

# Rancho Ebenezer

## An Agroecological Farm in Nicaragua



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Systems and the AGROECOPRAC  
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**Agroecology in Practice Program** ([www.agroecoprac.org](http://www.agroecoprac.org)) is a SIDA (Swedish international development cooperation agency) – financed program to start University education and training in Agroecology in three collaborating countries: Sweden (Swedish University of Agricultural Sciences-SLU; Ethiopia (Mekelle University) and Uganda (Uganda Martyrs University).

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# I. Nicaragua Country Profile

## 1.1 General description

Nicaragua is the largest country in Central America, located in the middle of the Central American isthmus, between 10°42' and 14°59' North and 83°24' and 87°11' West.

Nicaragua is often called the “Land of the Lakes and Volcanoes” as it has two large lakes (Lago Xolotlán and Lago Cocibolca), many active volcanoes and more than 30 watersheds.

Lago Cocibolca or Lago de Nicaragua (8 264 km<sup>2</sup>) represents the largest body of fresh water in Central America.

## 1.2 Nicaraguan climate

Nicaragua has a tropical climate, with dry and humid weather in the Western zone, and humid in the Eastern zone of the country. There are two seasons, dry and rainy; usually called summer and winter. The rainy season can vary from 5 to 12 months in the different parts of the country.

The mean annual temperatures range between 25-35 °C, with little changes over the year. The altitudes range from sea level to 2 100 meters above sea level.

**Table 1. Quick facts**

Capital	Managua
Population	5.8 million inhabitants
Land area (thousand ha)	12 034
Arable land (thousand ha)	1 900
Area with permanent crops (thousand ha)	230
Forests (thousand ha)	3 114
Pastures (thousand ha)	3 016
Land under irrigation (thousand ha)	61
Lakes and lagoons extensions	10 407.6 km <sup>2</sup> , islands included
GDP/capita, 2010	1 071 USD
Most important export goods	Coffee, meat, peanuts, livestock, sugarcane, gold, lobsters, dairy products, shrimps, beans
Most important import goods	Consumer goods, oil, fuel and lubricants

Source: [www.bcn.gob.ni](http://www.bcn.gob.ni), <http://www.fao.org/countries/55528/es/nic/>

### 1.3 Overview of the Nicaraguan agricultural sector

Nicaragua has a developing economy based largely on agriculture. Arable land amounts to about 16% of the total land area.

The main agricultural products for export are coffee (*Coffea arabica* L.), meat, livestock and dairy products, sugar, peanuts (*Arachis*

*hypogaea* L.), common beans (*Phaseolus vulgaris* L.) and bananas. Non-traditional exports are growing and include: honeydew melons, cantaloupe, sesame seed, onions, baby corn, asparagus, artichokes, and cut flowers. Sorghum, cacao, cassava, tobacco, plantains, and various other fruits and vegetables are produced on a smaller scale for the local markets.

Agricultural production accounts for 74% of the total value from exports. It also contributes with 19% of the GDP and employs about 31% of the economically active population<sup>1</sup>.

## 1.4 Agricultural Policy

In 2009, the Ministry of Agriculture and Forestry published a national policy for nutritional food security and sovereignty<sup>2</sup>. Such policy was the result of a participatory and coordination process among different actors in the agricultural sector of the country. This policy was prepared in the framework of the Human Development Plan of Nicaragua prepared in 2009<sup>3</sup>.

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<sup>1</sup> [www.bcn.gob.ni](http://www.bcn.gob.ni) and <http://www.fao.org/countries/55528/es/nic/>

<sup>2</sup> MAGFOR. 2009. Política de seguridad y soberanía alimentaria y nutricional desde el sector público agropecuario y rural. Ministerio Agropecuario y Forestal. Managua, Nicaragua. 46 pp.

[http://www.enlaceacademico.org/uploads/media/Politica\\_SSAN\\_UV\\_140509.pdf](http://www.enlaceacademico.org/uploads/media/Politica_SSAN_UV_140509.pdf)

<sup>3</sup> Gobierno de reconciliación y unidad nacional. 2009. Plan Nacional de Desarrollo Humano Actualizado. 2009-2011. Resumen Técnico. Septiembre 2009. 190 pp.

<http://www.pndh.gob.ni/documentos/pndhActualizado/pndh.pdf>

## 1.5 Organic agriculture in Nicaragua

At the country level, there is public entity in charge of applying the rules for organic production. The Organic Table (“Mesa Orgánica”) is a space for discussion, where the public and private sector express their demands and interests in developing organic production.

The country lacks a special program for the organic sector, with policies and regulations. However, the organic movement, with the support of the Organic Table has elaborated a proposal for instruments and mechanisms to promote the development of the organic production.

## 1.6 Facts and figures for the organic sector in Nicaragua

According to IICA (2009)<sup>4</sup>, Nicaragua has made progress in the development of the organic sector.

There are more than 70 000 ha of land under certified organic production and in transition to organic. These farms offer more than 30 different products. The main organic products produced in the country are: coffee, cocoa beans, sesame, honey and cashew.

There are more than 7 000 small and middle-sized farmers involved in organic production. The total value of exports from organic products is expected to reach more than 29 million USD/year. The positive social and environmental impact of this production is also

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<sup>4</sup> [http://www.iica.int.ni/Estudios\\_PDF/Libro\\_Organico.pdf](http://www.iica.int.ni/Estudios_PDF/Libro_Organico.pdf)

expected to be considerable.

On the other hand, the internal market for organic products is developing very slowly. Organic products are mainly sold in some super-markets, special stores, seasonal fairs and farmer's markets.

### **1.7 Policy for the agroecological sector in Nicaragua**

In 2009<sup>5</sup>, the government prepared a diagnostic at the national level, in order to identify the strengths, weaknesses and opportunities of the agroecological sector in the country. In 2010, the government prepared a proposal for strategy for the agroecological production for food security and sovereignty<sup>6</sup>. The proposal includes a description of the agroecological model considering the environmental, cultural, economical and social components as part of the process.

