WORK GENERATION, INCOME AND FOOD IMPROVEMENT FOR FARMERS IN RIO GRANDE DO NORTE SUSTAINABLY THROUGH PAIS METHODOLOGY

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ABSTRACT

Exploiting any natural goods sustainably is still something new in Brazil. Many institutions act in the management of projects whose purpose is sustainably generating work, income and food improvement for rural producers, seeking to achieve social welfare and establish bonds between man and nature. The appropriate research methodology will present a more descriptive aspect to these producers, showing material culture elements related to the production usage, social organization and ecologic culture aspects if the patterns of social organization and use of the environment recognized by the population affect in any way the dimension of human life. We'll hopefully understanding how social organization relationships happen, use of environment.

Keywords: *cultural ecology, sustainability, territory, social technology.*

1. CONTEXTUALIZATION

Exploiting any natural goods sustainably is still something new in Brazil. According to GIANNINI (2002), this concept has been more discussed than implemented with satisfactory results. Although it is still incipient, many institutions, which is the case of SEBRAE RN (Support Service to Micro and Small Businesses of Rio Grande do Norte), manages projects whose purpose is to promote the development of small local rural properties, thus promoting generation of work, income and food improvement for families in a sustainable and integrated way, looking forward to the social welfare and establishing a relationship between man and nature, analyzing the process of utilization of material resources by human populations (MORAN, 1990).

Following the research methodology proposed by Steward, presented by Moran (1990), an essentially descriptive aspect of the producers is shown, having material culture elements, closely related to the use of production, for instance, tools used in agriculture, property dimensions, social organizational aspects related to the use of specific resources and aspects of the cultural ecology methodology, investigation if the patterns of social organization and use of environment recognized by the population affect in any way the dimension of human life.

Throughout the period of execution of the project, rural producers produced goods destined to personal commercialization and consumption, as known as "archeological products".

Among the actions of the project are the searching for commercial partnerships to the commercialization of the products, establishing of goals, following up of the premises that may affect the continuity of the project and the measuring of the results, trying to identify if the goals established were achieved and serve as a standard to evaluating the success or failure of the project, since we are developing actions along with public resources, which should be clear and transparent in its actions.

The problematic in this work is to understand how is the relationship of a social organization, the use of the environment and even further, who are these small rural producers in Rio Grande do Norte. Field research surrounds a sample of 200 rural producers, residing the cities of Acari, Currais Novos, Frutuoso Gomes, Messias Targino, Parelhas, Santa Cruz, São João do Sabugi, São Paulo do Potengi, São Tomé e Severiano Melo.

2. OBJECTIVE

2.1. General Objective

Present the evolution of the resulting benefits of the project for a rural producer in Rio Grande do Norte, furthermore, making possible a comparison between its phases of evolution, T_0 (2011), T_1 (2012) and T_F (2013), also diagnosing the evolution and showing its perspectives during the evolution cycle.

2.2. Specific Objectives

- Identify the rural producer's profile;
- Characterizing the form of social organization;
- Characterizing means of production;
- Present the aspects of commercialization and access to the market;
- Evaluate the satisfaction of rural production through PAIS technology.

3. Cultural Ecology and territoriality

Julian Stewart as cited by Diegues (2001) defines cultural ecology as being the study of the adaptive processes by which societies are affected by basic adjustments so men can use the environment. He goes even further by saying that such cultural aspects as subsiding economic activities, technology and social organization are the "*culture core*", generating a strong relationship with the environment, and that the activities of production and commercialization are examples of adaptive strategies.

Miller (2009) exposes that the process of adaptation is extremely important and associates itself intimately to the concept of survival, in other words, they possess the ability to react to their surroundings in a favorable way to their own operability or survival. To Sahlins (1968) adapting is to act, as best as possible, before the present circumstances, which can be unfavorable. And goes on saying that the climatic conditions and temperature changes are beneficial, as long as they are not extreme.

> "Cultural ecology is characterized by a concern with adaptation, in two levels: first, regarding the means by which the systems adapt to its general environment and, second – as a consequence of this systemic adaptation – regarding how institutions of a determined culture adapts or adjusts themselves to the others" Miller (2009, p. 69) citing Kaplan & Manner (1975, p. 125).

According to Morán (1990) citing Ellen (1982) human communities depend on social mediation as much as, or even more than they depend on the physical environment. It is necessary to make the environment relationships of men only comprehensible if the cultural role of the institutions that mediate between men and environment is included. Miller (2009) emphasizes the need of relying on the physical and social, them being two aspects of the environment. In the relationship between traditional populations and nature the territory appears as a fundamental element.

Diegues (2001) citing Godelier (1984) defines the concept of territory as "*a portion of nature and space that a specific society claims and grants to all, or part of its members, stable rights of access, control or use of the totality or part of the available natural resources that one is willing or is able to utilize*".

In addition to supplying man's nature as a species, the territory also gives the means of subsistence, of work and production. It also has an important role in the formation of social groups, making it possible to define the term territoriality as:

> "The collective effort of a social group to identify with, occupy, use, and establish control over a specific portion of their biophysical environment that serves as their homeland territory" (LITTLE, 2002).

Also, according to Little (2002), territory is a historical product of social and political processes. There is a great variety of expressions with sociocultural particularities, environmental knowledge, ideologies and identities. To the population in the rural areas, territory has more defined limits, with broad usable areas, without assigned limits.

