PRODUCTION AND TRADE OF SUGAR CANE SPIRIT AGED WITH CATIA IN PARANÁ COAST - BRAZIL: SOCIOECONOMIC IMPLICATIONS

Adilson Anacleto, Edenise Cristina Souza de Freitas, Rodrigo de Paula Leandro

A: Associate professor, Department of higher education in Administration, Universidade Estadual do Paraná, Paranaguá, Paraná, Brazil. B: Volunteer researcher, Department of higher education in Administration, Universidade Estadual do Paraná, Paranaguá, Paraná, Brazil.

Abstract

Paraná Coast, since the empire time is a traditional region that produces sugar cane spirit. Among the forms of the beverage that has shown the most growth along with the consumers is spirit aged with leaves of the cataia. The cataia (Pimenta pseudocaryophyllus) is a shrubby plant from the family Myrtaceae, it is an endemic plant from South and Southeast regions, being used as aromatic in the aging of sugar cane spirit. Despite the commercial growth of flavored spirit with cataia in the regional context, few studies have been found on the subject. In this context, a research was conducted to promote a diagnosis and the socioeconomic implications of production and trade of sugar cane spirit aged with cataia. An exploratory descriptive research was carried out in the cities from Paraná Coast where there was cataia production, and face-to-face interviews were conducted in July and August 2016, with nine producers. The study showed that the production and trade of sugar cane spirit aged with cataia Paraná Coast occur with the use of family labor in the informal trading system. The main problems in production and trade are the lack of regulation of the activity, lack of public power incentive, and the low levels of perceived entrepreneurship. Apparently the community does not show itself to be able to develop the process of organization, so the dialogue of knowledge between the public power, community and the scientific community can be the main way in the search for the solutions for the observed socioeconomic implications.

Key words: Alembic. Flavored beverages, cachaça

INTRODUCTION

The sugar cane spirit, also known as cachaça, is a genuinely Brazilian product that, according to Meira (2013) and Schoeninger et al. (2014), had its origin even in the period of Brazilian colonization, at the time when the Brazilian economy was based on sugar production in order to supply the European market.
The first distilleries of *cachaça* appeared in Brazil between the sixteenth and seventeenth centuries, being initially classified as an illegal drink (Meira, 2013), due to the low cost of manufacture that was more accessible to the poorer classes (Espir et al., 2011; Anacleto et al., 2013; Tonini and Pacheco, 2014).

However, in the last decades, the sugar cane spirit has left this level, meeting high-quality parameters regarding its production, thus competing side by side with other distilled beverages that are much appreciated in the worldwide (Espir et al., 2011; Schoeninger et al., 2014).

Nowadays, the production of sugar cane spirit is an activity developed in all Brazilian regions, benefited from the great productive adaptation of sugar cane, incorporating in its culture the tradition of production and diverse flavors (Anacleto et al., 2016). Brazil is the largest producer of sugar cane in the world (Oliveira et al., 2012, Anacleto et al., 2013, Anacleto et al., 2016).

The Brazilian production of *cachaça* is on average 1.7 billion liters per year and currently generates an annual billing of US$ 600 million, employing more than 500 thousand people directly and providing a collection of approximately R$ 76.5 million in taxes to (Oliveira et al., 2012; Schoeninger et al., 2014; Anacleto et al., 2016).

The export of this Brazilian beverage is incipient, reaching little more than 1% of the volume produced, which suggests the market opportunity that has not yet been satisfactorily explored, it is interesting to say that, in the last decade the annual movement in the world trade of spirit turned next to US$ 10.9 billion, while domestic production was only US$ 8.7 million (Schoeninger et al., 2014; Anacleto et al., 2016).

The scenario reveals favorable panorama for this beverage for the growth of consumption in the world, but in a general context the producers of artisanal sugar cane spirit have difficulties in promote their products, as well as accessing more specialized markets in this drink in the international scenario, so that they can conquer more popularity, increasing the consumption of the beverage and the profitability of the sector (Espir et al., 2011, Anacleto et al., 2013, Tonini and Pacheco, 2014)

Brazil produces on a larger scale the industrial beverage (n = 70%) that uses fermentation acceleration methods through chemical additives and therefore, of lower cost (Verdi, 2006; Oliveira et al., 2012), and also produces artisanal *cachaça* (n = 30%), which has a production method different from the industrial one, from the sugar cane cultivation to the final process with the natural fermentation, distilled in small stills and restocked for at least three months or more to the aging process (Espir et al., 2011, Meira, 2013, Tonini and Pacheco, 2014).

