO		Total	
	No.	%	No.	%	No.	%	No.	%	No.	%
Yes	88	26.7%	139	55.2%	178	75.1%	213	61.9%	618	53.2%.
No	241	73.3%	113	44.8%	59	24.9%	131	38.1%	544	46.8%
Total	329	100.0%	252	100.0%	237	100.0%	344	100.0%	1162	100.0%

In Bolívar 75% of farmers kept poultry and in Cotopaxi showed the lowest proportion of 27%.

49. Water resources for livestock

Table 49. Water resources for livestock

	COTOPAXI		TUNGURAHUA		BOLIVAR		CHIMBORAZO		Total	
	No.	%	No.	%	No.	%	No.	%	No.	%
Use of irrigation or water for grasses	179	65.3%	23	38.3%	159	70.4%	172	61.4%	533	63.5%
No presence of irrigation system	78	28.5%	12	20.0%	53	23.5%	87	31.1%	230	27.4%
Bad water quality	7	2.6%	3	5.0%	10	4.4%	13	4.6%	33	3.9%
Wrong use of the water	10	3.6%	22	36.7%	4	1.8%	8	2.9%	44	5.2%
Total	274	100.0%	60	100.0%	226	100.0%	280	100.0%	840	100.0%

"Water resources" was questioned concerning to the low productivity of animal husbandry. A lot of farmers answered that there was a lack of water and no irrigation system. It was notable that improper use of the water occupied 37% in Tungurahua.

50. Service of agricultural support

Table 50. Service of agricultural support

	COTOPAXI		TUNGURAHUA		BOLIVAR		CHIMBORAZO		Total	
	No.	%	No.	%	No.	%	No.	%	No.	%
Access to credit	140	50.5%	81	75.0%	41	36.0%	123	42.1%	385	48.7%
Access to qualification and transfer of livestock technology	108	39.0%	17	15.7%	59	51.8%	157	53.8%	341	43.1%
Access to qualification in commercialization and marketing (collection, transportation, sale)	29	10.5%	10	9.3%	14	12.3%	12	4.1%	65	8.2%
Total	277	100.0%	108	100.0%	114	100.0%	292	100.0%	791	100.0%

Access to credit in Cotopaxi and Tungurahua exceeded 50%, while access to technical transfer in Bolívar and Chimborazo exceeded 50%..

51. Technology of Livestock

Table 51. Technology of Livestock

	COTOPAXI		TUNGURAHUA		BOLIVAR		CHIMBORAZO		Total	
	No.	%	No.	%	No.	%	No.	%	No.	%
Shortage of knowledge of management and technology of livestock	51	12.9%	42	10.1%	54	20.9%	81	21.4%	228	15.8%
High cost of inputs	62	15.7%	129	31.2%	67	26.0%	83	22.0%	341	23.6%
Shortage of technical assistance	80	20.2%	75	18.1%	51	19.8%	66	17.5%	272	18.8%
High cost of the technical assistance	30	7.6%	56	13.5%	7	2.7%	49	13.0%	142	9.8%
Animals with high quality genetics	156	39.4%	44	10.6%	45	17.4%	51	13.5%	296	20.5%
High cost of equipment for insemination	1	0.3%	23	5.6%	11	4.3%	13	3.4%	48	3.3%
Quality control of the primary matter	2	0.5%	8	1.9%	2	0.8%	9	2.4%	21	1.5%
No use of agricultural calendar	2	0.5%	8	1.9%	2	0.8%	9	2.4%	21	1.5%
Access to seeds of good quality	12	3.0%	29	7.0%	19	7.4%	17	4.5%	77	5.3%
Total	396	100.0%	414	100.0%	258	100.0%	378	100.0%	1446	100.0%

Animals with high quality genetics occupied relatively higher percertage of 39% in Cotopaxi. This value was lower in Tungurahua with 10%, where “High costs of inputs” were 31%. In Bolívar “High costs of inputs” also marked high value with 26% and these issues were dispersed. Issues in Chimborazo seemed to Bolívar.