Thomas (1998) points out that the concern with the maintenance and preservation of a territory was already present in the ancient Roman times, where the exploration of natural resources in the pre-Christian world was more efficient than the following medieval Christian and in modern civilizations, the cult of nature didn't avoid industrial pollution in Japan.

It's important to understand that man must be concerned with the preservation of the environment he lives in, looking forward to avoiding ecological problems such as erosion, deforestation and extinction of species, prioritizing a sustainable development.

4. SUSTAINABLE DEVELOPMENT

For a long time, the meaning of the word development was given according to the level of industrialization a society had (AZANHA, 2002). As a synonym of industrialization and technological advance it meant and defined the process of transforming the natural environment with the purpose of generating material wealth (products) while imposing them as a "*necessity*" to the society. On the other hand, Ribeiro (1991) says that the word development has been used as one of the most including existing in the common sense and in specialized literature, and of great importance in political, social and economic relationship organizations. However, even though all of them speak of development, none is able to attach them to concrete terms.

Development covers the notion of individual rights, of citizenship, value of change, tradition, social justice, welfare, the destiny of humanity, accumulation of economic power, among others that lead to a divergent reading - having the reader in front of a blank box or an empty notion, which is the same as in the definition of modernity.

The result of this range of meanings lead to the "*notion of development*" being attached to the process of transforming and even "*fulfilling promises made*". The many changes in the forms of contemporary reproduction of political, social and economic life, has lead us to a reform of development notions marked by theories created by a world system after world war II.

Intensified in the 19th century, since the political, social, economic and philosophical development in the 17th century - Owen's, Fourier's and Saint-Simon's formulations. The various appropriated ideas of development, as well as the attempts to reform it, create historical meanings – industrial development, capitalism, socialism, etc. where collective actors establish individual perspectives as if they were the most correct.

There is tension to the interpretative and political conflicts as to the questions on development that can be related to the double standards of the age of Enlightenment – a moment new economic, political and social bonds in modern times were made as well as the associated ideology – progress, industrialism, secularism, nationalization.

The period after World War II is fundamental to the discussion about development for various reasons. Besides the redefinition of power of many nation-states internally to the international division of labor, new mechanisms are instituted to operate it in a worldwide level – such as the World Bank, IBRD (International Bank for Reconstruction and Development), IMF (International Monetary Fund), GATT (General Agreement on Trade and Tariffs) and UN (United Nations).

Truman, at the highest power of the most powerful nation-state after the war, establishes development as a great civilizing solution to humankind. He also established indicators to measure development, such as HDI (Human Development Index), as being universal. Latin America isn't immune to the new tendencies.

SANTILLI (2005) says that a significant point about sustainable development was the disclosure, in 1987, of the United Nations report entitled "*Our Common Future*", also known as "*Brundtland's report*". He used and defended the concept of "*sustainable development*", taken as "that who satisfies the needs of current generations without comprehending the ability of future generations to satisfy their own".

The report denounces the quick deforestation, the risk of depleting natural resources of the planet and highlights three fundamental components of the new model of sustainable development that are: Environmental protection, economic growth and social equality. In other words, development should not only be environmentally sustainable, but also, socially sustainable and economically conceivable.

> "Sustainable development is defined as that who meets the needs of the present without compromising the ability of future generations of meeting their own, it is a process of change in which the exploration of resources, orientation of investments, course of technological development and institutional change meet current and future needs; it is developing while still making possible future options; It is correcting, retaking growth altering its quality in

> development; it is a change in the content of growth, in order to make it less intense in raw material use and more equal in its impact" (RIBEIRO Citing SANTOS, 1991).

Under the scope of business, sustainable development has four basic implications (RIBEIRO, 1991):

a) Changing the economy of opportunity in a way that simplifies the businesses access to the market and technology capability – access to credit, market and technology;
b) Changing the economy of conservation so that it encourages the inclusion of environment values in commercial practices;
c) Becoming an economy that promotes long-term investments and real profits, instead of maximizing short-term profits;
d) Becoming an economy of savings culture, instead of a culture based on immediate consumption.

Ribeiro (1991) citing Márcio Fortes (1991) emphasizes that under the business scope, the features that should focus on the sustainable development are parsimonious use of non-renewable resources, of sustainable use of renewable resources, improvement of environmental quality, biodiversity conservation, search of a social economic balance (with reduction of poverty, better income distribution among individuals and regions and acceleration of equalizing industrialization of countries under development).

5. PAIS Project – Integrated and Sustainable Agroecological Production (*Produção Agroecológica Integrada e Sustentável*)

Looking forward to adopting policies and standards of quality, efficiency[1] and effectiveness in looking for results for small rural producers, SEBRAE RN has developed the PAIS project – "*Produção Agroecológica Integrada e Sustentável*" in the regions of Seridó, Oeste, Agreste and Trairi, being implemented in the year of 2010 and finished in 2013, with small familiar rural producers as their main target.

The objective of the project is to promote generation of work, income and family diet improvement through the insertion of PAIS social technology.

According to Miller (2009), technological innovation may theoretically increase efficiency, therefore production can be doubled, reducing working hours by half.

Among the many cycles of the project, measuring the results has a fundamental role and it is in this stage that changes can be identified, especially if the intermediate and final results are being achieved.

Final results are the ones that must be produced on the target group, or with it, with the execution the project in a determined time interval. While intermediate results are expected results of execution of project actions that contribute to the final result's achievement.

