

# Sustainable innovation farm: A project built from stakeholders

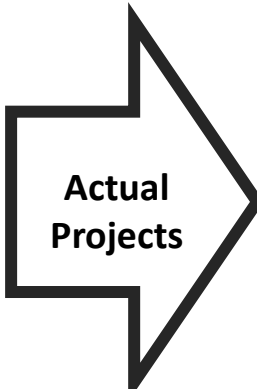
Study case, Farm located in the Guavio Region



# Introduction



**Ingenieros Sin Fronteras Colombia** Ingenieros Sin Fronteras Colombia is an inter-institutional, non-profit organization, conformed by Universidad de Los Andes and the Corporación Universitaria Minuto de Dios. This organization seeks to contribute to the quality of life of vulnerable communities in the Guavio region through engineering projects that are economically sustainable, culturally viable, and generate learning and innovation processes within the communities. (Universidad de los Andes, 2013).



- Strengthen of water management



- Strengthen of Green bussiness



- Creation of a sustainable Rural Innovation Center

# Methodology

## Interactive Planning

### PHASE 5

Implementation  
design and control

### PHASE 4

Resource  
planning

### PHASE 3

#### Means planning

- i) Acts
- ii) Actions, procedures and processes
- iii) Practices
- iv) Projects
- v) Programs

### PHASE 2

#### Ends Planning

- i) Idealized design
- ii) The objectives
- ii) The goals

### PHASE 1

#### Idealization: Formulating the Mess

- i) Systems analysis
- ii) Obstruction analysis
- iii) Projections and reference scenario

# Phase 1: Idealization: Formulating the Mess

## i) System Analysis:

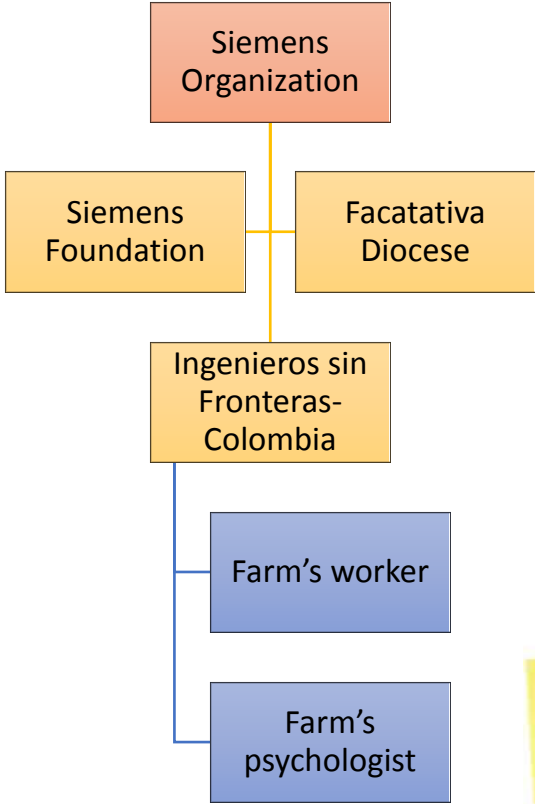


The farm works like a home for children in which it is promoted the study and facilitated the education in a school.



The production and sale of milk is a unique activity that is developing Granja del Padre Luna and is providing income apart from donations.

- 20% Sale of milk of their income
- 80% Siemens Donations



*“The most important goal was the involvement of the children living on the farm but also to ensure that the project would be self-sustainable”*

## Phase 1

### Idealization: Formulating the Mess

ii) Obstruction analysis:

