



**Tradition, agroecological knowledge and productive backyards in rural communities of the semi-arid region of Rio Grande do Norte, Brazil**

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#### ABSTRACT

Productive backyards are one of the oldest forms of land management and agricultural use and consist of the combination of various plant species, sometimes associated with the rearing of domestic animals. In this study, different uses of domestic backyards were identified in rural communities in the municipality of Mossoró and Baraúnas, located in the semi-arid region of Rio Grande do Norte state (RN). Face-to-face interviews were conducted using a semi-structured questionnaire containing open and closed questions, with 88 families who cultivate in backyards of four rural communities, Santa Rita de Cássia, Guarujá and Bela Vista, in Mossoró (RN), and Recreio, in the municipality of Baraúnas (RN). It was found that the backyards of the communities are used for the cultivation of fruit species, medicinal vegetables and also for rearing animals. In addition, the backyard space is intended for leisure of the families. The production of backyards meets the consumption of the families. Specifically, in the community of Bela Vista, there were limitations in backyard cultivation due to water scarcity in the years 2012 to 2017, a period that includes the conduction of this study. The results of the study show that cultivation in backyards is a social technology that guarantees sovereignty over the food and nutritional security of families in the Brazilian semi-arid region, in line with the need for sustainable coexistence.

**Key words:** Coexistence in the semi-arid region. Food sovereignty. Productive backyards. Food and nutrition security.

#### 1. INTRODUCTION<sup>1</sup>

Healthy eating and nutrition are essential for an active and healthy life, enabling the full affirmation of the potential for human growth and development with quality of life and citizenship (BRASIL, 2012).

In recent decades, the world population has experienced major transformations that have resulted in changes in their lifestyle and health pattern, especially with regard to healthy customs and eating habits. Industrialization, associated with the increase in technical-scientific discoveries, has caused food to be produced and processed according to modern techniques that, in most cases, alter its nutritional value (FRANÇA et al., 2014).

The changes in the food production model have largely contributed to reducing poverty, hunger and malnutrition, as food became more accessible to the population. On the other hand, the decrease in hunger and malnutrition was accompanied by the growth of obesity in all layers of the population, pointing to a scenario of problems related to poor eating and nutrition (BRASIL, 2012).

In this context, the increase in chronic diseases is directly related to the process of food industrialization, which contributed to the emergence of highly processed food products such as refined grains, cheap variety of calories from sugar and fat produced by conventional agriculture, in addition to the reduction in the diversity of foods in human diet (POLLAN, 2008).

A survey conducted by the Ministry of Health indicated that the adult population of Brazilian capitals has obesity problems with an average weight increase of 51.0%, and men (54.5%) are more affected than women (48.1%). For both genders, the frequency of this

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condition tended to increase with age until 54 years. Among women, the frequency of overweight decreased evenly with the increase in the education level (BRASIL, 2012).

As a result of the demands generated by the new lifestyle of modern society, food consumption began to be imposed according to people’s needs to adapt their lives to the conditions they have, financial resources and available places where they can eat. In this context, the food alternatives presented by the industry and the market outline new modalities in eating habits, which contributes to changes in food consumption (GARCIA, 2003).

These factors draw attention to the need for the production of pesticide-free foods and to the consumption of fresh food, such as organic foods from agroecological production, which can considerably improve people’s food quality.

To encourage the consumption of healthy foods, it is necessary to develop programs in different spheres of government and society through activities such as lectures, courses and workshops with topics related to food education for the local reality in schools, daycare centers, hospitals, community centers.

In addition, it is necessary to create a policy of incentive to cultivation in productive backyards based on agroecological principles to ensure the production of healthy foods and ensure sovereignty over the food and nutritional security of families, also contributing to keep alive the knowledge and tradition of growing food in these domestic spaces, a work predominantly carried out by women around the world.

Nascimento *et al.* (2003) mention that the Portuguese word for backyard, *quintal*, originates from the Latin *quintanale* and means a small *quinta* (property), land with garden, domestic garden or orchard, which can be behind the house. It is also understood as a space located near or around the house, with easy and comfortable access for residents to use. The backyard can be considered an supplemental system of the production of resources that is under the control and management of household members.

The practice of family and agroecological agriculture carried out in productive backyards is essential for effectuating a food model that guarantees the right of peoples to nutritious and accessible food, thus providing the rights of these cultural groups to decide what to plant for their own food support.