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<sup>5</sup> MAGFOR. 2009. Política de Fomento y Desarrollo de la Producción Agroecológica. Ministerio Agropecuario y Forestal. Managua, Nicaragua. 11 p.  
[http://www.ruta.org/rediaocd/docs/NICARAGUA/LEYES/Politica\\_Agroecologica\\_Nicaragua.pdf](http://www.ruta.org/rediaocd/docs/NICARAGUA/LEYES/Politica_Agroecologica_Nicaragua.pdf)

<sup>6</sup> Estrategia de Estado de Producción Agroecológica para la Seguridad y Soberanía Alimentaria. 26-08-2010.  
[http://www.enlaceacademico.org/uploads/media/ESTRATEGIA\\_DE\\_ESTADO\\_DE\\_PRODUCION\\_AGROECOLOGICA-.pdf](http://www.enlaceacademico.org/uploads/media/ESTRATEGIA_DE_ESTADO_DE_PRODUCION_AGROECOLOGICA-.pdf)



## II. The farm Rancho Ebenezer

### 2.1 Introduction

Rancho Ebenezer (Rancho Agropecológico en Especies Menores-RAEME <sup>7</sup>) is a farm with an integrated sustainable rural development strategy. [Watch video of the farm here.](#)

Farm name	RAEME (Rancho Agropecológico en Especies Menores Ebenezer).
Coordinates	11°52' North and 86°03' West
Altitud	450 meters above sea level
Farm size	28 ha
Farm type	Middle sized
Soil type	Loam, sandy loam and clay loam soils
Mean annual rainfall	1 200 mm along the year. Rainy season from June to November.
Mean annual temperature	Maximum temperature = 31°C Minimum temperature = 22 °C
Farmer and	1. Juan Francisco Juárez Zapata. 63 years old, theologist and

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<sup>7</sup> Don Francisco has coined the term “agropecológico” which is an integration of agroecológico + pecuario (from the latin *pecus*: *livestock*)

family	<p>farmer.</p> <ol style="list-style-type: none"> <li>2. Susana Díaz Castro, wife, 53, administrator and farmer.</li> <li>3. Wilmer Fernando Sandoval Díaz, son, 28, university student, he works, but does not live at the farm</li> <li>4. Carlos Iván Sandoval Díaz, son, 33, studies agricultural sciences, he works but does not live at the farm</li> <li>5. Carolina Esther Juárez Cruz, daughter, 33, she studies International Relations, does not live at the farm</li> </ol>
Employees	22 employees + Don Francisco and his wife that work but do not receive any salary
Small animal production	Pigs, goats, rabbits, sheep, hens, earth worms, ducks, geese
Crop production	Coffee, Musa spp, avocado, mango, Citrus spp, and many other tropical fruit trees.
Farm components	<ul style="list-style-type: none"> <li>•Diversified ecological agricultural production (crops and small animals)</li> <li>•Soil and water conservation</li> <li>•Transference of viable agroecological technologies to rural farmers</li> <li>•Research and training centre for farmers or other</li> <li>•Production and delivery/sales of seedstock for farmers (goat, poultry, rabbit, and earth worms)</li> <li>•Transfer of plant material for forage, fruit trees, reforestation and botanical medicine</li> <li>•Veterinarian and human laboratories</li> <li>•Agroforestry</li> <li>•Foreign internships</li> </ul>
Links	Web page of the farm: <a href="http://www.ranchoebenezer.org/">http://www.ranchoebenezer.org/</a>

## 2.2 History of Don Francisco and the farm

Don Francisco and his wife bought the farm in 1987. They started with 4.2 ha. The original idea was to start a milk farm with 23 cows (15 Brown Swiss + 8 cross creole). They wanted to help other people with the milk and improve their nutrition. To own cows is also seen as a symbol of social status.

### 2.2.1 Reasons for buying the farm

Don Francisco comes from a farmer family. Until the age of 12 years old, he lived in a family farm in Chichigalpa, north of Nicaragua. His family moved to Managua searching for the dream of the capital. Instead, he had to work four years collecting copper, aluminium and bronze in the largest garbage dump of the city of Managua. At times, he had to collect food for his family from the garbage. Later, he made a living by selling tortillas, newspapers, tomatoes, onions, or transporting baskets on his head.

Later, he worked as office boy. As he never studied when he was a child, he started to study his primary and secondary school during the nights, after work. He also studied accounting and typing.

The name Ebenezer was chosen in 1988, they were looking for the right name. Ebenezer is Hebrew for “Stone of the Help”, because “God has led us thus far” or “Thus far God has helped us” according to Samuel 7:12. “Because all we had was because of the Lord” according to Don Francisco.

### 2.2.2 Conversion from milk farm to small animals farm

The milk farm was not profitable enough; it was impossible to have 23 cows in just 4 ha of land. During this time, Doña Susi acquired three goats, which were kept mainly as pets, not for production.

About that experience, Don Francisco says “we learned the lesson that we knew very little about animals”, and that they had too little area for so many cows. In 1989, they finished with the milk farm; the animals died, were sold or eaten.

In those years, Don Francisco discovers the alternative of goats and other minor species. He also learned that goat milk is better for the stomach for those suffering from lactose intolerance. Don Francisco took a course on small livestock production in Colombia. Then, they see the goats as an alternative to help other people and for production.

However, they made the mistake of starting with several species of small animals at the same time. They could not manage all of them at the same time, and spent too much energy on this. They realized that he had to do this as a process, in steps. Since 1995, the farm has had a more stable production and economical situation.

He has learned a lot from teachers at UNA (Universidad Nacional Agraria) and other universities in Nicaragua, Honduras, Costa Rica and Cuba.

## 2.3 Climate of the area

The climate is tropical and warm with a hot and dry period from March to April. The lowest temperatures occur from November to February. Since 2006, the average maximum temperature is 32°C. The growing season is from May to October. The day length is 10–13 hours along the year.

The farm is in the process of adaptation to climate change. Clear-cutting of trees has affected the amount of rainfall, which was 800 mm/year before 2005. It is 700 mm/year nowadays. This has affected milk production.