DISCREPANCIES	DESCRIPTION
<b>About Organizational ends</b>	<p>Reality:</p> <ol style="list-style-type: none"><li>1. Want to shelter children and young men with problematic homes and to give education in agricultural, academic, ethic topics.</li><li>2. Develop projects that permit increase incomes and decrease Siemens donations.</li></ol> <p>Perception:</p> <ol style="list-style-type: none"><li>1. Teach to children about countryside activities so they can get to administrate one in the future.</li><li>2. Be a self-sustainable farm.</li></ol>
<b>About the means employed to pursue these ends</b>	<p>Reality:</p> <ol style="list-style-type: none"><li>1. Children are enrolled in Domingo Savio School and the farm has people with the capacity to proportionate integral formation and psychological support to the children.</li><li>2. Are development projects without the basic phases of a life project. This is reflected in the joint planning lack.</li></ol> <p>Perception:</p> <ol style="list-style-type: none"><li>1. Equal to reality</li><li>2. Joint planning with the farm and the documentation are not necessary because haven't be exit process.</li></ol>
<b>About the resources available for such pursuits</b>	<p>Reality:</p> <ol style="list-style-type: none"><li>1. The farm has the necessary resources to ensure children welfare. The resources becomes from donations and volunteering.</li><li>2. The farm has some of the resources to initiate the execution of some projects, however, these are not enough and for that reason it is necessary to do an initial investment.</li></ol> <p>Perception:</p> <ol style="list-style-type: none"><li>1. Equal to reality</li><li>2. Although the farm has useful resources to initiate the execution of some projects, none of the activities that are taking place right now are generating or are going to generate important revenues.</li></ol>

## Phase 1: Idealization: Formulating the Mess

ii) Obstruction analysis:

DISCREPANCIES	DESCRIPTION
<b>The way pursuits are organized</b>	<p>Reality:</p> <ol style="list-style-type: none"><li>1. The way of administrate the farm changes constantly.</li><li>2. The activities that are being executed, normally are not in charge of a person with knowledge to direct projects to apply in the countryside so a good performance cannot be obtained.</li></ol> <p>Perception:</p> <ol style="list-style-type: none"><li>1. It not considered as a problem, the administration constantly changes.</li><li>2. Everyone that propose a Project is going to carry out it.</li></ol>
<b>External stakeholders and other aspects of the environment</b>	<p>Reality:</p> <ol style="list-style-type: none"><li>1. Children's farm interact in tree environments; in Domingo Savio School, where they are relating with Guavio Region population; in the Farm, where they are relating with workers and volunteers; and in their homes, where they are related with their family and close friends. The Family Welfare intervenes.</li><li>2. Farm receives donations for the sustainable and to development projects that generate incomes. An organization calling Corpoguvio intervenes is some project involves the natural resources exploitation.</li></ol> <p>Perception:</p> <ol style="list-style-type: none"><li>1. It is not so clear the way that the Family Welfare intervenes.</li><li>2. It is considering that Siemens Foundation is the only farm sponsor. It is thinking that it can exploit the water sources of the farm without necessity of transact a permission.</li></ol>