There are four main results to the project, separated between final and intermediate, as the following:

a) Final Results

- Answer 200 families through PAIS social technology until December, 2013;
- Achieve perception of increase of 30% in income until December, 2013.

b) Intermediate Results

- 30% growth in physical volume of production (kilograms) until December, 2013;
- Achieve 1 (one) channel of commercialization - creation of archeological fairs - until December, 2013.

To the not achieved results the following premises are presented: favorable climatic conditions for production development, no incidence of illnesses and unwieldy plagues and inclusion of producers and partners.

The strategic focus of the project regards the production diversification of agro ecological products originating in the small property, quality life improvement of all involved through a healthier eating and creation and growth in number of locations of products commercialization.

[1] Miller (2009) highlights that the increasing efficiency is seen as an adaptation and increasing efficiency causes society's life expectancy to be longer.

PAIS technology will teach producers to build circle-shaped vegetable gardens, where a wide variety of cultures can be produced. In the center of the garden, a fowl run is built. Plants are watered with a water tank placed on the highest point, where gravity will help water all the garden using the dripping irrigation technique. Fertilizer comes from natural productions. In places where electrical power doesn't exist, SEBRAE RN supports the installation of solar panels for the harnessing of solar power.

Picture 1 – Garden model using PAIS technology

6. RESEARCH METHODOLOGY

The research methodology is used as proposed by Steward and presented by Moran (1990) that surrounds three fundamental aspects:

a) Descriptive analysis, looking to identify material culture elements related to the use of resources by the population, such as housing, machines and equipment, cultivated food, property size, etc.;
b) Present aspects of social organization;
c) Verify if the aspects of cultural ecology's methodology investigate if patterns of social organization and use of environment interfere with other cultural aspects, where factors of democharty, settlement, parenting, land's use and possession, among others were observed.

A methodology known as Painel (Panel) was adopted in field research along with the target group. Painel methodology uses the same target group in different occasions, with the purpose of evaluating results over time.

- *Target Group*: Familiar small rural producers of the Seridó, Oeste, Agreste and Trairi region;
- *Number of researched*: 200 rural producers, comprising of the following cities: Acari (15), Currais Novos (25), Frutuoso Gomes (20), Messias Targino (20), Parelhas (25), Santa Cruz (20), São João do Sabugi (25), São Paulo do Potengi (20), São Tomé (10), Severiano Melo (20);
- *Admeasurement Stage*: Initial phase, T_0 (January to December, 2011);
  Intermediate phase, T_1 (January to December, 2013);
  Final phase, T_F (January to December, 2013).
- *Data Collect*: The data was collected through interviews alongside constant businessmen on the panel, using a survey. Field work was executed by SEABRAE's research team.

The tool used to collect data was a semi structured survey, divided in three blocks of variables: Block 1 - Identification of the producer; Block 2 - Social data; Block 3 -Production; Block 4 - Commercialization; Evaluation of the producer in relation to PAIS technology. SPSS (Version 16.0) software was used for the processing of the research's data and the generated statistics were shown in tables' sheets and charts.

7. RESULTS

Rural producers researched in this work are intrinsically related to the traditional cultures and societies cited by Diegues (2001), which main features are:

a) Dependency to nature's symbiosis, natural cycles and renewable resources from which a human' life style is built;
b) Profound knowledge of nature and its cycles, which reflects in the preparation of use strategies and handling of natural resources;
c) Notion of territory or space in which a social group grows economically and socially;

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d) inhabiting and occupation of this territory for many generations, even if a few individual members might have moved to urban centers and back to their ancestor's land;
e) Importance of subsistence activities, even if the production of goods might be more or less developed, what implies a relationship with the market;
f) reduced capital build-up;
g) Importance given to familiar, domestic or communal unities and to the parenting relationships for the exercise of economic, social and cultural activities.
h) Importance of symbols, myths and rituals associated with hunting, fishing and extractive activities;
i) Technology in use is relatively simple, of limited impact on the environment. There is a reduced technical and social work division, hand crafting being the most practiced, which producer (and his family) holds the work process until the finished product;
j) Weak political power, in general residing among great urban centers;
k) Identification of one by himself or others in regards to belonging to the same or a different culture from the others.

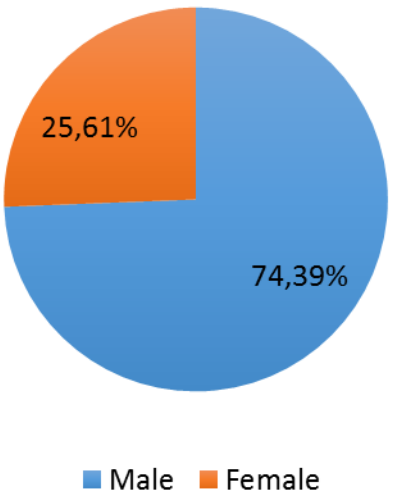
The research results are as follows:

7.1. Rural producer's profile - Democratic aspects

- **Gender**

Rural producers are characterized by both genders, being males the predominant with a percentage of 74.39% and 25.61% of females.