## 2.4 Philosophy of the project

### 2.4.1 Mission

Together, with the “least and most humble of God” (Mt. 25:40), contribute to agropecological development in rural communities, emphasizing on small animal husbandry. We work to achieve social, ecological, and economic improvements by means of concrete biblical actions, such as:

- Focusing on gender issues in the work with the rural families
- Increasing self-esteem
- Theoretical and practical training



**Picture 1.** Don Francisco visiting a farmer's chicken pen. E. Pérez.

- Promotion of a more effective use of land
- Transfer of appropriate and adequate technology to meet the needs of the families.

### 2.4.2 Vision

On a national level, Rancho Ebenezer and its beneficiaries will promote, appropriate, and apply Generosity (Prov. 11:25) and Solidarity (Mt. 5:7), that serve the most vulnerable members of families: children, women, elderly, youth, and indigenous groups.



**Picture 2.** Don Francisco visiting a farmer's garden. Emilio Pérez.

### 2.4.3 Purpose of the farm

According to Don Francisco, the purpose of the farm is “to empower rural communities to solve their most pressing food and environmental problems. We do this by using the methodology called MIDPA”.

### 2.4.4 Diversified Integrated Stewardship of the Yard – MIDPA<sup>8</sup> method

Don Francisco developed the MIDPA methodology at the farm. It can be translated as “Diversified Integral Stewardship of the Yard”. According to Don Francisco, the method “allows us to teach the people how they can emerge from poverty and hunger by using the few resources they may have available to them”. There is a MIDPA demonstration area in the ranch.

Don Francisco wanted to include the diversification subject for the farm. He says: “I had to not only talk about diversity, but also work with it in practice”. As he belonged to a Christian organization, he also wanted to work in favour of the rural communities.

By implementing the MIDPA in their farms, the villagers may produce food for their animals, their children and themselves, using only a 480 m<sup>2</sup> area (1/10 of an acre). In this area, the family will produce small animals (chicken, goats, sheep, rabbits and worms), vegetables, fruits, forest trees and animal feed.

MIDPA consists in the management of the plots or yard with the objective to make them more productive. The concept also considers that the members of the family will take part in the development and transformation of their plots.

The family yard is transformed into a food production and business

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<sup>8</sup> MIDPA stands in Spanish for Mayordomía Integral Diversificada de Patio

unit, which transforms organic residues (goat and chicken manure, as well as residues from branches and trees) to be used in the different crops. In this way, they can also get a more clean production, increasing the family health and protecting and improving the environment.

The products to be obtained from the MIDPA area are: goat milk, meat (from goat, chicken and rabbits), eggs, vegetables (sweet pepper, tomatoes, onions, celery, mint, cilantro), fruits (orange, avocado, mango), fodder trees (*Trichanthera gigantea*, *Morus* sp., *Hibiscus* spp., ramie) and earthworm fertilizers.

The families/farmers are encouraged to use the local materials they have in their villages to build the pens for the animals. The families themselves provide the labour. There is MIDPA demonstration area at RAEME.

### 2.4.5 The MIDPA project

The project is carried out during four years.

1st year	In an area of 880 m <sup>2</sup> , the family starts with the production of chicken, earth-worms (for the production of organic fertilizer), establishment of fodder crops, vegetables and fruit plants, establishment of the SAL system, practical and theoretical training.
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2nd year	The total area is increased to 5 280 m <sup>2</sup> (six times the area for the first year). The family starts with the production of goats and rabbits. The yard will already have the capacity to produce enough fodder for feeding the goats. The areas for vegetable, fruits and forest tree production are increased.
3rd- 4th year	One reproductive goat and four sheep are added to the plot. The goats will be used for milk production, while the sheep will produce meat.

### 2.4.6 The SAL system

This system was also developed by Don Francisco at the farm. The objective of the system is to protect the soils from erosion, especially in sloppy or hilly areas.

### 2.4.7 Expected results from the MIDPA production area<sup>9</sup>

For the training of other farmer families, Don Francisco has prepared a detailed plan with the expected production costs and expected income from a MIDPA production area of 0.7 ha. All figures are in USD.

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<sup>9</sup> In this case, 1 manzana or 0.7026 ha.

Production costs	Year 1	Year 2	Year 3	Year 4	Year 5	Total
Hens	1,218	1,218	1,218	1,218	1,218	6,091
Worms	174	348	523	523	523	2,090
Goats		513	1,026	1,026	1,539	4,104
Sheep			791	1,055	1,055	2,901
Rabbits		106	106	106	106	422
TOTAL	1,392	2,185	3,664	3,927	4,440	15,609