In 2015, the proposal for implementing sustainable agri-food systems has been defended by the 2030 Agenda of the United Nations (UN), which instituted “*Zero Hunger and Sustainable Agriculture*”, in goal 2 of the 17 Sustainable Development Goals. The implementation of agri-food systems and the protection of landrace seeds are highlighted as sustainable development strategies in a local development policy to eradicate severe food insecurity.

Initiatives of food sovereignty and security either independent or encouraged by the non-governmental organizations (NGO), as well as networks formed by these entities, universities, federal institutes and research institutions are important, also to generate demands for the formulation of public policies. Through initiatives developed with the communities, it is possible to broaden successful experiences and replicate them.

In this line, the Food Acquisition Program (*Programa de Aquisição de Alimentos - PAA*), the landraces seeds (or traditional seeds), the productive backyards, and the agroecological markets and the identification of traditional foods are examples of food sovereignty strategies.

These experiences contribute to fostering the autonomy of family farmers, enabling the maintenance of traditional varieties adapted to those regions (LIMA *et al.*, 2019).

Therefore, the strategy of productive backyards provides family work, as it involves the knowing-doings of women, the main responsible for backyard cultivation, and promotes a better-quality diet for the whole family.

Based on this reflection, the objective was to identify the different uses of domestic backyards in rural communities in the municipalities of Mossoró and Baraúna, in the semi-arid region of Rio Grande do Norte (RN) state, Brazil.

## 2. AGROECOLOGICAL KNOWLEDGE AND PRODUCTIVE BACKYARDS

Agroecology is a science that guides a set of agricultural practices and seeks sustainable ways to improve agricultural systems, imitating natural processes, thus creating beneficial biological interactions and synergies between the components of agroecosystems, hence avoiding breaking with the ecological balance that gives stability to natural ecosystems (SISAN, 2012).

For Altieri (2012), backyards are examples of agroforestry systems present mainly in the tropics. Cultivating in domestic backyards is an example of agroecological practice that employs efficient land use and can even be carried out with reuse water. This cultivation incorporates several agricultural crops with different growing habits and results in a structure similar to that of tropical forests, arranged in strata that can contain up to more than 100 plant species per yard, providing products such as human food, animal feed, woody, medicinal, ornamental materials, as well as environmental services.

Domestic backyards are agroecosystems that hold a variety of plant and animal species and are close to the homes of family farmers. They provide income and support to farmers in addition to promoting environmental conservation and contributing to the food security of rural families (MIRANDA, 2011).

Domestic backyards are defined by Amorozo (2002) as areas located around homes and that occupy an important position in the agroforestry systems because they comprise plants that are used for different purposes, for instance as food, condiments, as well as medicinal and ornamental applications. In this context, domestic backyards play an unquestionable role in the health of farmers, as they are closely associated with the diversified production of fruits, vegetables and other foods that complement the diet of families.

From an environmental point of view, domestic backyards perform essential functions for the maintenance and conservation of landrace seeds and native species. In addition to regulating the balance of the climate, they serve as shelter for species of the region, contributing to the conservation of biodiversity and natural resources (VIEIRA, 2009).

The backyards contribute to the strengthening of family farming and agroecological practices, generating additional income for families that sell the products grown in these spaces and, on the other hand, promote food security for small producers, since most of the production is used for food. They contribute to the conservation of biodiversity *in situ* and to keep alive the tradition through the transmission of knowledge on cultivation practices that are passed on through the orality from older generations to the younger ones. Finally, but no less important,

backyards are spaces of female autonomy, in which women choose what to plant and where to plant, playing an important and historic role of growing the food that will make up the meals of their families.

It is important to highlight that backyards are spaces of multiple socio-environmental relations. The house is surrounded by trees (palm, guava, mango, cashew, banana, among others), with landscape species (flowers and foliage grown in pots or cans and other reusable utensils), medicinal plants that grow in the shade of trees and share space with domestic animals, such as chickens that scratch and turn the soil in search of insects. There are also leaves and fruits that fall from trees and contribute to nutrient cycling, as well as vegetables grown in horizontal spaces and on vertical or suspended platforms. In these places, women and children perform domestic activities, aimed at the maintenance of the house and family, such as washing dishes or clothes, in a landscape observed in most domestic backyards in the rural areas of the Brazilian semi-arid region. This space impregnated with experiences, memories and tradition is also of paramount importance for the conservation of biodiversity.