The artisanal drink tends to have a distinct market, despite the smaller production, they present varieties of flavors, colors and that has several variations as to its final flavor, and traditionally presents higher quality than the industrial one, therefore it obtains greater value in the market (Anacleto et al., 2016).

Paraná State is responsible for only 4% of the volume produced in Brazil (Schoeninger et al., 2014), but the beverage from Paraná has gained prominence in the last decades competing in equal conditions in tests and gourmet competitions around Brazil. In 2016, a brand produced in the city of Morretes won the title of best sugar cane spirit at the *Cúpula da Aguardente* 2016, competing with the most traditional brands in Brazil, and a second brand expanded the international trade of its artisanal beverages,
directing 60% of its sales to the United States and Canada (Torrente, 2016; Abdala, 2016).

The evolution in quality observed occurs especially in artisanal beverages and it is the result of investments and empirical research conducted by producers who dominate the production process based on the knowledge of the family heritage since the Brazilian colonial period (Abdala, 2016; Anacleto et al., 2016).

The main factor in the recognition of the beverage from Paraná, besides the production process, also comes from aging processes, which confers the regional beverage peculiar characteristics unique and appreciated by tasters (Anacleto et al., 2016; Torrente, 2016).

In this context, a form of aging this beverage has attracted the attention of merchants, researchers and in particular the tasters of spirit, it is sugar cane spirit aged with the use of *cataia* (*Pimenta pseudocaryophyllus*) leaves, being the resultant flavor of this aging process so pleasant to consumption, that consumers call it "caiçara whiskey".

The *Pimenta pseudocaryophyllus*, belongs to the family of *Myrtaceae* and is known by the common name of *cataia*, an endemic plant from South and Southeast regions, it is an aromatic plant that varies from 4 to 10 m high, with very characteristic rounded crown (Paula et al.). In some regions can occur as a shrub, in Paraná Coast is more easily found at Barra do Ararapira, in the National Park of Superaquí located in Guaraqueçaba.

The use of this species is related to medicinal issues, where parts of the plant are employed in the preparation of teas and infusions that act as regulators of digestion, relieves the effects of menstruation, flu, acts as calming agents (Nakaoka-Sakita et al., 1994), and the traditional population also attribute to it aphrodisiac properties and antimicrobial potential (Paula et al., 2012).

The leaves of the bush used as a basis for the spirit aging are a source of income for traditional communities that have discovered the forms of its use, especially application in beverages (D’angelis and Negrelle, 2014).

The sugar cane spirit aged with *cataia* is an old practice in traditional communities, and initially was not very expressive, over the years the drink became more popular especially for tourism (Morgante et al., 2007).

The plant used in the aging of the beverage is obtained by predatory extractivism, a fact that can compromise the population dynamics and the maintenance of the natural stock of the species, besides making it difficult to create a product with a quality standard, due to the fact that the extracted leaves has its chemical composition influenced by climatic and geographic variations, but in these impoverished communities the use of *cataia* is based on sustainable extractivism and apparently cit an represent an important source of development (Morgante et al., 2007; Paula et al., 2012; D’angelis and Negrelle, 2014).

Paraná Coast is a traditional region with tourism interest and these regions more distant as it is the case of Guaraqueçaba, also began to receive a high flow of people during the summer time, and in the face of this demand by the tourists, the local inhabitants saw in the *cataia* the possibility of obtain more income (D’angelis and Negrelle, 2014). It is important to say that the region is the biggest part of its area an environmental preservation area and few crops are allowed, and according to Ibge (2003), the poverty index of the region is up to 40% of the resident population.
The *cataia* is also classified as a non-wood forest product (NWFP), which is the source of non-woody forest. These resources are used by millions of families around the world who depend on them as an important source of income (Fao, 1992).

In Brazil, NWFPs such as *cataia* are always associated to the remaining natural ecosystems. In this case the Atlantic rainforest is found in areas inhabited by traditional populations such as the remnants of *caiçaras*, who survive as family farmers, small farmers, rural family entrepreneurs and artisanal fishermen. Paraná Coast, due to the great diversity and richness of the Atlantic rainforest, is one of the areas with the highest incidence of NWFP use in the State, where a large number of families have income obtained from these resources, being their only form of survival (Balzon, 2006; Iap, 2006).