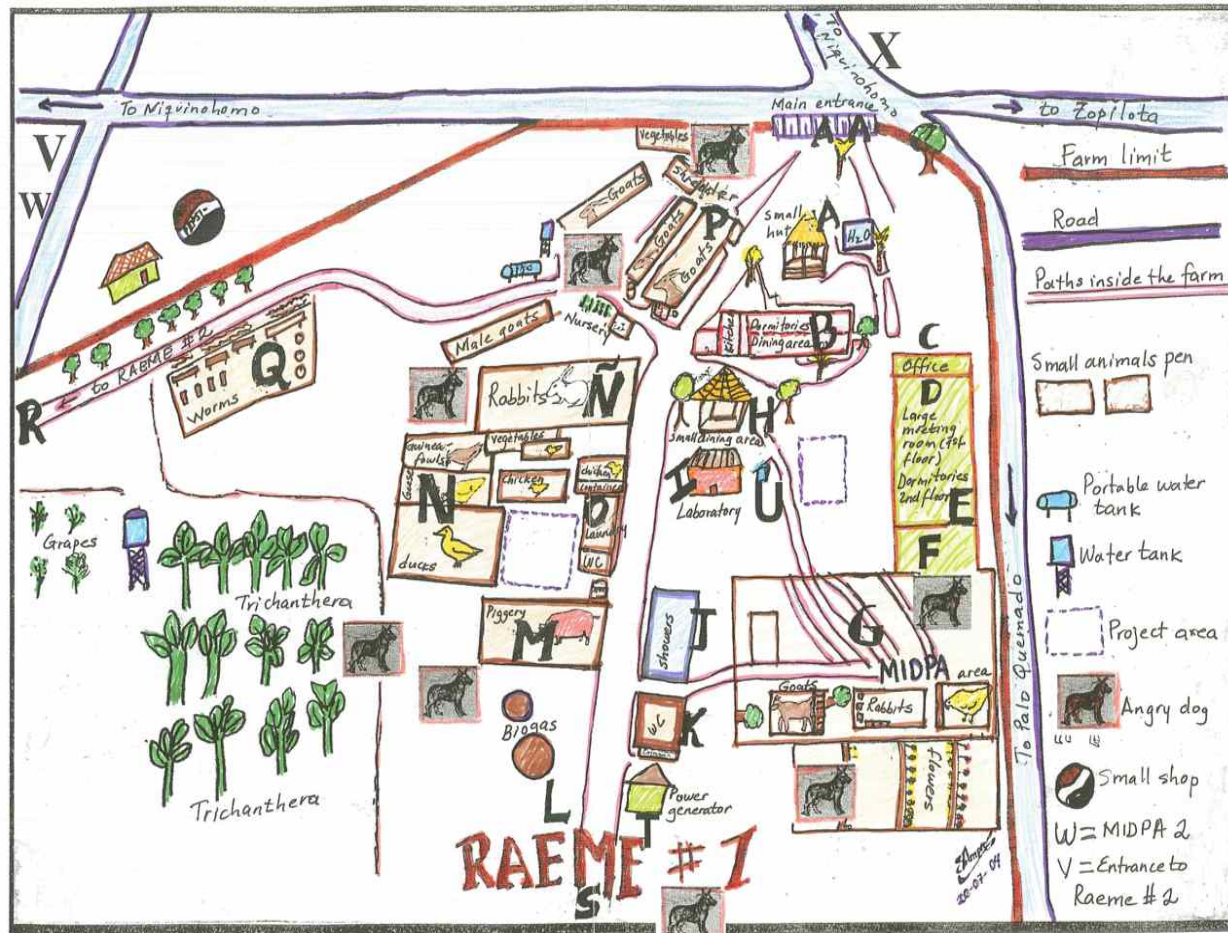
Income	Year 1	Year 2	Year 3	Year 4	Year 5	Total
Hens	3,656	3,656	3,656	3,656	3,656	18,281
Worms	1,804	348	3,647	3,647	3,647	13,093
Goats		905	1,941	1,941	2,846	7,633
Sheep			871	1,145	1,145	3,160
Rabbits		359	359	359	359	1,435
TOTAL	5,460	5,269	10,474	10,748	11,653	43,603

## 2.5 Buildings, tools and machinery

**Table 2.** Main buildings in the farm area are (see map on Picture 3):

Building	Letter in map	Use
Gate/main entrance	AA	Main gate and entrance for visitors, car entrance
Water reservoir	A	Water storage for 150 barrels
Small ranch/hut	A	Waiting area
Multiple use building 1, two floor building	B	Kitchen + main dining room + lodging area. Seven dormitories for 27 persons approximately
Multiple use building 2, two floor building	CDEF	Main lodging area + training/conference room + administration office + apartment (for Don Francisco and Doña Susi). There are nine rooms for 33 persons approximately.
MIDPA demonstration area	G	Hens, rabbits, goats, warehouse, sheep, big goat pen, tilapia pond, worm pond, old tires with spices, herbs and vegetables.
Dining area	H	Smaller sized hut, used as extra dining area or for just sitting outside.
Veterinary and human laboratory	I	For taking and analyzing blood, urine and faeces samples from animals and humans. Used also for training of Popular Veterinaries

Building	Letter in map	Use
Latrines and showers	J-K	Used for the visitors and workers
Biogas area	L	Production of biogas for consumption at the farm
Piggery	M	For the production of pigs
Poultry area	N	Chicken production area (for sale and for supplying to other farmers). Also, rustic area with ducks and geese for consumption at the farm.
Main rabbit pen	Ñ	Production of rabbits for supplying to other farmers. There is also a pen for the male goats.
Laundry area	O	Clothes washing area
Goat pen	P	Main goat pen + milking area for the goats. Also tools warehouse
Earthworm beds	Q	Production of earth worm fertilizer (humus). 45 beds
Power plant	T	Generation of electricity for the farm when there is no commercial electricity
Other areas		Sheep pen, hut for shredder, slaughter area



**Picture 3.** Map of buildings in RAEME #1. Original by RAEME with some redrawings and English names by Margarita Cuadra.

**Table 3.** Inventory of the tools used at the farm. Many of the tools may have different uses. Cooperants and/or missionaries visiting the farm have donated most of these tools.

Use	Tool	Quantity
Agriculture and forestry	Axes	3
	Chain saw	4
	Hoes	4
	Iron digging bars	9
	Knives	13
	Measuring tapes	10
	Picks	17
	Rakes	4
	Shovels	19
	Spray pump	1
	Wheel barrows	6
Construction	Drills and twist drill	+20
	Levels	18
	Paint brushes	7
	Screwdrivers	+200
	Trowels	26
Electricity	Battery chargers	3

Use	Tool	Quantity
	Knives	13
	Pliers	8
Plumbing	Plumbing tape	NA
	Wrenches	+300
Carpentry	Chisels	+30
	Circular and manual saws	3
	Wood planes	13

**Table 4.** Main equipment and machinery used at the farm. Most of this equipment has been received as donation from cooperants and/or missionaries visiting the farm.

Equipment/machinery	Use
Oxen plough	Soil preparation, transportation
Shredder	Shred plant material, biomass for animal feed
Water tanks, 2	Water transportation
Water pump	Water pumping from well
Diesel energy generator, 2	For generating electricity
Chain saw	Tree cutting
Pick-up light truck	For transportation
Jeep	Used at the farm, but belongs to Doña Susi
Trailer	For transportation
Centrifuge, microscopes, digital camera for the microscope	In the animal and human laboratory
Freezers and refrigerators	In the slaughter area



## 2.6 Crop production

Maize (*Zea mays* L.) and beans (*Phaseolus vulgaris* L.) used to be planted until 2010. They stopped producing them because the yields were too low. Don Francisco thinks the environmental conditions are not the best for planting those two crops. The field plan is presented on picture 21.

### 2.6.1 Coffee and fruit trees

Coffee is grown in 2 ha of land. The variety planted is Caturra and grown under the shade of trees. Organic fertilizers are applied to the crop. The coffee is grown for self-consumption at the farm.