52. Average of working hours - Man -

Table 52. Average of working hours - Man -

	Content	No.	Min.	Max.	Mean
COTOPAXI	(1) Number of weekly hours that farmers work inside of their farms in Agricultural Activities	401	0	70	23
	(2) Number of hours that farmers work outside of their farms in Agricultural Activities	139	0	50	13
	(3) Number of hours that farmers work inside of their farms in Non Agricultural Activities	181	3	50	19
TUNGRAHUA	(1) Number of weekly hours that farmers work inside of their farms in Agricultural Activities	213	0	80	20
	(2) Number of hours that farmers work outside of their farms in Agricultural Activities	43	0	50	57
	(3) Number of hours that farmers work inside of their farms in Non Agricultural Activities	106	0	400	35
BOLIVAR	(1) Number of weekly hours that farmers work inside of their farms in Agricultural Activities	221	2	55	25
	(2) Number of hours that farmers work outside of their farms in Agricultural Activities	43	4	40	27
	(3) Number of hours that farmers work inside of their farms in Non Agricultural Activities	39	20	56	36
CHIMBORAZO	(1) Number of weekly hours that farmers work inside of their farms in Agricultural Activities	379	0	70	379
	(2) Number of hours that farmers work outside of their farms in Agricultural Activities	108	2	56	16
	(3) Number of hours that farmers work inside of their farms in Non Agricultural Activities	128	0	58	22

Work of 20 hours a week corresponded to work of 4 hours a day assuming works for 5 days a week. Of course, there were people that presented long working hours with 60 ~ 70 hours. However, it was assumed that the limited area of the farmers affected the working time. Content (2) showed an agricultural support outside of their farms, which included approximately 20% to 30% of the farmers in content (1). Non agricultural activities of content (3) were more than the activities of content (2) and approximately 20% to 50% included in content (1) were engaged in such works.

53. Remuneration - Men

Table 53. Remuneration - Men

	COTOPAXI		TUNGURAHUA		BOLIVAR		CHIMBORAZO		Total	
	No.	%	No.	%	No.	%	No.	%	No.	%
Yes	11	3.0%	5	2.5%	9	5.4%	7	1.9%	32	2.9%
No	359	97.0%	193	97.5%	157	94.6%	355	98.1%	1064	97.1%
Total	370	100.0%	198	100.0%	166	100.0%	362	100.0%	1096	100.0%

It was asked about the presence of remuneration when they engage in agricultural works in UPA. Since it is assumed that UPA accorded with farmers themselves in a sense, in case of small farmers, it was reasonable that the presence of remuneration is 2 to 5%.

54. Employment of neither inside of nor outside of UPA - Men

Table 54. Employment of neither inside of nor outside of UPA - Men

	COTOPAXI		TUNGURAHUA		BOLIVAR		CHIMBORAZO		Total	
	No.	%	No.	%	No.	%	No.	%	No.	%
Yes	109	30.4%	8	13.1%	21	23.9%	81	35.1%	219	29.6%
No	250	69.6%	53	86.9%	67	76.1%	150	64.9%	520	70.4%
Total	359	100.0%	61	100.0%	88	100.0%	231	100.0%	739	100.0%

Since these figures corresponded to the unemployment rate, the fact that such a lot of male farmers did not work is surprising. The lowest percentage was 13% in Tungurahua, Cotopaxi presented 30% that exceeded the value and Chimborazo presented 35%. It could be understood from these figures that it was very important to create works sources inside the rural.

55. Average of working hours - Women -

Table 55. Average of working hours - Women -

		No.	Min.	Max.	Mean
COTOPAXI	(1) Number of weekly hours that farmers work inside of their farms in Agricultural Activities	456	0	70	26.2
	(2) Number of hours that farmers work outside of their farms in Agricultural Activities	181	0	60	16.1
	(3) Number of hours that farmers work inside of their farms in Non Agricultural Activities	181	0	60	15.7
TUNGRAHUA	(1) Number of weekly hours that farmers work inside of their farms in Agricultural Activities	267	0	200	24.4
	(2) Number of hours that farmers work outside of their farms in Agricultural Activities	33	0	60	104.8
	(3) Number of hours that farmers work inside of their farms in Non Agricultural Activities	68	0	50	24.0
BOLIVAR	(1) Number of weekly hours that farmers work inside of their farms in Agricultural Activities	277	2	60	30.1
	(2) Number of hours that farmers work outside of their farms in Agricultural Activities	23	1	40	20.9
	(3) Number of hours that farmers work inside of their farms in Non Agricultural Activities	24	10	56	32.8
CHIMBORAZO	(1) Number of weekly hours that farmers work inside of their farms in Agricultural Activities	344	2	70	344.0
	(2) Number of hours that farmers work outside of their farms in Agricultural Activities	78	5	56	20.5
	(3) Number of hours that farmers work inside of their farms in Non Agricultural Activities	70	4	48	18.9

This was the female version of the table 52. Women worked equally well with men.