However, little is known about the real potential of the most NWFPs, and more accurate feasibility studies are needed to introduce these impoverished communities into the formal market (Anacleto and Negrelle, 2015).

Nowadays, the production and trade of this beverage are extremely important for the families, since their business generates income, thus guaranteeing the support (Anacleto et al., 2016) in spite of the relevance of this form of production and trade of sugar cane spirit aged with *cataia*, few studies on the subject have been found.

In general, the potential factors that can increase the production and trade of sugar cane spirit aged with *cataia* as a way to promote regional development are not known. In this context, a better understanding of the conditions of production and trade of this beverage is essential to detect inadequacies that can compromise and discourage producers and reduce access to consumers.

Thus, considering the socioeconomic and historical importance of the use of *cataia* for these socially vulnerable communities, in order to subsidize the best understanding of the current scenario, this work presents the characterization of regional production, highlighting its particularities and discrepancies in relation to the models described and recommended in the specialized literature, and in diagnosing such factors that compromise the quality of the production, alternatives are proposed in order to correct the inadequacies evidenced.

II. METHODOLOGY

A descriptive exploratory research was carried out between July and August 2016 with the actors involved in the activity. The profile of the extraction and use of the *cataia* in Paraná Coast was carried out with traditional communities located in the bay of Paranaguá and Guaraqueçaba, known trade place for commercialization of sugar cane spirit aged with *cataia*, and where there are dozens of families in conditions of vulnerability.

The access to these rural communities in Guaraqueçaba occurred by boats, whose journey to the research area takes two and a half hours of navigation.

Firstly, according to Vergara (2000), the socioeconomic profile of the families involved in trade of sugar cane spirit aged with *cataia* was identified through the application to 9 families a semi-structured questionnaire containing 21 structured questions and 4 open questions.

In these visits, according to Negrelle and Fornazzari (2007), the participant
observation was made, aiming to identify how is the leaves collection, the drying process, the preparation of the beverage and the aging process of the spirit with the use of the cataia, as well as in this phase it was identified in the producers’ point of view the main obstacles and difficulties of the activity.

In order to identify the difficulties in the implantation in the practices, a diagnosis was made that provided data for the elaboration of the SWOT matrix: Strengths, Weaknesses, Opportunities and Threats (Mintzberg et al., 2000).

The composition of the SWOT matrix was organized according to Negrelle (2013) and Anacleto, Coelho and Curvelo (2016), grouping the strengths and weaknesses in the internal context of the properties and the threats and opportunities in the context of extra-properties.

The opinions expressed in the SWOT matrix were evaluated in terms of the influence exerted and the influence suffered in comparison to the other opinions, and a cross impact matrix was organized, which result generated the relevance index obtained by the equation:

\[
IR = \frac{\sum \text{InR}_n \times \text{InP}_n}{\text{Slsp}}
\]

IR = Relevance Index of the evaluated situation;
InRn = Sum of the received influence indexes;
Inpn = Sum of the provoked influence indices;
Slsp = Sum of indexes of questions reported by participants.

III. RESULTS AND DISCUSSION

The extractive communities

The first records of the cataia use related to the commercialization processes and spirit go back to the 70’s, and the uses of the leaves began simultaneously in Superagui Island located in the city of Guaraqueçaba in Paraná State and also in the region of Barra do Ararapira in São Paulo State, as also evidenced by Morgante et al. (2007) and D’angelis and Negrelle (2014).

The families involved in the activity lived on the island for many decades and had an average composition of 3.88 people, had small properties classified as rural, and also engaged in the production of food for subsistence, raising small animals for family consumption such as chickens and pigs.

The age group currently prevailing among those involved in the activity is 30.5 years old, and the average monthly family income was around R$ 800.00, this total being obtained from the trade of sugar cane spirit with cataia, and complemented with fishing, the artisanal sea fishing for most cases (n = 8).