The main fruit trees are: Musa spp, avocado (*Persea americana* L.), mango (*Mangifera indica* L.), Citrus spp, guavas or guayabas (*Psidium guajava* L.), sapotes (*Manilkara zapota*), caimitos (*Chrysophyllum cainito* L.), jocotes (*Spondias purpurea* L.), guabas (*Inga edulis* L.), chirimoyas (*Annona cherimola* Mill.), guanabanas or soursop (*Annona muricata* L.), sonsapotes (*Licania platypus* L.), cashew (*Anacardium occidentale* L.) and pitahaya (*Hylocereus undatus* L.). These fruits are mainly used for self-consumption by the family and used in the elaboration of foods and drinks for the farm visitors.



Picture 4. Musa spp. M. Cuadra

## 2.6.2 Vegetables in tires

Vegetables for self-consumption at the farm are grown inside old tires in order to save space and reuse the old tires. The main vegetables and spices planted are: sweet peppers, tomatoes, celery, mint, oregano, cilantro, hot peppers and onions.



**Picture 5.** Vegetables in tires. M. Cuadra

## 2.6.3 Nutrient management

There are three types of soil at the farm: clay loam soil, sandy loam and loam. There is no recent soil analysis, but to enrich the soil, Don Francisco has been working with manure, bocashi, worm-humus and green manure. He has observed that the soils get more fertile when using organic fertilizers. Irrigation is applied only for the MIDPA demonstration area.



**Picture 6.** Vegetables in tires. M. Cuadra

## 2.7 Small Livestock production

### 2.7.1 Goats

At the farm, the priority for production in goats is the seedstock. The seedstock is sold internally in Nicaragua and to other countries (El Salvador, Honduras and other).

A six months goat can cost up to 250 USD, while a nine months goat can cost up to 350 USD.

For the MIDPA area, with six goats, the families could have their everyday milk (1 to 2.5 liters/goat/day.). If they want, half of that milk can be sold. The male goats can be sold as meat or alive.



Picture 7. Goats. E. Pérez

### 2.7.2 Rabbits

The objective of the rabbit production area is for seedstock replacement and sales to beneficiaries of the projects and other farmers. Eighty per cent of the production is for sales of meat and the rest is left for seedstock. The rabbit races are white New Zealand (females) and California (males). Other races are Lop (French and English) and Butterfly.



Picture 8. Rabbits. M. Cuadra

For the rural families, the rabbits can provide them with meat of

good quality for the family consumption. Each rabbit could provide around 1 kg of meat. It is estimated an annual production of 150 rabbits/year for the MIDPA area.

### 2.7.3 Earth worms

The earth worms are produced at the farm for their solid and liquid (purin) humus. These fertilizers are applied to the crops from the farm and also sold.

Earth worms are also sold as seedstock. The varieties present at the farm are California Red (shorter-size) and African Red (longer-size). They both have the same price for sale (25 USD/kg).



Picture 9. Earth worm beds.  
Emilio Pérez



Picture 10. Earth-worm fertilizer

products sold at the farm. M.  
Cuadra

The purin is used to strengthen the leaf, as repellent, also protects against aphids. According to Don Francisco's experience, purin is more than just a foliar fertilizer. The earth worms also help protect the soil.

For the MIDPA area, it is estimated that 120 kg of earth worms produce 480 qq of humus/year (around 21 600 kg/year). Also, the earth worms can be sold as seedstock. Don Francisco has plans to

industrialize the earth worm by converting it to flour for protein feed for the animals.

## 2.7.4 Poultry

### Hens

At the ranch, egg production is the main objective of this area, as the sales of seedstock is not profitable. For that, an incubator would be needed.

For the MIDPA and the families, it is estimated by Don Francisco that 40 hens produce 28 eggs/day (or 10 220 eggs/year). It is estimated that only 7 eggs/day would be sold (12 eggs/day for home consumption + 9 eggs/day for seedstock). As for meat, around 2 500 kg of chicken meat could be produced around the year.



Picture 11. Hens. M. Cuadra

## Ducks, geese and piches<sup>10</sup>



**Picture 12.** Ducks, geese and piches.  
M.Cuadra

These species are produced just for internal consumption at the farm. The products are meat and eggs. Duck eggs are considered to be more nutritive than chicken eggs.

### 2.7.5 Piggery

The objective of the production of pigs is for financing other activities at the farm. This means that this area is seen as an enterprise with around 17% of revenues.

Ninety per cent of the production is destined for meat, and the rest for seedstock.

The races produced are Landrace and York, with crosses between them. There are also animals of the Duroc race, which will be introduced again for meat production.

Food concentrate is bought in order to feed the pigs and maintain

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<sup>10</sup> Piche (*Dendrocygna sp.*): small half-wild brown duck.



productivity. However, they can also feed the pigs branches and fruits from the farm. Pigs are sold when they are six months old. Or they can also be sold as piglets when they are 32-35 days old after weaning. As piglets, they can be sold at around 45 USD each.



Picture 13. Piggery. M. Cuadra

The piggery uses most of the resources at the farm, and it is also where more income is coming from. Doña Susi takes the decisions regarding the pigs.

### 2.7.6 Sheep

At the ranch, the main objective with the production of sheep is meat (70%) and seedstock (30%).

For the MIDPA area, it is estimated that the sheep could provide around 83 kg meat/year. Part of that meat could be sold.



Picture 14. Sheep. M. Cuadra

2.7.7 Tilapia

At the present, the fishpond with tilapia is mainly a project in the MIDPA demonstration area. The tilapia is feeding on earthworm flour from the farm. The tilapia is in the phase of development and fattening, not reproduction, yet.

Don Francisco has plans for a 200-300 m<sup>2</sup> tilapia pond. His idea is to bring a student from UNA for an internship with the objective of carrying out the tilapia management at the farm.

2.8 Pasture area

The production of pasture is used for feeding the animals at the farm. These are the main species and areas at the farm:

Pasture/grass	Area (ha)
Sugarcane	2
Taiwan	2
Hibiscus	0.7
Trichanthera	1.4
Ramie ( <i>Bohemia nivea</i> L. Gaud)	0.5
Morera	0.7



## 2.9 Agroforestry

The area with forest is around 14 ha. There is no inventory of the species and diversity present at the farm.