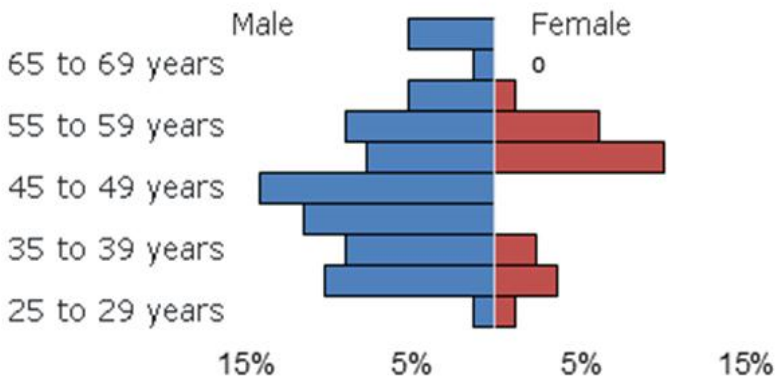
Chart 1 - Distribution by gender



- **Age**

In the age group by sex concentration distribution, it is verified a greater amount of males between the ages of 45 to 49 and of females between the ages of 50 to 54 years old.

Chart 2 - Producer's age group pyramid

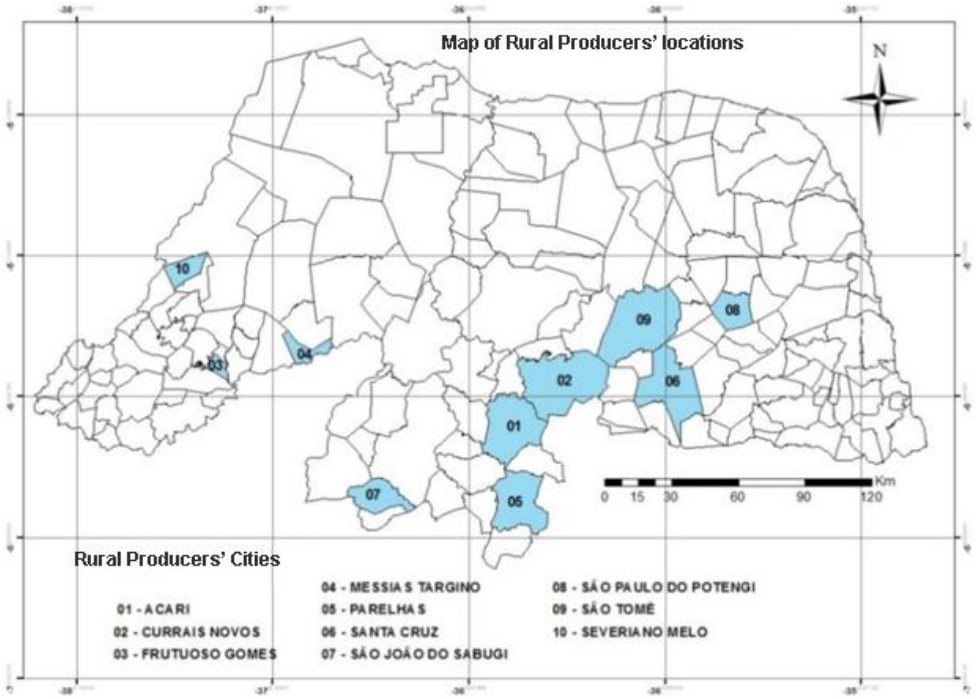


- **Origin**

Table 1 shows the concentration of producers in a city that, for Mauss (2003), is one of the conditions that constitute the form of human grouping. In these regions social groups grow economically and socially, which is one traditional society's features (DIEGUES, 2001).

Table 1 - Origin of producers by city through PAIS technology

City	Producers	Percentage
Acari	15	7,5%
São Tomé	10	5,0%
Severiano Melo	20	10,0%
São Paulo doPotengi	20	10,0%
Santa Cruz	20	10,0%
Frutuoso Gomes	20	10,0%
MessiasTargino	20	10,0%
Parelhas	25	12,5%
São João doSabugí	25	12,5%
Currais Novos	25	12,5%
Total	**200**	**100,00%**



Picture 2 - Cities of rural producers

7.2. Social Organization

- **Activity development**

Social organization belongs to a kinship that can be identified by the number of people that reside and work with a rural producer, autonomous or familiar labor prevailing.

- **Familiar income**

Table 2 shows the average income of families with and without benefits of PAIS program. An elevation in income was observed throughout the phases with PAIS income, overcoming one of the project's results that is increasing income in 30% until the end of the project.

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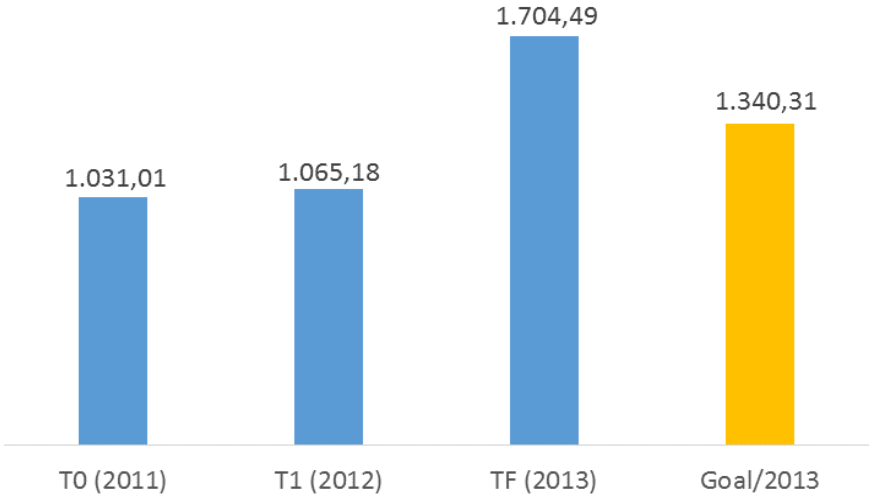
Table 2 - Average familiar monthly income (R$)