The majority of those responsible for the production and trade process of cataia were female (n = 5), but the activity involved in general context although to a lesser extent all family members, and the knowledge about the way of use, were acquired by oral form in the context of the family cultural heritage and also of the community.
The resource extracted

According to the interviewees (n = 9), leaf cultivation only occurs in the locality due to environmental characteristics more conducive to its growth, and also to the existence of environmental issues in the National Park of Superagui, which prevents the cultivation in other parts of the island. However, during the accomplishment of the interviews, the cultivation of the *cataia* was not observed, the leaves used for the beverage production, in fact they came from extractivism, this information was also described by D’angelis and Negrelle (2014), who reported that the use of the species is made from the vegetation collection of native forest remnants.

The biggest part of interviewees (n = 8) also reported that the *cataia* can be found in the northern region of Superagui Island and also in the south of Barra do Ararapira in São Paulo, but this information differs from that described by Paula et al. Al., (2008) who reports the existence of this species in mountainous and coastal regions of Rio Grande do Sul, Santa Catarina, São Paulo, Espírito Santo and also Minas Gerais.

The production of sugar cane spirit with *cataia* in the region occurs during all year long, but there is greater production and consumer demand during the summer time from November to March.

The production process shows well-defined classes of workers:
a) Leaf extractors (n = 4): it is the community residents who extract the leaves of *cataia*, usually by order of other actors of the productive chain, the leaves are delivered as collected in the forest and the extractor receives the remuneration based on quantity in kilograms collected. Approximately 1.5kg of leaves per tree were collected, which were later sold in packages of 50 grams each one, for the average value of R$ 2.00, which in the end generated an income of approximately R$ 340.00.
b) Leaf traders (n = 6): these are those who are engaged in leaf trade outside the community, traditionally ask for the same collector who already knows the parts of the plant, size and forms of collection. Those commercialized the leaves at the average price of R$ 2.10, the package with 50 grams, which generated a monthly income close to R$ 440.
c) Producers of sugar cane spirit aged with *cataia* (n = 8): this actor can be characterized as one that develops all stages of the production process, from the collection of the leaves, the leaves mixing in the beverage, the packaging and the commercialization. The average production among spirit traders was 100 liters/month and the highest sales volume is concentrated during the summer time (December to February). The price was variable from R$ 6.25 to R$ 7.50 per liter, which generated a monthly income close to R$ 440.00.
d) Beverage Traders (n = 8): people resident in the community, who do not always carry out the production process, but they have a greater link with the commercialization, even outside the community. In this group were identified 4 owners of small enterprises at the island as restaurants or bars, which facilitated the flow of local production.

General characterization of the production process
The term *cataia* according to the local inhabitants has Indian origin people who inhabited the region and means sheet that burns and it already was used by the Indians in their drinks.

The collection of the *cataia*, approximately 1.5 kg of leaves per tree, usually occurred in the farthest places of the residences (n=2 km), and the harvest was carried out when the shrub was still less than two meters, which facilitates the collection of the leaves, and the majority of respondents (90%) the collection of the leaves was accomplished on a monthly basis, at the northern of Superagui Island, where the *cataia* was abundant. The collection was carried out when the shrub was still less than two meters, which facilitated the collection of the leaves, obeying environmental guidelines, in order to maintain sustainable extractivism.

The process of leaves extraction is questioned by residents in the region of Guaraqueçaba, given that in this region, although the extractivism of the leaves occurs, this is limited by the environmental organs, while in Barra do Ararapira the leaf production and extraction is allowed by government organs (SFB – Serviço Florestal Brasileiro – Brazilian Forestry Service, 2013).

The major obstacles cited by the totality of the interviewees regarding the extraction of *cataia* are related to adverse climatic conditions such as the long periods of rain that prevent the collection and drying of the leaves, the distance traveled for collection, the extraction by non-residents of the fishing communities, the difficult in the legalization of the material extracted for trade with invoice, besides the questions of soil and climate.

Another serious obstacle related to regional production is related to the difficulty in accessing the sugar cane spirit in order to produce the drink with *cataia* in Guaraqueçaba. The long distance from Guaraqueçaba to the regional polo city (Paranaguá), even though this distance does not yet have an asphalt road, ends up determining the increase of the drink.

It is noteworthy that the possibility of the spirit production in Superagui Island, place of greater production of *cataia* is remote, due to the region being mostly in the an environmental protection area, which prevents the cultivation of sugar cane.