**Picture 15.** Sugarcane. M. Cuadra



**Picture 16.** Taiwan grass. M. Cuadra



**Picture 17.** Forest area. M. Cuadra



**Picture 18.** Trichanthera. M. Cuadra

## 2.10 Other activities at the farm

Besides the livestock and crop production, the main activities at the farm are: training (to farmer families and other), Community Popular Veterinarians, organization and hosting of events, foreign interships, missionary teams visits, visits (university students, primary and secondary school students, farmers), ecotourism. Don Francisco dedicates around five days per month for these activities.

### 2.10.1 Transference of viable agroecological technologies

Don Francisco is participating actively in the training of other farmer families in the MIDPA methodology. RAEME participates in education, training and extension projects in other communities or villages.



**Picture 19.** Don Francisco with other farmers (E. Pérez) and training of farmers at the ranch (RAEME)

Don Francisco often receives requests from governmental and non-governmental organizations working in agriculture to help them with training for their extension officers or employees.

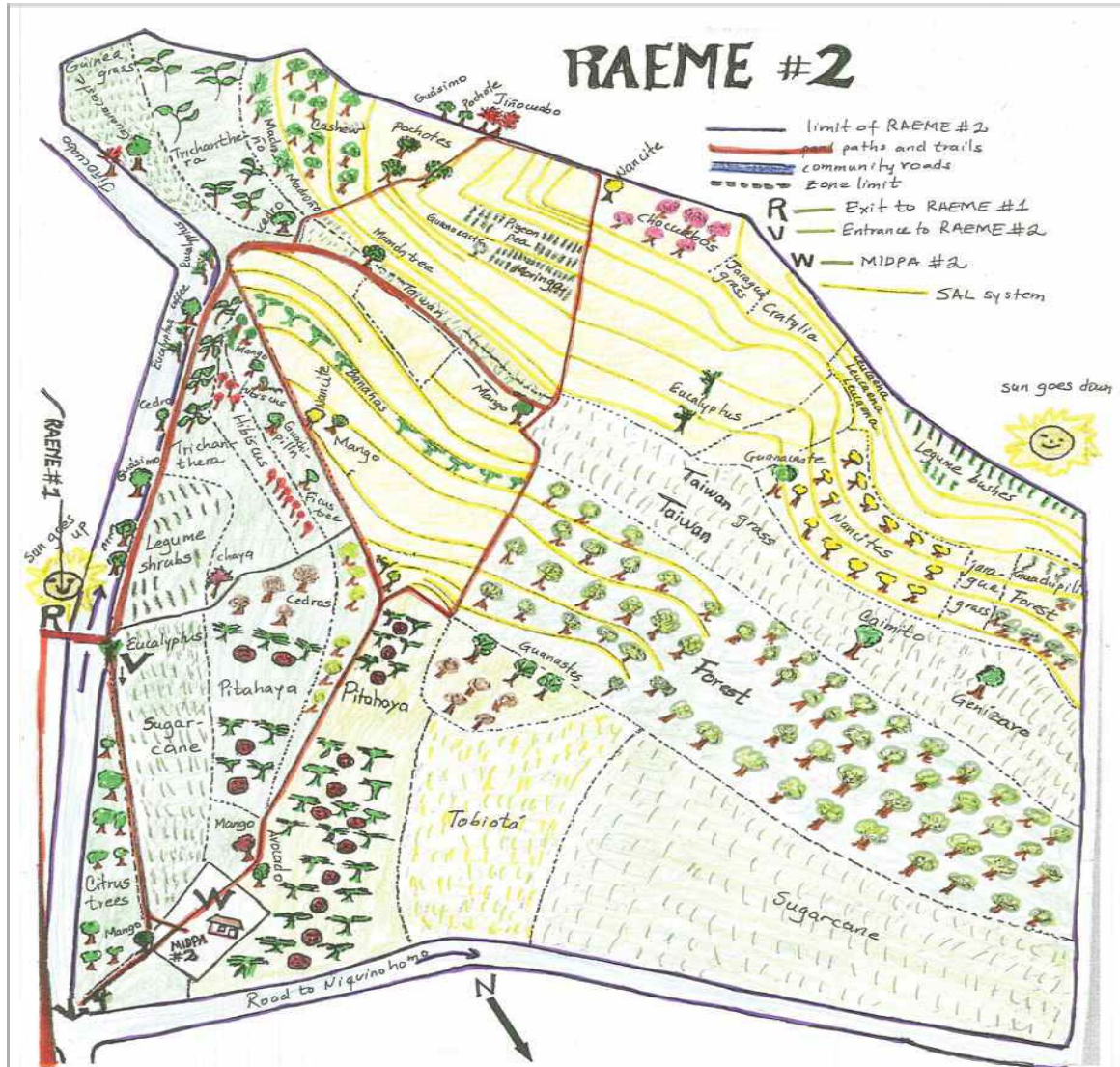
### 2.10.2 Veterinary-Human laboratory

Don Francisco has designed the program called “Veterinarios Populares Comunes” (Community Popular Veterinarians). The veterinarians are women and men from the communities close to the ranch, who have been chosen for their skills, interest and leadership. They don't have any university or college degree.

**Picture 20.** Laboratory facilities.  
RAEME







**Picture 21.** Field map of the farm with areas. Original by RAEME with some redrawings and English names by M.Cuadra

The program started with the training of these popular veterinarians by cooperants from churches in the USA. There have been at least two graduated groups so far, with around 21 new popular veterinarians. Graduates from the training are in charge of communal laboratories in their villages, where they can perform routine tests in animals and humans<sup>11</sup>.



**Picture 22.** Popular veterinarians.  
RAEME

### 2.10.3 Missionary teams

Many missionary teams have arrived to the farm and given their support in different ways: helping in construction, painting, electrical work, field work, training, repairs. These missionary teams have also helped raising money for financing some activities at the farm.

### 2.10.4 Foreign internships and ecotourism (farm tourism)

This consists in longer stays by foreign visitors who stay for work, learn and experience the reality at the farm and the rural communities in Nicaragua.