Therefore, it is possible to state that the backyard is an area of production of plant and animal species, located near the house, in which multiple forest and agricultural species are cultivated, also involving the rearing of small domestic animals, such as chickens, ducks, pigs, helmeted guineafowls, sheep, cows, horses, donkeys, cats and dogs. These animals are reared for the purpose of contributing to family work, for food consumption or as pets.

## 2. METHODOLOGY

This research study is part of the project called *Práticas educativas e formação de multiplicadores, com vista ao fortalecimento da segurança alimentar e nutricional (Educational practices and training of multipliers, aimed at strengthening food and nutrition security)*, CNPq/MDS-SESAN Call No. 027/2012, National Council for Scientific and Technological Development (CNPq) and Ministry of Social Development and Combating Hunger (MDS), through the National Secretariat for Food and Nutrition Security (SESAN), process: 407559/2012-4.

The study was carried out in four rural communities in the state of Rio Grande do Norte, Brazil, namely: Santa Rita de Cássia, Guarujá and Bela Vista located in the municipality of Mossoró and the community of Recreio, in the municipality of Baraúna.

The settlement of Santa Rita de Cássia covers an area of 320 hectares where 40 families reside. The research was conducted with 30 families from the community who were willing to participate in this study. The community of Guarujá has a geographical area of 466 hectares, divided among 24 families. Of these, 16 agreed to participate in the research. In the community of Bela vista, 22 families were settled, but currently only 10 families reside, and nine of them agreed to participate in the survey of productive backyards. Finally, in Baraúnas, the community of Recreio has a total area of 1,080 hectares, divided into 15 hectares for each family. Currently, 50 families reside on the site, of which 33 participated in the research. Thus, the study was conducted with a total of 88 families.

The field activities began in 2014 and extended until 2017 with the identification of the varieties of species used, as well as the implementation of domestic production areas.

Empirical visits were made to the reference communities for the activities of mobilization, presentation of the project and request for the signing of the Research Agreement Forms (*Termos de Adesão à Pesquisa* - TAP) with the community representations. Participants who answered the questionnaires and the Image Use Authorization Form (*Termo de Autorização de Uso de Imagens* - TAUI) were also requested to sign the Free and Informed Consent Form (*Termo de Consentimento Livre e Esclarecido* - TCLE).

Initially, the models of spaces of the backyards used by the families for cultivating fruit species, vegetables, medicinal plants and rearing domestic animals, among other purposes, were identified.

The data collection instruments consisted of questionnaires, *in loco* observation and photographic recording. The questionnaires were semi-structured, containing open and closed questions, with the objective of identifying the profile of the community that cultivates the backyards, the forms of use and occupation of the backyards, and the cultivated species. *In loco* observations were recorded in a field diary, for subsequent analysis, and the photographic records were made in order to illustrate the ways of using backyards and the variety of species.

Finally, the data were analyzed in a qualitative way, aiming at a better detailing and interpretation of the reality studied with the hope of being able to contribute to the implementation, increment and strengthening of domestic backyards, in order to minimize the consumption of industrialized foods by the families who participated in the study and rescue the habits of cultivation for healthy local consumption.

### 3. RESULTS AND DISCUSSION

#### 3.1 Backyards in the community of Santa Rita de Cássia, Mossoró (RN)

The members of the thirty families who participated in the study were between 28 and 60 years of age: 13% were between 28 and 38 years old; 37% were between 39 and 49 years old; 35% were between 50 and 60 years old and 15% were over 60 years old. Regarding the gender of those responsible for cultivation, 87% were women and 13% were men. When asked how they learned to cultivate in backyards, 65% said that they learned with their mothers; 30% said that they learned from their grandparents; and 5% said they learned by watching other people.

In the backyards, the fruit species identified were guava, ambarella, lemon, cashew, papaya, banana, orange, soursop, sugar-apple, mango, red mombin, coconut, pitaya, noni and acerola (figure 1). In relation to vegetables, the species with highest frequency were lettuce, coriander, chives, bell peppers, tomatoes, pumpkins and kale (figure 2).

The species of medicinal plants found were mint, mallow, lemon grass, lemon balm, *Aloe vera*, pomegranate and epazote (figure 3). Less frequently, the families use backyards for rearing animals, especially sheep, cattle, goats and pigs (figure 4).