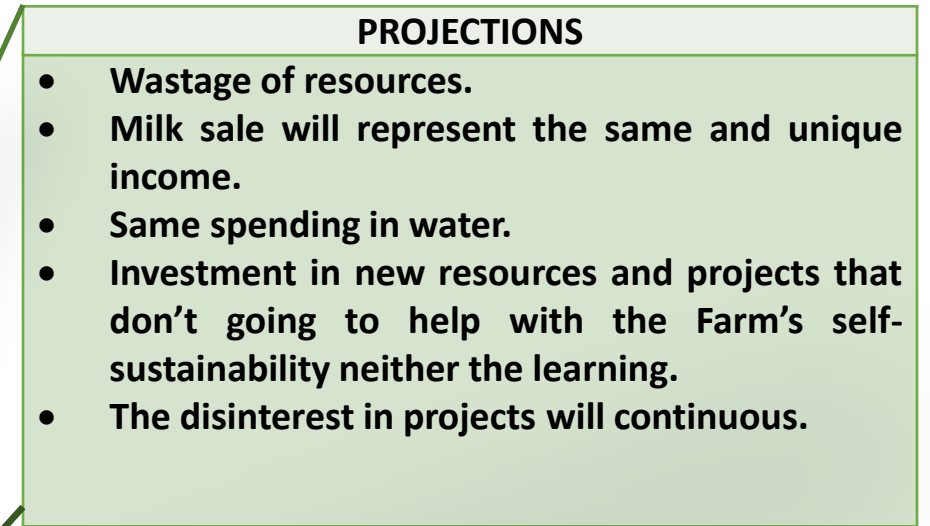
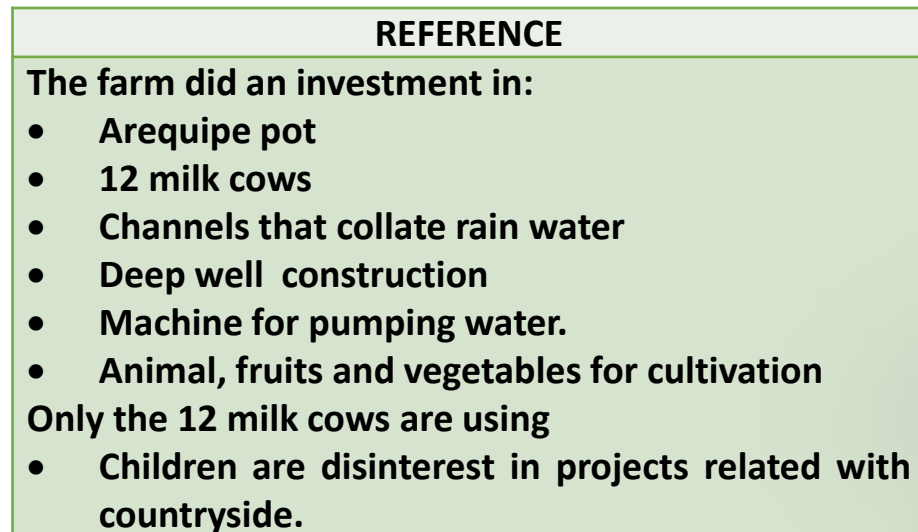
## Phase 1: Idealization: Formulating the Mess

ii) Obstruction analysis:

CONFLICTS	DESCRIPTION
Conflicts within individual who are part of the organization	Can be detected that exist intern conflict between children because most of them have problems in their homes, they don't have a coherent education with the things that are taught in the farm.
Conflict between units at the same level of the organization	It is possible to see that exist a conflict with children because not everyone has the same interests and not everyone wants to know things about countryside.
Conflict between organization and external groups.	In occasions it is observed a conflict between Granja del Padre Luna of Guasca and the Family Welfare because the people think that the last one could change the way that farm Works.

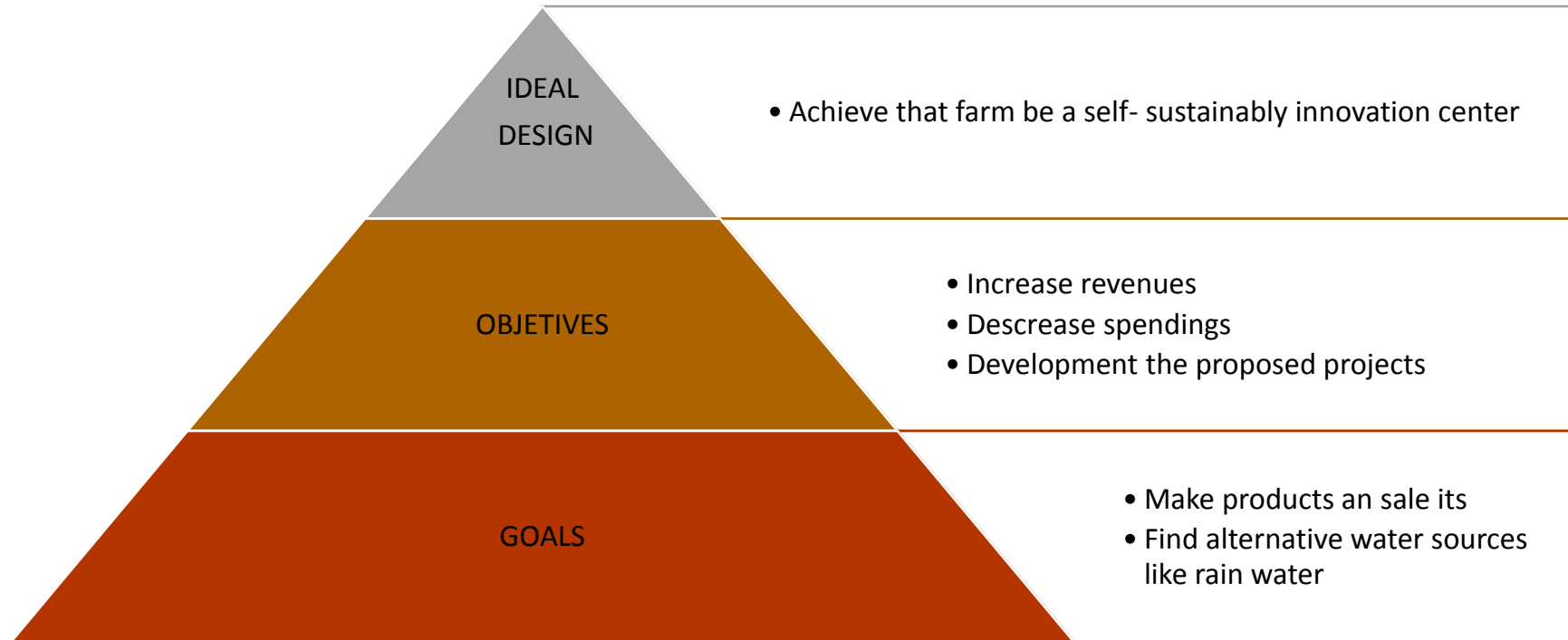
## Phase 1: Idealization: Formulating the Mess