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<sup>11</sup> Taken from Rancho Ebenezer's narrative report (in English):  
<http://www.ranchoebenezer.org/webmaster/Narrative%20Report.pdf>

### 2.10.5 Organization/hosting of events

The ranch offers the services of hosting of events. These could be religious, technical, for students, NGO's and other. The services consist of lodging, catering and conference venue.

### 2.11 Farm work and workload



**Picture 23.** Jimmy, farm worker at the rabbit pen. E. Pérez.

Of the 22 persons working at the farm, six are women. They work at the kitchen (3), administration and cleaning.

The workload is more or less the same during the whole year. During June-July – start of the rainy season – it is necessary to hire two temporary workers, as there are more activities during this period.

In general, there is more work devoted to the goats compared to other animals or crops. During a normal workday, the highest critical demand for work at the farm is from 6 to 8 am. During this time, the animals are fed and given water. Cages and pens are cleaned. Goats are milked. After 8 am, still the goats demand more work, because of their higher number.

For the pigs, each cell must be cleaned three times per day. This is

because of the biogas production. Each cell could be cleaned up to five times per day if needed.

### 2.11.1 Activities during the day:

6 to 8 am	Collection of animal manure from the cages, cleaning of cages, collection of eggs, feeding and watering the animals, washing water recipients, sweeping and collection of garbage.
8 am	Breakfast
8:30 to 12 m	Maintenance and cutting of fodder, shredding of fodder, feeding the animals
12 to 2 pm	Lunch break
2 to 5 pm	Continue with the activities from the morning

Don Francisco considers he is not the only one doing all the work at the farm. His family and workers (work-mates) are also helping and supporting, and taken into account in the decisions.

## 2.12 Natural and landscape management

The management of the natural resources follows the Christian philosophy of Don Francisco, as well as the ancient pre-columbian beliefs. Don Francisco says that “we are stewards, not owners” of the resources. We should take care of the Pachamama” (Mother Earth in the Incan mythology).

Students from Landscape Design at UNAN (Universidad Nacional Autónoma de Nicaragua) elaborated a proposal of design of the landscape at the farm. The cost of the project is 300,000 USD, including infrastructure.

### 2.12.1 Environmental management

Don Francisco is aware there is a lot to do improve the environmental conditions at the farm. For example, contamination of solid and liquid wastes is a big problem at the farm, and they are trying to find out how to eliminate the contamination.

While organic wastes are recycled at the farm, the other wastes produced at the farm are not recycled. Human manure is not recycled yet. It goes to a septic tank, where it is stored for later collection by a septic truck. On the other hand, all animal manure is recycled at the farm. There is nothing done about the gray waters produced at the farm.

Some pesticides and herbicides are still used at the farm, but in minimal proportions. An organic farm is not supposed to use any agrochemicals, only biological inputs including organic or biological



pesticides and fertilisers, otherwise it is not taken as organic.

Biological control is not used in an intentional way, but it exists, because the Ebenezer farm is well diversified and that is key in a biological control plan.

The medicines for animals need a good prevention plan to be avoided and need a lot more research as well.

However, Don Fran is looking for an agroecological approach to substitute all the agrochemicals, but that means that he needs help because does not know a lot about that. He is changing his mind step by step, so now he is willing to forget about agrochemicals, but is not easy.

## **2.13 Economy and marketing**

### **2.13.1 Farm income**

The expected income for this year is around 105 000 USD. The income comes from:

- General sales (meat, eggs, milk, coffee and live animals as seedstock). Around 40% of income
- Training and technical assistance. Around 30%
- Other services (lodging, food, rent of facilities for events). Around 30%

Donations and partnerships are also an important source of income, but at this time it was difficult to account for.



**Picture 24.** Poster showing the production process of earth worms. M. Cuadra

### 2.13.2 Farm expenses

The total expenses during this year are estimated at approximately 128 000 USD. This budget is for paying salaries, for food, electricity, fuels, animal health, animal feed, water, transportation, repair and maintenance of machinery and equipment. Salaries represent around 50% and food 11% of the total expenses.

### 2.13.3 Main buyers or customers

The commercialization of products is done directly at the farm, and from the activities they do like farm days, offer of lodging and food.

There are a few restaurants that buy products from the ranch (sheep and rabbits). They do this directly at the farm. There is a small specialty shop in Managua that buys rabbit meat from the ranch.

There are also private consumers that come to the ranch to buy

rabbit meat, sheep meat, goat cheese, mint plants, oregano and celery.

Goat milk sells better than goat cheese. There are two companies that buy the goat milk from the farm to make cheese.

They are occasionally invited to attend fairs locally and in Managua, to show, offer and sell their products. One of the best selling products is the rabbits, people buy them as pets for their children. A pet rabbit could cost around 120-600 NIO (5 to 27 USD).

The affluence of buyers and consumers has been growing. However, the farm does not have a good marketing strategy.

## **2.14 Relation with national and international organizations-government**

Don Francisco has good relationship with the Niquinohomo municipality and they often collaborate. The farm has not received any support from the government at the national level.

The farm has received funds from FUNICA<sup>12</sup> for carrying out projects at the farm. They have received financial collaboration from some NGO's, especially from Christian agencies and organizations from the USA and Canada.

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<sup>12</sup> Foundation for the technological, agricultural and forestry development of Nicaragua. Fundación para el desarrollo tecnológico, agropecuario y forestal de Nicaragua.  
<http://funica.org.ni/index/>

### 2.14.1 Agreement with Universidad Nacional Agraria–UNA



**Picture 25.** Documents produced at the farm together with UNA. M. Cuadra

The ranch has an agreement with the National Agricultural University (Universidad Nacional Agraria - UNA). This means that all students from UNA have the chance to carry on field projects, research or internships at the ranch.

### 2.15 Changes in livelihoods

The farm and the project have certainly changed his life and that of the people around him. They started at the bottom, “all these buildings were not here at the beginning”, the farm has changed a lot, says Don Francisco.



**Picture 26.** Improved life conditions for project beneficiaries. E. Pérez

Don Francisco thinks that life conditions have improved for the beneficiaries as well. “They now have something to eat which they

did not have before”, says Don Francisco. As an example, there is a sewing school for the wives of the beneficiaries. It is Don Francisco’s opinion that the standard of living has improved for the beneficiaries.