Figure 1. Fruit species in productive backyards, Santa Rita de Cássia, Mossoró (RN), 2015.



Source: Project Collection, 2015.

Figure 3. Cultivation of mallow and chives, Santa Rita de Cássia, Mossoró (RN), 2015.



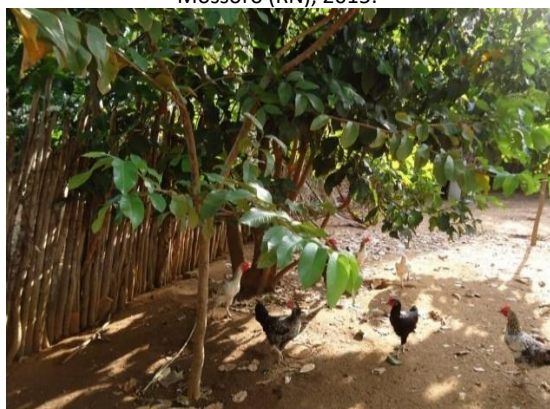
Source: Project Collection, 2015.

Figure 2. Vegetables in productive backyards, Santa Rita de Cássia, Mossoró (RN), 2015.



Source: Project Collection, 2015.

Figure 4. Rearing animals, Santa Rita de Cássia, Mossoró (RN), 2015.



Source: Project Collection, 2015.

According to the interviewees, the production carried out in their backyards is for their own consumption and, when there are surpluses, they give to neighbors and relatives, and there are also exchanges of food between families. Rarely, the families market the surplus of production, as they consider that the production is small, meeting only family needs. According to the participants, they consume everything they produce in their backyards and thus reduce the expenses with the purchase of food, since they no longer depend on supermarkets.

What I plant, we eat here, there is nothing left we can sell; sometimes, when there is a lot of coriander, chives, guava or other fruits, we either donate, as people here are always in need, or we take to the rest of the family that lives in Mossoró. Everything we plant helps because we do not need to buy it. However, the recent years have been difficult because you cannot plant with little water; I lost a lot of what I planted. (verbal information<sup>2</sup>).

Food production in backyards strengthens local eating habits and can contribute to minimizing the consumption of industrialized foods by rural populations. Studies conducted by Reinaldo *et al.* (2015) point to changes in the eating pattern in the community of family farmers of the northeastern semi-arid region. According to the authors, in these communities, the

<sup>2</sup> Rosa, 48 years old, Santa Rita de Cássia, 2016.

population incorporates industrialized foods into the diet, considerably suppressing the consumption of regional foods traditionally consumed in northeastern Brazil.

Nardoto *et al.* (2020) studied the diet of riverside communities in the Brazilian Amazon, which was previously composed mainly of locally produced foods, such as fish with cassava flour, for example. The diet in these localities began to be composed of industrialized foods, such as canned food and frozen chicken, produced in the South and Southeast regions of the country. In the same study, the researchers observed similar findings in coastal and country rural communities in the state of Rio Grande do Norte, which had a diet similar to that of urban centers such as Mossoró and Natal, which reinforces the importance of strengthening the production of traditional, locally produced foods.

### 3.3 Backyards in the community of Guarujá, Mossoró (RN)

The backyards of the Guarujá community are used for various types of cultivation, especially: fruit species, vegetables and medicinal plants. 38% of the research participants were between 27 and 37 years old; 33% were between 38 and 48 years old; 21% were between 49 and 59 years old; and 9% were over 60 years old.

Regarding the gender of those who practice backyard cultivation, 85% are women and 15% are men. About this information, it is worth mentioning that the accumulated knowledge about the implementation, maintenance and production of productive backyards are the result of years of practices and exchanges of experiences, especially among the women who take care of these spaces. This flow of knowledge, as well as genetic material, which is exchanged and transmitted from one backyard to another, from one family to another, such as the exchange of seeds, goes beyond the limits of the community, municipality and region, through the socialization of knowledge, exchanges of information, experimentation and dialogue between the women who cultivate.

Among the interviewees, 72% mentioned that they learned the backyard cultivation techniques with their parents; 20%, with grandparents and 8%, with other people. These data reinforce the importance of preserving the knowledge associated with agroecological practices that are transmitted through the orality from older generations to younger ones.