The question of the legality of the cataia use and the authorization of extraction, even generated the resistance of the people in answering the present research for the fear of registering the affirmation as to the involvement and dependence of the production and commerce of the leaf, and of possible reprisals of the environmental agencies control.

**Perspectives and implications of the activity**

The production and trade of artisanal sugar cane spirit has been an important economic activity in Paraná Coast for many decades, and in several Brazilian regions it has been pointed out as a feasible form of development for small communities, but the sector scenario must be considered in the processes of planning activities aimed at the development of the activity.

According to Fao (2005) the use of knowledge in traditional communities must occur through interactions within internal and external social contexts so that communities can adapt to change, assimilate ideas, but often fail to make use of this knowledge for their own benefit, and external people often end up appropriating this knowledge. In this context the opportunities and the threats (Figure 1), according to Anacleto et al. (2008)
can be understood as being the natural trends available and that can be decisive for the sustainability of an enterprise, so it is urgent to identify the opportunities with the greatest possible precision, making the relation between the external scenario and the internal interrelationships, and how the entrepreneur can take advantage of these natural tendencies that are uncontrolled for the development of the activity.

Table 1 - matrix of cross-impact in the context external to the community, in the interviewees’ perception

<table>
<thead>
<tr>
<th>Opportunities</th>
<th>Index</th>
<th>Threats</th>
<th>Index</th>
</tr>
</thead>
<tbody>
<tr>
<td>Species with high interest of researchers</td>
<td>30,9</td>
<td>Lack of government incentive for the activity</td>
<td>23,2</td>
</tr>
<tr>
<td>Market of sugar cane spirit in growing</td>
<td>23,5</td>
<td>Difficulty in trade regulation</td>
<td>19,9</td>
</tr>
<tr>
<td>Market of leaves in growing</td>
<td>17,6</td>
<td>Lack of protocol for the species cultivation</td>
<td>13,2</td>
</tr>
<tr>
<td>Market hungry for Gourmet Products</td>
<td>8,8</td>
<td>Outside the community extractors explore activity</td>
<td>11,9</td>
</tr>
<tr>
<td>Low investment to start the activity</td>
<td>5,9</td>
<td>Faking the drink with cognac or honey</td>
<td>10,6</td>
</tr>
<tr>
<td>Favorable climatic conditions for cultivation</td>
<td>4,4</td>
<td>Lack of legislation on sustainable extraction</td>
<td>7,9</td>
</tr>
<tr>
<td>High flow of tourism in Summer time</td>
<td>4,4</td>
<td>Rejection of community association to researchers</td>
<td>5,3</td>
</tr>
<tr>
<td>Endemic plant of the region</td>
<td>1,5</td>
<td>Impossibilidade de cultivo de cana para produção de aguardente</td>
<td>4,0</td>
</tr>
<tr>
<td>Non-perishable product</td>
<td>1,5</td>
<td>Distance from mainland</td>
<td>2,0</td>
</tr>
<tr>
<td>Easy to execute activity</td>
<td>1,5</td>
<td>Lack of permanent line of passenger boats</td>
<td>2,0</td>
</tr>
</tbody>
</table>

All the opportunities are favorable to the market for sugar cane spirit aged with *cataia*, especially the fact that the market is expanding, which generates the opportunity for growth in the production and trade of the beverage. Despite the opportunities observed, it was identified that the threats are linked to the lack of governmental incentive, as far as cultivation is concerned, as the creation of protocols that regulate the trade of the beverage.

In this context, it is imperative that a channel of dialogue be established between these communities that explore the *cataia*, with public institutions and more closely with the governmental actors that represent these institutions. The dialogue aiming at rural development and the sustainable extraction of the *cataia* is essential, since the public power in Paraná recognizes the problems and more easily seeks the solution, when the communities are organized with specific purpose, in this case the exploration of the *cataia*. The producers’ organization can be classified as a necessity both for the search for threats mitigation, and for ways to maximize opportunities.

The opening of the dialogue may allow government actors in the several spheres of
public power to have the knowledge about the problems of the community and they can be better prepared to propose strategic actions that can be implemented according to the wishes of these communities.