Familiar monthly income (R$) without PAIS				
Phase	**Minimum**	**Average**	**Medium**	**Maximum**
T_0(2011)	R$ 42,00	R$ 600,00	R$ 630,06	R$ 1.714,00
T_1(2012)	R$ 134,00	R$ 678,00	R$ 876,40	R$ 3.500,00
T_F(2013)	R$ 70,00	R$ 790,00	R$ 989,78	R$ 4.000,00
Familiar monthly income (R$) with PAIS				
Phase	**Minimum**	**Average**	**Medium**	**Maximum**
T_0 (2011)	R$ 100,00	R$ 912,00	R$ 1.031,01	R$ 3.428,00
T_1 (2012)	R$ 134,00	R$ 840,00	R$ 1.065,18	R$ 6.988,50
T_F (2013)	**R$ 70,00**	**R$ 1.431,30**	**R$ 1.704,49**	**R$ 6.759,50**

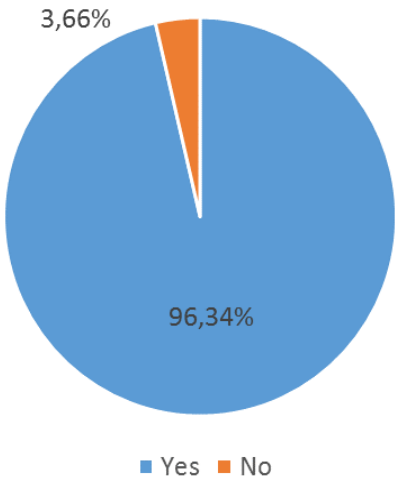
Chart 3 – Avarage income (R$) with PAIS technology



- **Participation in social organizations**

Social organization is an important factor for the survival of any individual, the interests of a group should overpower the individual's, providing advantages, such as safety and resource sharing (MILLER, 2009, p. 108). In this case, participation of producers in social organizations is intense, and it was verified that 96.34% of them participate in a social organization and only 3.66% do not.

Chart 4 –Participation of producers in social organizations



According to the research, the percentage of producers who develop any other activity besides agriculture is 34.15%. PAIS project level of dedication is shown through a percentage of 65.85%.

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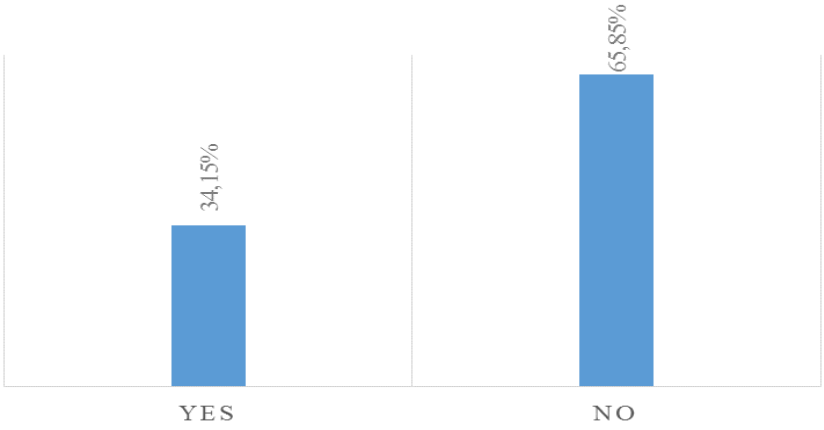
Chart 5 – Percentage of producers who develop any other activity

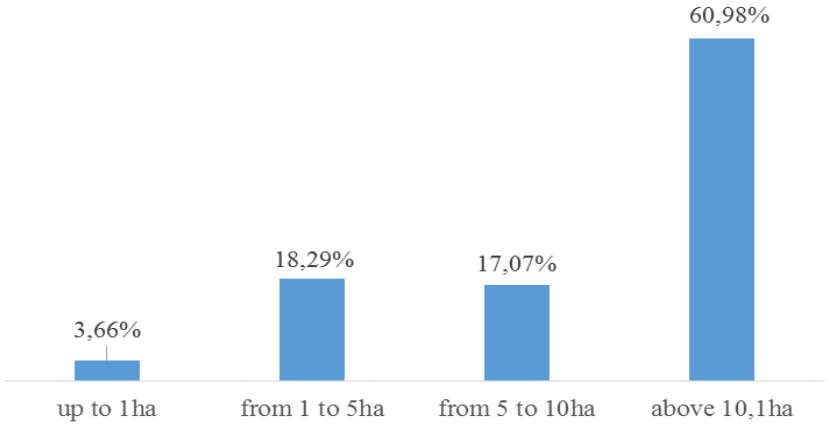


7.3. Rural Property

According to Mauss (2003), in the process of taking notes on an specific population, it's necessary to know how that population is distributed over the territory they occupy, what groups they are composed of, what their number is, size and disposition.

In regards to the area of the occupied property for agricultural production, 60.98% of producers have been identified as having a production are of over 10.1 hectares. The percentages of the remaining areas are shown in the chart 6 that follows.