56. Remuneration - Women

Table 56. Remuneration - Women

	COTOPAXI		TUNGURAHUA		BOLIVAR		CHIMBORAZO		Total	
	No.	%	No.	%	No.	%	No.	%	No.	%
Yes	6	1.4%	5	2.0%	9	4.4%	7	2.1%	27	2.2%
No	418	98.6%	245	98.0%	195	95.6%	324	97.9%	1182	97.8%
Total	424	100.0%	250	100.0%	204	100.0%	331	100.0%	1209	100.0%

The figures were about half of the men.

57. Employment of neither inside of nor outside of UPA - Women

Cuadro 57 –Employment of neither inside of nor outside od UPA - Women

	COTOPAXI		TUNGURAHUA		BOLIVAR		CHIMBORAZO		Total	
	No.	%	No.	%	No.	%	No.	%	No.	%
Si	70	17.6%	9	21.4%	13	13.5%	49	25.8%	141	19.4%
No	327	82.4%	33	78.6%	83	86.5%	141	74.2%	584	80.6%
Total	397	100.0%	42	100.0%	96	100.0%	190	100.0%	725	100.0%

The rate was aproximately 1/3 of the men.

58. Solution for the low agricultural productivity

Table 58. Solution for the low agricultural productivity

		Access to Assistance	Access to Credit	Qualification	Access to market	Others
COTOPAXI	Solution 1	8.0%	2.8%	8.4%	1.8%	3.7%
	Solution 2	6.6%	9.0%	6.1%	1.6%	1.1%
	Solution 3	7.7%	4.9%	4.8%	4.3%	0.5%
	Solution 4	3.0%	4.1%	2.5%	5.5%	2.3%
	Solution 5	0.9%	1.3%	0.4%	1.1%	7.5%
	Total	26.2%	22.2%	22.1%	14.3%	15.1%
TUNGURAHUA	Solution 1	6.5%	5.5%	5.4%	6.0%	0.6%
	Solution 2	5.8%	7.6%	6.3%	4.2%	0.1%
	Solution 3	7.9%	5.0%	6.4%	4.6%	0.0%
	Solution 4	3.3%	5.3%	5.9%	8.5%	0.3%
	Solution 5	0.1%	0.2%	0.4%	0.5%	3.6%
	Total	23.6%	23.7%	24.4%	23.7%	4.6%
BOLIVAR	Solution 1	17.9%	4.0%	6.5%	0.4%	3.2%
	Solution 2	14.0%	5.1%	6.7%	0.7%	3.5%
	Solution 3	9.4%	3.2%	5.5%	0.9%	2.3%
	Solution 4	3.2%	2.6%	2.2%	1.8%	2.0%
	Solution 5	1.5%	0.5%	0.9%	0.5%	1.2%
	Total	46.1%	15.5%	21.8%	4.3%	12.3%
CHIMBORAZO	Solution 1	11.6%	4.6%	6.4%	1.7%	0.7%
	Solution 2	6.1%	9.8%	6.9%	1.6%	0.4%
	Solution 3	4.8%	7.0%	7.5%	4.8%	0.2%
	Solution 4	3.3%	3.9%	2.8%	10.3%	0.4%
	Solution 5	1.1%	1.6%	0.7%	1.0%	0.7%
	Total	26.9%	26.9%	24.2%	19.5%	2.5%

The answers were very dispersed. The access to markets seemed not to be a priority. Cotopaxi, Tungurahua and Chimborazo needed the access to assistance, credit and qualification equally, while in Bolívar the access to assistance was significant.