iii) Projections and reference scenario\_





## Phase 2: Ends Planning



## Phase 3: Means planning

**GAP A:** The ideal design is that Granja del Padre Luna be self-sustainably but the projection show that if nothing changes, is going to exist a lot of wastage of resources, Investment in new resources and projects that don't going to help with the Farm's self-sustainability, also milk sale will represent the same and unique income and the water spending will be the same.

### **Acts:**

- Take a sampling of Granja del Padre Luna's well water.
- Try the probe in the farm.
- Evaluate the utility of resources that are in the farm
- Install a milking machine

### **Procedures**

- Determine the product that is going to produce with the farm's milk.
- Take a sampling of Granja del Padre Luna's well to analyze its condition.
- Quote the filter system that is necessary to be potable water

### **Practices**

- Documentation of process results
- Daily cow milking
- Weekly arequipe production

**GAP B:** The ideal design also mention that Granja del Padre Luna be an innovation center but the projections show that if nothing changes, projects are not going to help with learning and children are going to continue with disinterest in projects related with countryside.

### **Acts**

- Design workshops to involve children with projects

### **Procedures**

- Development a workshop in which children's farm learn how prepare the selected product.
- Development a workshop in which children living in the farm learn how works the probe designed to evaluate land properties.
- Development a workshop in which children living in the farm learn the importance of a filter and how it works.

### **Practices**

- Documentation of process results
- Join planning
- Make workshops with children to explain the projects that are developing in the farm by Ingenieros sin Fronteras members.

## Phase 4: Resource planning

### *Necessary Resources for Strengthening of milk production and arequipe production with this milk*

- At this moment, Granja del Padre Luna has the arequipe pot and 12 cows that are milking daily.
- To develop the projects it is necessary to buy arequipe inputs and a milking machine to increase production. For this it is necessary to have financial support.