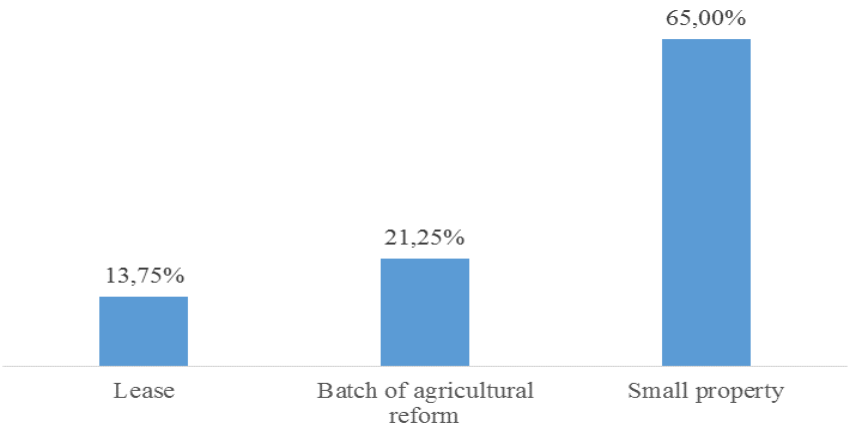
Chart 6 – Property area in hectares



- **Real Estate Possession**

It has been identified that 65.00% of forms of real estate's occupation refers to the purchase of small properties, 21.25% have a batch of agricultural reform and 13.75% on leasing.

Chart 7 – Forms of real estate's possession



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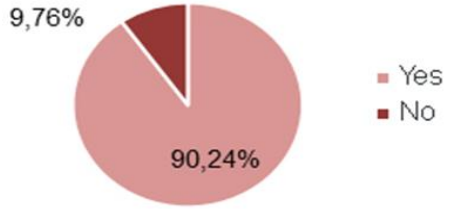
It has been noted through analysis that 90.24% of the producers live in the property, only 9.76% do not.

Chart 8 – Producers residing in the property



7.4. Production and Income

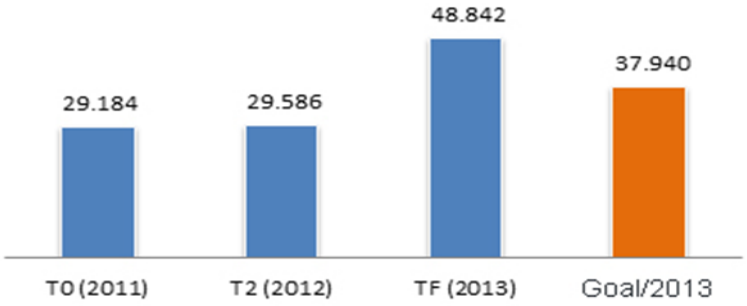
- **Production**

36 (thirty-six) items were noted as to the monthly income of producers acquired through commercialization of products. The total volume produced by each item was verified, along with their respective average unit price and total average monthly revenue of the product. Data is shown further in the following Table 5.

It has been noted that the monthly volume, produced and sold, in relation to every other product, by every producer, sums a monthly amount of R$ 57,000.00.

The following chart refers to the result of increased gross production volume, which has a goal of increasing in 30% of physical volume of production until the end of July 2014, and in reality it has increased in 67.36%, surpassing the previously planned goal.

Chart 9 – Gross production volume



Thomas (1988) said that the vegetation has always been source of food and fuel. The natural resources are the source of food and work, for the target group, being responsible for part of the rural producer's income. This kind of agriculture is of small commodity production[2], for sales or self-consumption.

Zucchinis, acerolas (West Indian cherries), lettuce, sweet potatoes, beets, cashews, onions, chives, among others are produced in farms.

Picture 2 – Producers aided by the PAIS technology in the city of Acari, Beira do Rio's rural community.

Picture 3 – A round garden (agro ecological backyard) and a dripping watering system, which saves water. It is an environmentally friendly, socially right, culturally accepted and economically viable system.

[2] Traditional cultures coming from small commodity productions are articulated to fit capitalists' production methods (DIEGUES, 2001). This small or great dependency on the capitalists' production method changes the means by which small producers treat the environment and its resources.

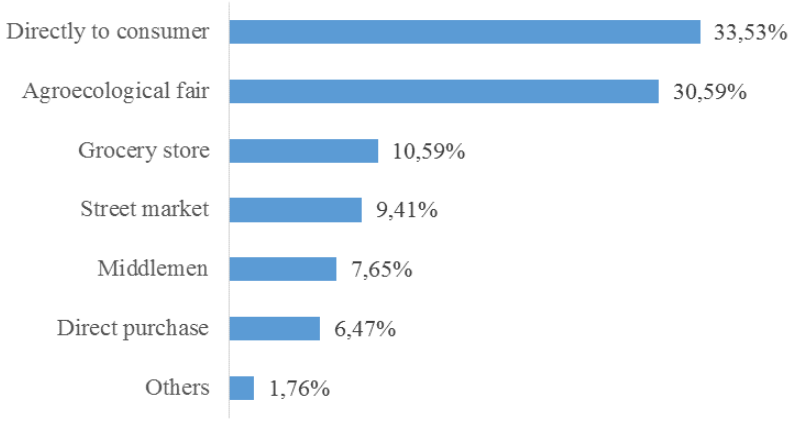
One of the purposes of the project is to improve life quality and provide sustainability to communities. Furthermore, it encourages organic agriculture practices by means of a non-toxic production processes. Picture 1 show a group of producers in the rural community of Beira do Rio, located in the city of Acari and picture 2 shows a garden using the dripping watering system, which saves water.