59. Institution that can support to solve the low productivity

Table 59. Institution that can support to solve the low productivity

		MAGAP	INDA	INAR	BNF	INIAP	INCCA	CFN	SESA	CADERS	PROFOR ESTAL	OTRA
COTOPAXI	Access to Assistance	15.0%	3.7%	3.0%	0.6%	3.3%	1.1%	1.1%	0.9%	1.1%	0.2%	0.0%
	Access to Credit	0.4%	1.0%	0.6%	19.1%	2.0%	0.9%	1.2%	0.1%	0.2%	0.1%	0.0%
	Qualification	10.9%	2.8%	2.6%	0.7%	6.4%	0.5%	0.6%	1.9%	0.8%	1.0%	0.1%
	Access to market	0.4%	0.2%	0.3%	0.3%	0.8%	0.9%	0.3%	0.5%	1.8%	0.2%	0.0%
	Others	1.0%	2.4%	2.9%	0.1%	1.6%	0.0%	0.0%	0.1%	0.2%	0.3%	2.4%
	Total	27.5%	10.0%	9.3%	20.8%	14.2%	3.3%	3.2%	3.5%	4.0%	1.7%	2.5%
TUNGURAHUA	Access to Assistance	12.4%	7.7%	1.5%	0.7%	2.6%	0.2%	0.0%	1.8%	0.0%	0.9%	0.0%
	Access to Credit	0.4%	1.7%	0.4%	25.6%	0.0%	0.2%	3.0%	0.4%	0.2%	0.0%	0.0%
	Qualification	9.6%	4.4%	0.9%	0.7%	2.6%	1.5%	0.2%	1.5%	0.0%	0.6%	0.0%
	Access to market	5.9%	0.0%	0.2%	0.0%	0.0%	0.0%	0.0%	0.2%	0.0%	0.0%	0.0%
	Others	0.2%	8.7%	0.7%	0.2%	0.4%	0.4%	0.2%	0.4%	0.2%	0.7%	0.2%
	Total	28.4%	22.5%	3.7%	27.3%	5.5%	2.2%	3.3%	4.2%	0.4%	2.2%	0.2%
BOLIVAR	Access to Assistance	21.4%	1.6%	5.5%	0.3%	6.0%	0.3%	0.3%	2.7%	0.0%	1.6%	0.3%
	Access to Credit	0.3%	0.0%	0.0%	26.3%	0.3%	0.0%	1.9%	0.0%	0.0%	0.0%	0.0%
	Qualification	10.4%	0.5%	0.3%	0.5%	1.1%	0.0%	0.0%	1.6%	0.0%	1.6%	0.0%
	Access to market	0.8%	0.0%	0.0%	0.3%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Others	0.8%	6.0%	0.0%	0.0%	1.6%	0.3%	0.0%	0.0%	0.3%	3.3%	1.6%
	Total	33.7%	8.2%	5.8%	27.4%	9.0%	0.5%	2.2%	4.4%	0.3%	6.6%	1.9%
CHIMBORAZO	Access to Assistance	10.9%	8.9%	10.6%	0.5%	6.3%	0.4%	0.3%	3.4%	1.1%	5.9%	0.0%
	Access to Credit	0.0%	0.4%	0.5%	24.3%	0.4%	0.1%	4.9%	0.1%	0.1%	0.0%	0.0%
	Qualification	6.2%	2.6%	1.4%	0.3%	1.9%	3.2%	0.3%	2.3%	0.3%	1.0%	0.0%
	Access to market	0.4%	0.0%	0.0%	0.0%	0.5%	0.1%	0.0%	0.0%	0.0%	0.1%	0.0%
	Others	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Total	17.4%	12.0%	12.5%	25.1%	9.2%	3.8%	5.5%	5.9%	1.5%	7.0%	0.0%

Technical Assistance : The fact that MAGAP could carry the technical assistance is common in each province. The reason why INDA and INAR were high in Chimborazo is not clear.

Credit: It was a common recognition that BNF is responsible for finance.

Qualification: The figures were dispersed. In Cotopaxi, there was a high expectation toward INIAP but also presented a little high expectation toward MAGAP. In Tungurahua, there was a high expectation toward MAGAP, followed by INDA without apparent reason. In Bolívar, there was a very high expectation toward MAGAP. In Chimborazo, where was similar to Bolívar, the expectation toward INDA was also high (half of the MAGAP) without apparent reason.