The fruit species identified in the community studied were coconut, lemon, mango, acerola, passion fruit, noni, papaya, soursop, sugarcane, banana, cashew, sugar-apple, pitaya and red mombin (figure 5). As in Santa Rita de Cássia, the backyards in Guarujá are also used for the cultivation of vegetables, with the greatest frequency for coriander, chives, pepper, cassava, bell pepper, cucumber, tomato, carrots, among others (figure 6). In addition to fruit and vegetables species, medicinal plants and the rearing of small domestic animals were also identified (figures 7 and 8).

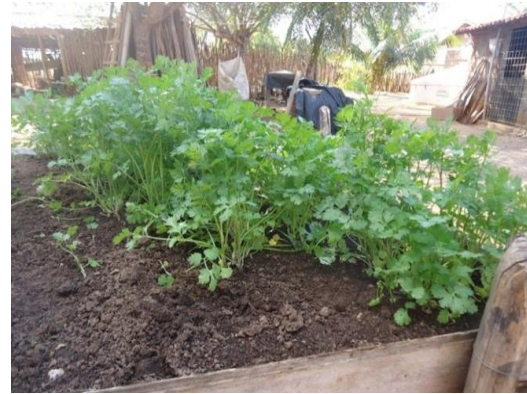
Figure 5. Fruit species in productive backyards, Guarujá, Mossoró (RN), 2015.

Figure 6. Coriander in productive backyards, Guarujá, Mossoró (RN), 2015.





Source: Project Collection, 2015.



Source: Project Collection, 2015.

Figure 7. Planting of cassava in productive backyards, Guarujá, Mossoró (RN), 2015.



Source: Project Collection, 2015.

Figure 8. Animals in productive backyards, Guarujá, Mossoró (RN), 2015.



Source: Project Collection, 2015.

In Guarujá, it was possible to observe that all the production of the backyards studied until this research was for family consumption. When there were surplus, the participants exchanged or donated it to neighbors and friends of the community. The marketing of surplus products is almost non-existent. However, this information points to the need for strengthening the cultivation practice, aiming at the commercialization of the surplus as a source of complementary income for the families.

Silva (2011) and Barros *et al.* (2019) mention that the surplus of the diversified products from the backyards exceeds the limits of family property and can be sold, exchanged for other products or even given to relatives and neighbors, and this is a common practice. In many of the rural settlements of Rio Grande do Norte, this still “invisible” production contributes to the diversification of the family diet, enabling savings by avoiding the external purchase of products that are found in the backyard itself.

Therefore, it can be noted that the backyards contribute to strengthening agroecological and family farming practices with the potential to generate additional income for farmers through the sales of products grown in these spaces. On the other hand, backyards contribute to promoting sovereignty over the food security of small producers, since most

species are used for food. Finally, but no less important, backyards are spaces of female autonomy in which women plant and harvest food, playing an important and historic role of growing the food that will make up the meals of their families.

#### 4.3 Backyards in the community of Bela Vista, Mossoró-RN

The community does not have a school or a basic health unit. The school-age population goes to study in the community of Barreira Vermelha, at the Camélia Almeida Municipal School, which has the 1<sup>st</sup> to the 4<sup>th</sup> year of elementary school. Students attending from 5<sup>th</sup> to 9<sup>th</sup> grade go to Ricardo Vieira do Couto Municipal School, located in the community of Jucuru. Students attending high school need to go to the urban area of Mossoró.

In the community of Bela Vista, residents report that there are difficulties in cultivating their backyards due to the quality and scarcity of water resources. As the water supply is carried out with the help of the neighboring community, the residents reported that they carried out their daily activities in such a way to minimize water consumption as much as possible.

According to the residents, the lack of water is frequent and directly affects backyard cultivation and animal rearing. For production in their backyards, they use “gray water”, mainly from dish washing, which serves to water the fruit species. According to the research participants, the water availability issue was greatly aggravated with the dry season of early 2012.

Here, we always plant, but get sad when we plant and lose. Last year, almost everything we planted was lost due to the drought, it did not rain. I still keep planting here at home, because it helps a lot; what we plant and harvest we do not buy. Here at home, there are fruits, which I no longer buy; I plant coriander, tomato, bell pepper. As I also have the chickens, which are raised loose, I cultivate the platform with coriander and plant my vegetables, all of this helps. Because of the lack of water to plant here, a lot of people left, I remain here with my family. (verbal information<sup>3</sup>).