7.5. Access to the Market

- **Comercialization**

In regards to the method of product commercialization, it was observed that the majority of producers sold their products directly to the consumer, representing a percentage of 33.53%, and in agro ecological fairs, 30.59%. There is also the free commercialization, representing 9.41% on the charts, as well as middlemen (7.65%) and selling to city halls for government funded school food supplies (6.47%). Other methods of commercialization (1.76%) have been listed: Bars, Restaurants and part of it destined to self-consumption.

Chart 10 – Method of product commercialization



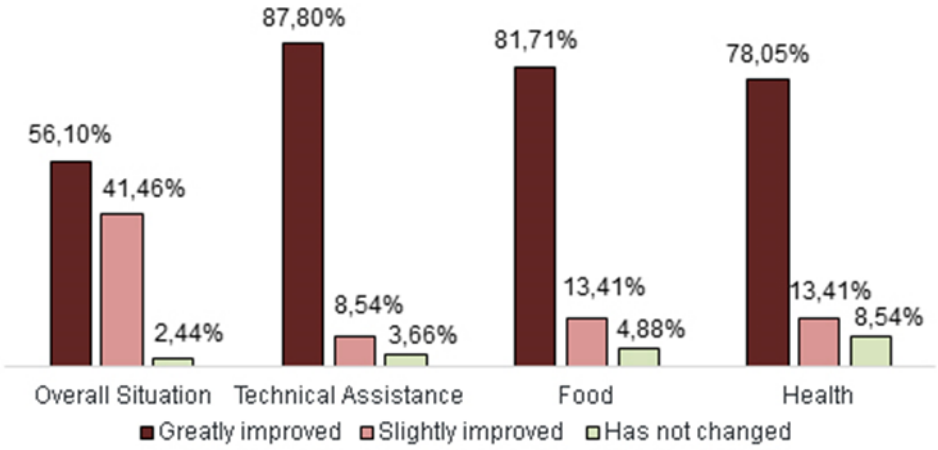
- **Channels of commercialization**

Acquire 01 (one) channel of commercialization – creation of agro ecological fairs – until the end of the project would be the original goal agreed upon among rural producers. However, there are, in the finished project, ten channels of commercialization in the cities of Acari, Currais Novos, Frutuoso Gomes, Messias Targino, Parelhas, Santa Cruz, São João do Sabugi, São Paulo do Potengi, São Tomé and Severiano Melo.

7.6. Evaluating rural producers in relation to PAIS

Rural producers have been asked in regards to what was their current situation after the technical assistance, about family diet, health and overall situation after applying the PAIS program. Chart 11 shows the following results:

Chart 11 – Producers status after PAIS



The major points as to the producers' situation are:

- 87.80% of producers stated that, regarding *technical assistance*, was greatly improved;
- As to *family diet*, 81.71% said that it was greatly improved;

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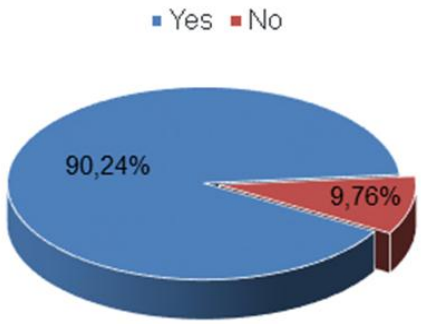
- In regards to *health*, 78.05% of producers said it was greatly improved. On the other hand, 13.41% affirmed it to have slightly improved, and only 8.54% affirmed it has not changed;
- As to the *overall situation*, 56.10% affirmed that their situation after PAIS improved greatly, 41.46% affirmed it to have improved only slightly and only 2.44% said it to have remained the same.

In regards to the current PAIS situation, 90.24% of producers affirm that the program is operational. Only 9.76% affirmed otherwise, because of drought.

Chart 12 – Is PAIS operational?



Rural producers were questioned if there was an acquisition of goods after implementing the program. According to research, 54.88% affirmed having acquired no goods. However, 45.12% affirmed having acquired goods after PAIS. Chart 13 specifies the aforementioned goods:

Chart 13 – Have you acquired any goods after PAIS?