Market : In Cotopaxi, CADERS had high expectation. In Tungurahua, MAGAP was expected highly. In Bolívar, there was no expectation for anyone. Chimborazo was similar to Bolívar, however, if it is forced to expect, those are MAGAP and INIAP. It is thinkable that the activities of each institution including CADERS were not recognized in the places where projects are not carried out.

In General, highly expected institutions were as follows:

Cotopaxi: MAGAP, INDA, INAR, BNF and INIAP

Tungurahua: MAGAP, INDA and BNF

Bolívar: MAGAP and BNF

Chimborazo: MAGAP, INDA, INAR, BNF and INIAP.

CONCLUSIONS AND RECOMMENDATIONS

(1) Conclusions

- Inside the Productive Agricultural Units investigated in the four provinces it was clear that the agricultural activity developed by the small and medium producers no longer represents an important income source. It was because fundamentally costs to cultivate the farmlands and to maintain pasture were expensive, inputs were also very expensive and the incentives in the prices of their products when they ship to market were very low.
- The agricultural activity has been replaced by other actions such as the migration works trade activities and cooperative activities mainly. The fact that was especially emphasized in Tungurahua and Chimborazo was that most of younger group left their village abandoning their communities and farmlands.
- It could be concluded that the institutions that the interviewed small producers expected MAGAP and BNF assistance to improve their productivity.
- In some of the interviewed communities, it could be synthesized that most of them had a self-consumption agriculture, but they didn't have quantitative and qualitative capacity to fulfill the demands of the market.
- In some of the interviewed communities, almost all men, women and young population were engaged in migratory works. So, it can be characterized that they could not introduce new agriculture technology and diversify the production. Old population that left rural area are doing traditional agriculture and presents no condition for new technology neither diversify the products.
- Most of the interviewed communities pointed out the importance of the irrigation, already they are diversifying the products and is corresponding with alternative products for consumption.
- They expected the regulation of the lands and an integrated rural development project. So, it will be an incentive to the younger population to return to the village by introducing technical assistance, new technology, seed with quality, marketing, etc. It seems to become an profitable activity.
- It is important for certain producers to insist integral projects based on the potential of each sector but not any proposal involved only one part of the linked project. In such a way, the Study area could achieve a sectorization.
- It was very important to interview men as women in the topic of gender. They manifested that the family ties could be strengthened by taking decisions with the couple.
- It is known that the male chalvinism is not to say the real intention at every first time. It is very important to have found this result in the study, especially for the man who manifested that the decisions are given in the economic, political and social aspect under the couple's agreement.
- It is known that the community leaders have a wide knowledge of the community development related to the requirements in the social, organizational, productive abd other aspects. And they have a clear idea to guide the agriculture toward where they want to arrive, referring to a great demand in the managerial topic and value added products.

(2) Recommendations

- It is clear that the wish of the interviewed farmers is that the institutions in charge of the development should work together with the producers to develop the programs. That is to say, the Central, Provincial, Local Governments and the development Institutions unify their objectives with the clear role for each institution in the process.
- It is very important to notice that the producers don't require an agricultural projects that cover their temporarily necessities, but rather, they require a sustainable and long term programs, always considering the potential of each area and their geographical location.

- It is important that a series of productive activity that links not only the production, but also to the products transportation and the value added products that correspond to the markets and the post harvest necessities.
- It is proposed that the institutions of the state should join, agreeing to the Study on the way. The most outstanding necessities are irrigation, technical assistance, qualification and credit, therefore it is very important to correspond with programs that have these components.
- The analysis is very difficult, but it can be surmised that small scaled producers of individual form will advance toward their sustainably. Because it is very important to organize groups so as to get competitiveness to market products with high quality and to do such things continuously. On the contrary, they can not get competitiveness. Therefore, it can be clearly noted that institutions that is going to support the producers play a very important role if they want to improve this process to increase the producers income.
- It can be clearly noted that many people did not justify the Survey in the process of selection of the communities. Therefore, they not already consider the agriculture to be their main income source. They say that they establish themselves in cooperated business, migration works and other trade in order to live.