The survey of backyards studied in Bela Vista revealed that, in relation to the age group of the participants, 43% were between 37 and 47 years old; 50% were between 48 and 58 years old and 7% were above 59 years old. Women are the majority in backyard cultivation (93%); only 7% are men. Most residents, 70%, grow only fruit species, since growing vegetables requires higher water consumption, whereas 30% grow vegetables and medicinal plants. However, residents complained that the lack of water makes it difficult to grow and produce, and that sometimes they lose what they plant because they cannot maintain regular watering.

Regarding production, it was possible to identify, in the backyards of Bela Vista, coconut (figure 9), acerola, lemon, red mombin, cashew, papaya (figure 10), pepper, pumpkin, banana (figure 11) and mango, chives, coriander, bell pepper and tomato, mallow, lemon grass, epazote, among others (figure 12).

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<sup>3</sup> Amélia, 52 years old, Bela Vista, 2014.



Figure 9. Coconuts, Bela Vista, Mossoró (RN), 2014.



Source: Project Collection, 2014.

Figure 10. Papaya, Bela Vista, Mossoró (RN), 2015.



Source: Project Collection, 2015.

Figure 11. Banana, Bela Vista, Mossoró (RN), 2014.



Source: Project Collection, 2014.

Figure 12. Coriander grown in “jirau”, Bela Vista, Mossoró (RN), 2014.



Source: Project Collection, 2014.

It was also found that, in relation to animal rearing, the activity is carried out by the majority (76%) of the residents of Bela Vista, who use the backyards to raise birds (chicken, helmeted guineafowl, duck), pigs, cattle, horse and donkeys. 24% reported that they do not raise animals because they do not have adequate transport to bring water from the neighboring community to their residence for this activity.

From the study conducted, it was noticed that the activities carried out in the backyards of Bela Vista are aimed at enriching the quality of the families’ diet. According to the participants, fruits and vegetables are consumed by family members and the animals and derivatives are also for consumption (meat, eggs, milk), or to help them in daily subsistence activities, such as horse and donkey, which sometimes are used to transport water to the community. Thus, the cultivation of food complements the family’s diet.

It can be inferred that backyard cultivation reinforces the food and territorial sovereignty of the communities and stimulates the diversity of crops, differentiating the diet of these cultural groups, strengthening food and nutritional security. We understand that the food and nutritional security situation depends on the guarantee of other rights for its consolidation and we understand that productive backyards can be a way to build a space of dialogue, socialization and rescue of the autonomy and self-esteem of families. It is necessary to

emphasize the need for actions, projects, programs and public policies that enable and strengthen the existence of this food production strategy, aiming at the promotion of emancipation, citizen and political education and the guarantee of the Human Right to adequate and healthy food. It is worth pointing out the understanding of food security as a

[...] the guarantee, to all, of conditions of access to basic foods of quality, in sufficient quantity, permanently and without compromising access to other basic needs, based on eating practices that enable the healthy reproduction of the human organism, thus contributing to a dignified existence (SISAN, 2012).

The proposal was launched in 1986 at the 1<sup>st</sup> National Conference on Food and Nutrition and was consolidated at the 1<sup>st</sup> National Conference on Food Security in 1994 (SISAN, 2012).

It is important to realize that this understanding of food security articulates two well-defined dimensions: food and nutritional. The first refers to the processes of availability (production, marketing and access to food) and the second concerns more directly the choice, preparation and consumption of food and its relationship with health and biological use of food. In this context, the tradition of the backyard cultivation practice contributes to consolidating these two dimensions, since it is directly related to the cultivation of foods that are consumed by the families that grow them.

#### **4.4 Productive backyards in the community of Recreio, Baraúnas (RN)**

In the community of Recreio, the participants of the research are between 30 and 40 years old (35%); from 41 to 50 years old (20%); from 51 to 61 years old (22%) and over 62 years old (23%).

Regarding gender, 78% are women and 22% are men, so Recreio was the studied community with the highest percentage of men cultivating backyards. However, backyard care is predominantly taken by women in all communities that comprised the study. In this line, Vieira (2006) recognizes that, although all family members participate in the management of backyards at some stage or with some specific tasks, it is undeniably that the women are those who assume the central role from decision-making to the execution of tasks. And in fact, we found that women are the main responsible for maintaining these spaces and exert a strong influence on the decision about the selection of cultivated species; in these spaces, they are the protagonists.