### *Necessary Resources for treatment of water well and rainwater for its potabilization*

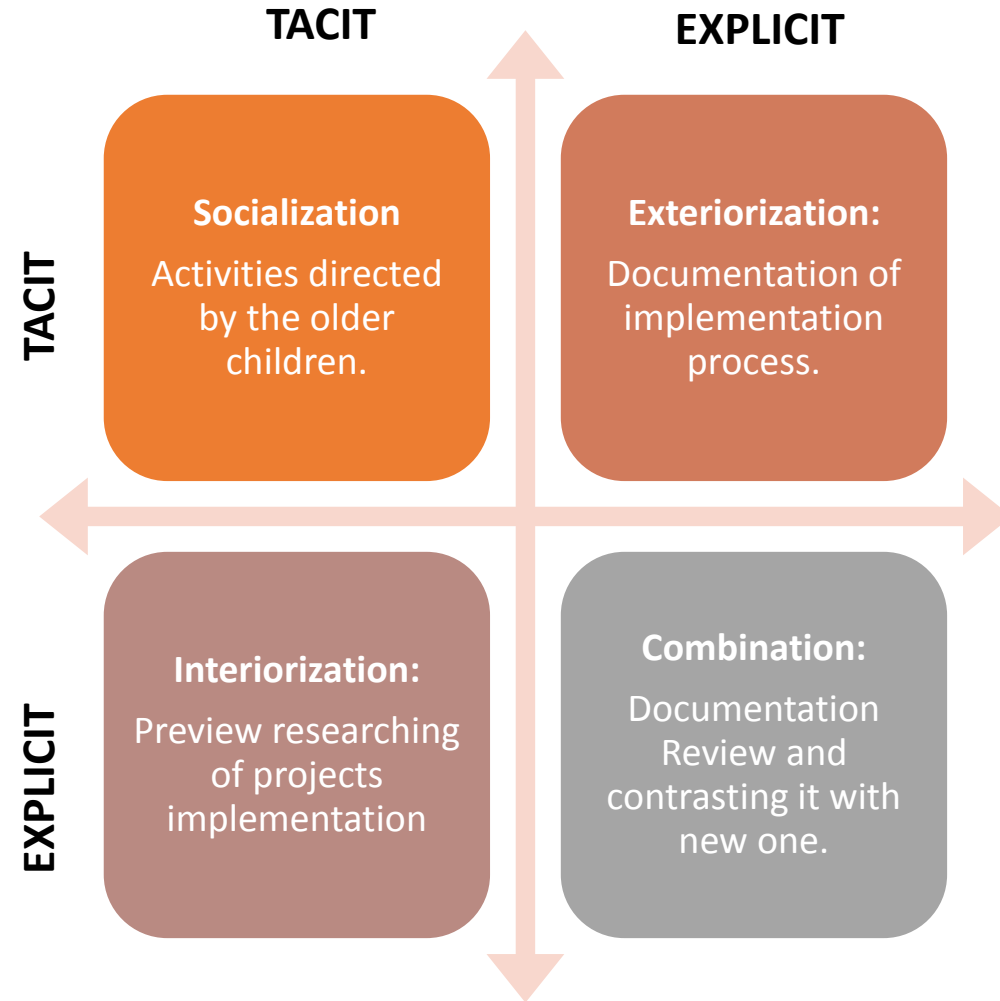
- At this moment, Granja del Padre Luna has channels to conduct rainwater.
- For this Project, it is necessary to invest in a rainwater collector system. As part of the system, it is necessary to install a filter like the Siemens' SkyHydrant filter.

### *Necessary resources for Innovation and investigation in agricultural production*

- At this moment a student and a teacher of electronic engineering from Universidad de los Andes are working in the probe construction.
- For this Project, it is necessary to invest in this probe.

**Phase 5: Implementation design and control**

For the continuity of the projects was proposed a leader in each one of the projects. It is important that each leader transmit the information between levels.



# Principál Findings

***Strengthening of milk production and arequipe production with this milk***



T

- From farm's cattle, produce milk and transform it in arequipe.
- Manage knowledge through learning spaces about the operation of arequipe pot.

A

- Universidad de los Andes-Ingenieros Sin Fronteras – Siemens Foundation – Farm's workers- Children living in Farm- Farm's administrators.

S

- Universidad de los Andes-Ingenieros Sin Fronteras – Siemens Foundation – Farm's workers- Children living in Farm- Farm's administrators.

C

- Children living in the Farm- Universidad de los Andes's students- Guasca Community.