The extraction human action, inherent to a particular culture, and common Paraná Coast, has a dynamic relation on the formation of the cultural group, with direct implications of the public policies, norms and decrees of the State, but the understanding of this dynamic, often only it is possible if there is the direct involvement of the State with these communities that allow dialogues about local habits and practices, allowing the historical analysis of these groups in the territory, as described by Ferreira (2010).

The development of entrepreneurship in the context of these traditional communities should consider their strengths and weaknesses more deeply (Table 2) in order to establish strategic references to assign short, medium and long-term actions aimed at improving efficiency and competitiveness.

**Table 2 - matrix of cross-impact in the internal context to the community, in the interviewees' perception**

<table>
<thead>
<tr>
<th>Strengths</th>
<th>Index</th>
<th>Weaknesses</th>
<th>Index</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Good income alternative</td>
<td>21,5</td>
<td>1 Low levels of entrepreneurship</td>
<td>22,0</td>
</tr>
<tr>
<td>2 Income generation every month of the year</td>
<td>18,4</td>
<td>2 Lack of production and trade planning</td>
<td>16,5</td>
</tr>
<tr>
<td>3 Exploitation of surplus family labor</td>
<td>12,3</td>
<td>3 Lack of technical training in beverage production</td>
<td>11,8</td>
</tr>
<tr>
<td>4 Appreciation of the female labor force</td>
<td>12,3</td>
<td>4 Low organizational capacity</td>
<td>11,0</td>
</tr>
<tr>
<td>5 Sales practiced on own property</td>
<td>11,9</td>
<td>5 Low level of dialogue with other social actors</td>
<td>9,8</td>
</tr>
<tr>
<td>6 Possibility of other forms of commercialization</td>
<td>10,2</td>
<td>6 Unregulated production</td>
<td>8,3</td>
</tr>
<tr>
<td>7 Beverage popularity</td>
<td>7,2</td>
<td>7 Low product divulgation</td>
<td>7,9</td>
</tr>
<tr>
<td>8 Quality of aged sugar cane spirit</td>
<td>2,7</td>
<td>8 Low bargaining power</td>
<td>6,3</td>
</tr>
<tr>
<td>9 Utilization of raw material endemic in the region</td>
<td>1,7</td>
<td>9 Baixa clientela fora do veraneio</td>
<td>4,7</td>
</tr>
<tr>
<td>10 Easy to produce</td>
<td>1,7</td>
<td>10 Lack of capital to invest in production</td>
<td>1,6</td>
</tr>
</tbody>
</table>

The trade and production of sugar cane spirit aged with *cataia* is a good alternative for generating income, since its production is low cost and simple, and makes it possible to trade throughout the year. According to Ferreira (2010), the complexity of the human interaction with the resources available in its extractive environment of non wood forest products, such as *cataia*, has been pointed out as a way of improving income for populations close to forested environments, while promoting economic development and forest conservation, in addition to contributing to the maintenance of families in rural areas.

Among the main weaknesses described by the interviewees is the comfort of those involved in the *cataia* activity, which generates a low level of entrepreneurship linked to
the growth of commerce, and also the absence of planning for production and trade as for the *cataia* leaf or the aged sugar cane spirit.

However, specifically in the case of sugar cane spirit with *cataia*, in addition to the issues mentioned above, another question that must be considered is the implications such as the impact that the practice of extraction can cause in the environment, especially the populations and the natural stocks of the species. This condition may be even greater than the current report of the interviewees (n = 9) that people outside the community have also developed the practice of collecting *cataia* leaves, but that these people without the historical involvement with the use of this vegetal resource can develop the extraction of an inadequate form which increases the risks of maintenance of the species in the natural environment.

A factor that must be considered in the context of the commercialization of this type of beverage is that according to Anacleto et al. (2008) in Paraná Coast, most cities have always been lacking in income alternatives, due to the fact that financial income activity, in addition to promoting the use of female labor, which, according to Anacleto et al. (2008) the female labor plays a predominant role in fixing families in their place of origin, and the exodus is facilitated by the absence of income alternatives for women, it is highlighted that the exodus in the traditional communities of Paraná in the last census is considered high reaching 10% being higher than other cities in Paraná.

Residents in these communities obviously live in the lack of employment, which is a reality in the rural areas in Parana Coast, in the regions where the *cataia* is explored, the difficulties are even higher, due to a greater rigor in land, agriculture and the forest use laws (Negrelle and Fornazzari, 2007), and their insertion in the labor market is even more aggravated due to the average schooling of those involved with the activity being considered low, since the majority of residents in the region (n = 85%) did not even have complete elementary education.