In Recreio, the predominance of subsistence agriculture is noticeable, which is also due to the diversity of food grown in the community. In the backyards of the families, a wide variety of fruit species was identified, such as: red mombin, mango, acerola, noni, avocado, sugarcane, olive, cashew, tamarind, orange, coconut, sugar-apple, passion fruit, tangerine, among others.

According to Amorozo (2002), there are numerous motivations for this type of cultivation in areas of subsistence agriculture; food security is one of the most important motivations for cultivating fruit, medicinal and vegetable species in backyards.

In addition to fruit species in the community backyards, it was possible to find species of vegetables, such as chives, coriander, tomato, pepper, pumpkin, bell pepper, cauliflower, eggplant. Like the other communities, Recreio uses the spaces of the domestic backyards for



rearing animals such as sheep, goats and pigs. Animal rearing is intended for family consumption and marketing (figures 15, 16, 17 and 18).

Figure 15. Rearing Goats, Recreio, Baraúnas (RN), 2015.



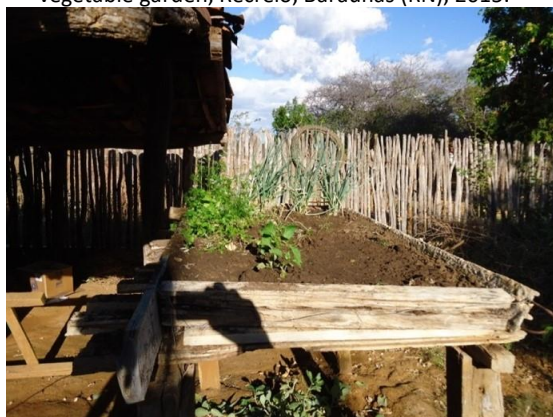
Source: Project Collection, 2015.

Figure 16. Rearing poultry, Recreio, Baraúnas (RN), 2015.



Source: Project Collection, 2015.

Figure 17. Coriander and chives in suspended vegetable garden, Recreio, Baraúnas (RN), 2015.



Source: Project Collection, 2015.

Figure 18. Fruit species in productive backyards, Recreio, Baraúnas (RN), 2015.



Source: Project Collection, 2015.

In this line, it is possible to state that the use of productive backyards as a strategy to guarantee sovereignty, as well as food and nutritional security, has the potential to help families enrich their diet and/or family income conditions. A study conducted by Nascimento, Silva and Salgado (2003) in Piracicaba, state of São Paulo (SP), concluded that families who migrated from the Northeast region to São Paulo maintained the tradition of cultivating their backyards. The study also points to the importance of backyards as spaces that provide families with a variety of fruits and vegetables that contribute to increasing food quality.

It is worth pointing out that another relevant aspect of this production system is the incorporation of agroecological practices that seek sustainable models for the generation of safe food, enriching the diet of producing families and, consequently, contributing to the guarantee of food and nutritional security, in addition to promoting independence in relation to food



production and consumption, the preservation of food and production culture, maintaining the agrobiodiversity in these spaces.

#### 4. FINAL CONSIDERATIONS

In the rural communities studied, the population resists and keeps alive the tradition of growing fruit species, vegetables and medicinal plants (“home remedies”) in their backyards, even maintaining the recipes of their use for various purposes.

Most residents of the community of Bela Vista have restrictions on cultivating their backyards due to water scarcity. In addition, the high salinity of water in this community also hampers the cultivation of the species.

Only the community of Recreio had a high number of varieties of cultivation, especially of fruit species, indicating the feasibility of expanding production in the backyards with the possibility of commercialization of surplus production. This information points to the importance of formulating public policies aimed at encouraging the implementation and increase of productive backyards as a complementary source of income for families that conduct this activity.

All communities cultivate fruit, vegetable and medicinal species associated with the rearing of domestic animals. It is also important to encourage the permanent development of education technologies for training multipliers in the promotion of adequate and healthy eating and the development of social technologies in food and nutrition education aimed at promoting adequate and healthy eating, carried out in interaction with the community, that represent a potential for social transformation, such as productive backyards.

Therefore, in order to keep alive, the traditional knowledge and backyard cultivation in rural communities of the semi-arid region of Rio Grande do Norte, Brazil, it is necessary to create initiatives that can contribute to strengthening the practice of this activity and diversify the uses and varieties of cultivated species, transforming the backyard into a social technology capable of ensuring the food supply for the families and contributing to the consumption of healthy foods. This would break with the current standardized trend of consumption of industrialized foods.

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