O

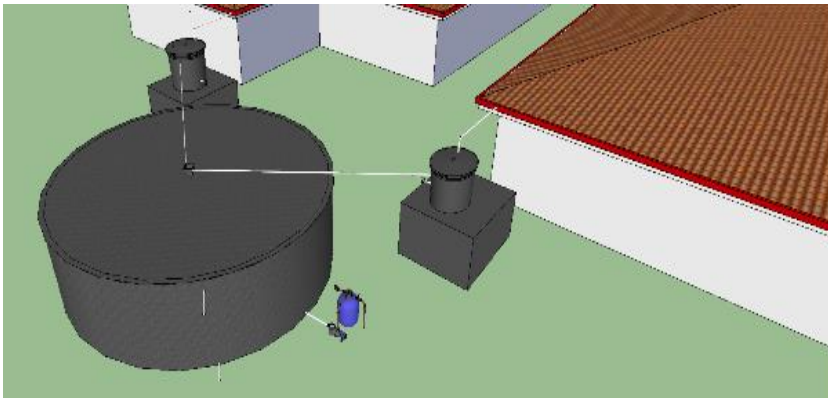
- Siemens Foundation- Facatativa diocese

I

- Family Welfare Institute - Domingo Savio School- Guasca Mayoralty

# Principál Findings

## *Tratament of water well and rainwater for its potabilization*



T

- From system collecting rainwater, purify water collected
- Manage knowledge through learning spaces about the operation of rainwater collection and water purification

A

- Universidad de los Andes-Ingenieros Sin Fronteras – Siemens Foundation – Farm’s workers- Children living in Farm- Farm’s administrators.

S

- Universidad de los Andes-Ingenieros Sin Fronteras – Siemens Foundation – Farm’s workers- Children living in Farm- Farm’s administrators.

C

- Children living in the Farm- Universidad de los Andes’s students.

O

- Siemens Foundation- Facatativa diocese

I

- Family Welfare Institute - Domingo Savio School- Guasca Mayoralty

# Principál Findings

## *Innovation and investigation in agricultural production*



T

- From farm's land, producing fruits and vegetables, knowing before land vocation.
- Manage knowledge through learning spaces about the operation of the prob.

A

- Universidad de los Andes-Ingenieros Sin Fronteras – Siemens Foundation – Farm's workers- Children living in Farm- Farm's administrators.

S

- Universidad de los Andes-Ingenieros Sin Fronteras – Siemens Foundation – Farm's workers- Children living in Farm- Farm's administrators.

C

- Children living in the Farm- Universidad de los Andes's students- Guasca Comunity

O

- Siemens Foundation- Facatativa diocese

I

- Family Welfare Institute - Domingo Savio School- Guasca Mayoralty.

# CONCLUSIONS

- Ingenieros sin Fronteras- Colombia is developing social innovation through workshops and projects in which all the points of view of the different stakeholders are important for the solution. A particular case is Granja del Padre Luna in which ISF has been implementing projects that involve the interests of every stakeholder.
- To solve problems that involve many diverse stakeholders the interests of all of them should be considered in a participative way in order to achieve a systemic decision process. In this way, it is possible to obtain a favorable solution that all agents agree with. Methodologies such as Interactive Planning give tools that let achieve the study goal. Its application permitted results that let the organization survive by adapting to the ongoing changes.
- In the application of this methodology, many meetings with the decision-making agents were made. In them, each one of them gave their understanding of what the farm is today and what they expect it can become in the future, this helped in the construction of a shared vision for the farm. In a similar way, involvement of the boys in the project was encouraged and their opinion about the farm, past and future projects was taken into account.
- Ingenieros sin Fronteras team wants that all of the young adults of the Guavio Region, a vulnerable zone, to have the opportunity to be involved in these kinds of activities. This knowledge is going to allow young adults in the Guavio region to have the ability to create new business ideas for the region, which will create development.
- Projects that were proposed for the Farm, not only permits the self-sustainability but the creation of innovation. The opportunity to participate in workshops in which topics about engineering are discussed also allows children living in the farm to find their professional vocation. This means that the purpose goes beyond giving to people some things that they need, it is also important to bring up skills that may turn in benefit of their goals and aspirations.