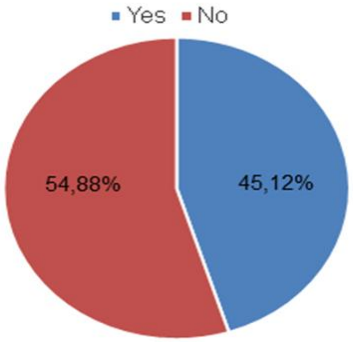
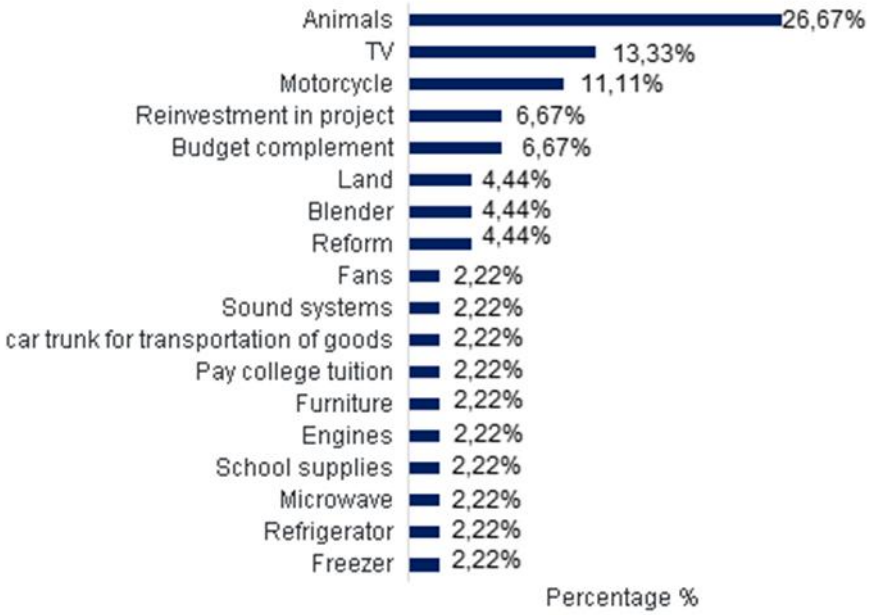
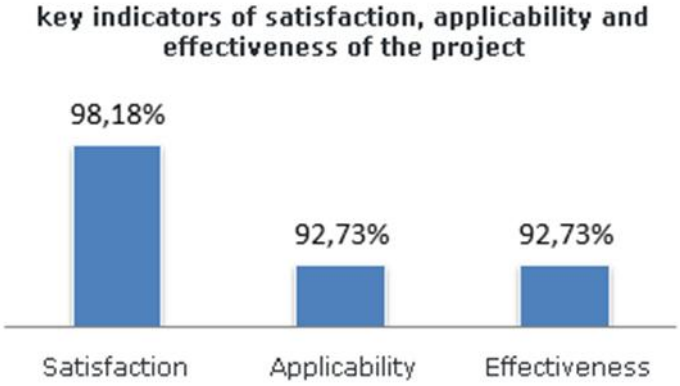


Chart 14 – Relationship between goods and PAIS



- **Satisfaction**

This item refers to the producers' vision in relation to the satisfaction, applicability and effectiveness of products/services offered by SEBRAE RN and used by rural producers, where:
Satisfaction measures a client's experience results when consuming/utilizing a product or service;
Applicability is the measure of evaluation of how much users have put into practice the knowledge acquired in the services of which they have participated, where they seek to practice what they have learned.
Effectiveness is measured by evaluating how much of the expected results in services the interviewed have participated have been achieved.



CONCLUDING

SEBRAE RN seeks to promote development in small rural properties in RIO GRANDE DO NORTE's territory, also promoting generation of work, income and food for families integrated and sustainably, as an alternative method of achieving social welfare through relationships between men and nature. Economic activities of subsistence, use of technology and social organization result in a strong bond with the environment. Activities of production and commercialization are examples of adaptive strategies.

According to the established goals in the beginning of the project it was noted that they were surpassed. 200 families have been aided as previously agreed. As to the result referring to the gross volume of production, whose goal was having a 30% increase in physical volume of production until July of 2014, in reality increased in 67.36% surpassing the goal set.

Obtaining a commercialization channel was the initial intention – creation of agro ecological fairs – and until the end of the project ten channels of commercialization were created. Also having been verified an increase in income throughout the years of 65% with PAIS's income, exceeding one of the project's result, which was increasing income in 30%.

Rural producers researched are predominantly male, representing 74.39%. In the age group by sex distribution, most of the male rural producers are in an age group between 45 to 49 years old, and females between 50 and 54 years old. Social organization is of parentage, familiar or autonomous work prevailing, with access to many programs, such as *bolsa família* (family aid). Participation of producers in social organizations is intense, insomuch that 96.34% participate in some kind of social organization.

In regards to the method of occupation of real estates, it was verified that 65% refers to the purchase of small properties, 21.25% have a batch of agricultural reform and 13.75% are on leasing. 90.24% of them reside in their own properties.

Natural resources are source of food and work, being responsible for the income of rural producers. The type of agriculture is of small commodity production destined to selling and self-consumption. There are produced thirty-six items for commercialization such as zucchinis, acerolas (West Indian cherries), lettuce, sweet potatoes, beets, cashews, onions, chives, among others.

As to the method of product commercialization, it was observed that the majority of producers sell their products directly to the consumers (33.53%), and in agro ecological fairs (30.59%).

87.80% of producers stated that, regarding *technical assistance*, was greatly improved. As to *family diet*, 81.71% said that it was greatly improved. In regards to *health*, 78.05% of producers said it was greatly improved. On the other hand, 13.41% affirmed it to have slightly improved, and only 8.54% affirmed it has not

changed. As to the *overall situation*, 56.10% affirmed that their situation after PAIS improved greatly, 41.46% affirmed it to have improved only slightly and only 2.44% said it to have remained the same. In regards to the current PAIS situation, 90.24% of producers affirm that the program is operational. Only 9.76% affirmed otherwise, because of drought.

45.12% affirmed having acquired goods after PAIS, such as animals, televisions, motorcycles, lands, appliances, among others. As to the level of satisfaction, 98.18% of rural producers are satisfied with the project, 92.73% apply the acquired knowledge and stated that the expected results were achieved.

Ultimately, the use of PAIS technology favors sustainable development, which, under the scope of business, generates opportunities of access to the market and technological capabilities, encourages inclusion of environment standards in commercial practices such as commercialization of agro ecological products, promoting long-term investments and real revenues.

The strategic focus of the project was met, regarding production diversification of agro ecological products originated from small properties, improving quality of life of people involved through healthy food, creating and increasing the number of places to commercialize products.

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