As important values, Don Francisco considers the sharing their experiences and solidarity with others. For taking people out from poverty, he considers it important to “not give money, but rather to teach alternatives for work and employment”.

## **2.16 Future plans and investment**

Don Francisco has many ideas and plans of what to do in the future to improve the farm.

About the crop production, Don Francisco has plans to grow in Citrus, in other fruit trees like mango and in fine cocoa. He would like to see that the ranch reaches its complete sustainability.

In the short term, he would like to start the processing of meat, milk, fruits and vegetables. Also, use the biogas (biodigestor) for generating electric energy. The farm is lacking a detailed topographic map of the farm. He thinks it would be good to make a strategic plan for the farm for the next years. The farm only has operational plans.

In the middle term, Don Francisco would like to increase the number of goats and increase the market for goats. The farm has stopped

selling to neighboring countries due to lack of capacity.

He would like to start the agroindustry for coffee and cacao (dry processing of coffee). Don Francisco thinks the project would greatly benefit from having a center for artificial insemination of the small animals. He has plans for a tannery, as the goat and rabbit fur is not processed at all, just used as organic matter.



**Picture 27.** Don Francisco explains his plans and perspectives on the farm. M. Cuadra

Don Francisco would like to create a foundation, in order to be able to help more people, or maybe a company or consortium of profitable companies of the ranch.

In the long term, Don Francisco would like to buy 14 ha more of land (cost of one hectare is around 14 000 USD). He would like to strengthen the ranch, to be able to distribute the wealth.

### 2.16.1 Perspectives on the farm

According to Don Francisco, the strengths of the farm lies with its diversity of production activities (small animals with agro-forestry, vegetables and fruits production); its vision for an “agropecological “ production; its human resources and employees (some of them have been employed for over 10 years); the transparent management of financial resources, and the challenge of many things to be done.

As weaknesses Don Francisco points out the lack of financial and human resources to carry on the changes and transformations needed. Also, in the past, Don Francisco’s political affiliation represented a problem.

Don Francisco sees as opportunities for the farm the alliances or agreements with universities to do research. Organizations outside the farm (e.g. government), and governmental policies that are protectionistic; corruption and money laundry are seen as threats to the farm.





## Pictures Rancho Ebenezer





Gate/main entrance  
M.Cuadra



A area. Water reservoir (to the right), and small hut/ranch  
M.Cuadra



B multiple use building  
M Cuadra



B multiple use building, front view,  
dormitories, 2<sup>nd</sup> floor  
M.Cuadra



B building, first floor, kitchen area.  
Doña Martha, cook.  
E. Pérez



B building, main dining area.  
RAEME



C-D-E-F building, two floors. M. Cuadra



E area, new toilets and showers, 2<sup>nd</sup> floor. E.Pérez



E area, big dormitory. E.Pérez



D area, main conference room. 1<sup>st</sup> floor. E.Pérez



F, family living area. E.Pérez



G, MIDPA area, chicken pen. M. Cuadra



G, MIDPA area, chicken pen. M. Cuadra



G, MIDPA area, rabbit pen. M. Cuadra



G, MIDPA area, rabbit pen. M. Cuadra



G, MIDPA area, rabbit pen. M. Cuadra



G, MIDPA area, goat pen. M. Cuadra



G, MIDPA area, vegetables in tires. M. Cuadra





G, MIDPA area, tilapia pond. M. Cuadra



G, MIDPA area, earth-worm beds. M. Cuadra



H, small outdoor dining area. M. Cuadra



I area. Human and animal laboratory. M. Cuadra and E. Pérez



J, new showers. M. Cuadra



K, new latrines. M. Cuadra



I, biogas area. E. Pérez



M, piggery area. M. Cuadra



N, ducks geese and piches area. M. Cuadra and E. Pérez



Ñ, rabbit pen. M. Cuadra



Ñ, main rabbit area. E. Pérez



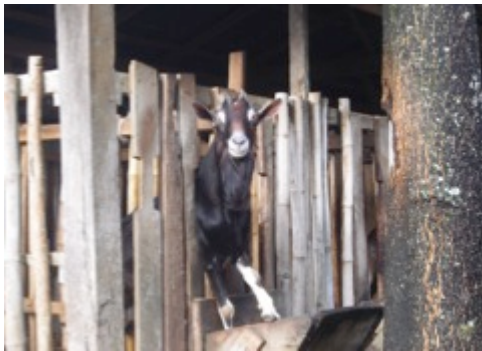
Ñ, main rabbit pen. E. Pérez



N, hens. M. Cuadra







P, male goats pen. M. Cuadra



P. sheep pen. E. Pérez



Q, earth worms beds. E. Pèrez



P area, oxen for transportation. E. Pérez



P area, gathering animal manure. E. Pérez



P, shredder machine. E. Pérez



Trailer used for transportation. E. Pérez



Warehouse, O area. E. Pérez



Light-truck. E. Pérez

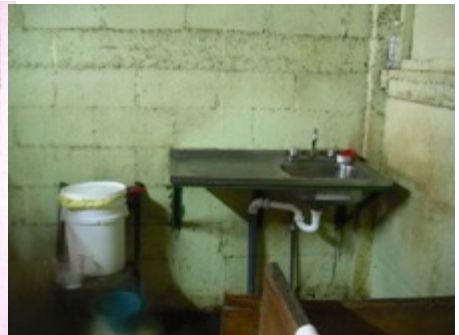




Medicines & first aid animals. E. Pérez



Refrigerator, scale, in kitchen and slaughter area. E. Pérez



Sink in milking area. M. Cuadra



Sugarcane field. M. Cuadra



Electricity generator. RAEME



Water well. RAEME



Farmer with rabbits in her MIDPA area. RAEME



Chicken pen in a family MIDPA area. RAEME



Popular veterinarians. RAEME



Christian missionaries brigades helping with construction work at the ranch. RAEME





Farmer's drawing of their fields.  
RAEME



Training of farmer families in the  
field. RAEME



Training of farmer families at the  
ranch facilities. RAEME



Visit from university students at the  
farm. RAEME