In this context, entrepreneurship is limited, and ends up being developed by necessity, when people are forced to take advantage of the possibilities they have, and in this situation the use of *cataia* and sugar cane spirit constitutes an important source of aggregate income for the families of the interviewees.

The entrepreneurship by necessity derives from the person who, when scarcity or even the impossibility of professional exercise that guarantees sustenance, ending their incomes, uses the possibilities existing in their surroundings and seeks survival within what is possible, being popularly known as "Turner Entrepreneur" (Souza-Neto, 2003).

The "convenience" observed in the communities may be linked to the environmental issues, as growing concerns about environmental issues have leveraged the issue of preserving forests to the level of international interest, providing new insights into the relationship between economic development and environment. In this line of understanding, the use of *cataia* in the aging of spirit with commercially sustainable end is an irreversible condition, besides generating income, there is the assumption that the objective of the economic development of the forests is the maintenance of them and their natural population, aiming at the profitability and competitiveness in the markets (Balzon et al., 2004).

The absence of activity regulation is a serious problem, and the likely solution to this problem is apparently far from effectiveness. The alternative that can be considered in
the mitigation of the problem, is based on Federal Law n. 11.428 / 2006 (art. 3º), which defines as a traditional population the one that lives in close relation with the environment, depending on its natural resources for its socio-cultural reproduction, through activities of low environmental impact, as is the case of those involved in the *cataia* activity.

The implementation of this policy is given by the National Commission for Sustainable Development of Traditional Peoples and Communities, regulated by the unnumbered Decree of July 13, 2006, which has the competence to identify needs and propose measures or modification of instruments for the implementation of relevant policies to the sustainable development of traditional peoples. It is understood as sustainable development the balanced use of natural resources, aimed at improving the quality of life of the present generation, providing that future generations have the same possibilities, but in order to achieve the benefits of this legislation, it is necessary that traditional communities be recognized by the public power, and it seems that the community cannot organize itself and achieve this goal without external assistance.

Ferreira (2010) describes that rural communities often create problems and difficulties for themselves, in the expectation that the actions will result in benefits, and emphasizes that the communities that most engage in extractive action suffer the most, because they do not have access to the necessary infrastructure, have insufficient human capital, weak institutions and generally weak bargaining power. This type of extractive action of the Atlantic rainforest farmer *caïcara* is also related to the following elements found in rural communities that make up their historical, social, environmental, political and cultural characteristics.

The dialogue between residents and scientists must be narrowed, science can be the catalyst in the search for new ways to use the *cataia*, and that the results can benefit the community. The community in question is separated from the benefits that the law provides under several aspects, including constitutional rights, competent to the State, to the care for citizenship and, because they do not comply with the requirements required under the various aspects of a confused and inefficient legislation, confronts us with explicit inefficiency of the Public Power, in the face of a system that is acting with a deliberate omission, the Public Power that ignores the existence of these entrepreneurs by localized needs, in this context in order to achieve sustainable development under similar conditions, a broad dialogue between science, policy and entrepreneurs is required, and in this aspect, secular farming systems can be interrelated in new propositions that result in a new concept of social opportunity, resulting from thoughts that contradict the usual capitalist model, that dialogue among the economy, the environment, social justice and sustainable development.

5. FINAL CONSIDERATIONS

The production and trade of sugar cane spirit aged with *cataia* in Paraná Coast occurs with the use of family labor in an informal trade system.

The set of opportunities and strengths allows to consider the activity as promising, and capable of promoting the sustainable development of the communities involved in the activity, but it is prominent the search for solutions of the main problems with regard to production and commerce that in the perception of the interviewees there are the lack of
regulation of the activity, the lack of incentive by the public power, and low levels of perceived entrepreneurship.

The main obstacles could be mitigated with processes of collective organization, which could confer greater power of bargaining with the public power, but apparently the community does not demonstrate to be able to develop the process of organization and strengthening of the social context.

The dialogue of knowledge among the community that develops the production and trade of the aged sugar cane spirit, public power and the scientific community may be the main route in the search for the solutions of the observed socioeconomic implications.

6. REFERENCES


