

The Palm Heart Strategy

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Introduction

We are all aware of most problems of this new century. Some of them are far from us, but we know them in theory. And we have also achieved the awareness that being part of the same planet, it does not matter how far it is from us, we all share the responsibility to search for solutions.

One of the main problems in this new century is overpopulation. In the beginning of the 19th century, there was a population of 1 billion inhabitants. We began the 21st century with a population of 6 billion inhabitants, and studies predict something around 9 billion of people for 2050. Through this period, the agricultural area did not have a significant increase, and the demand of food was multiplied by 6. Therefore, the goal has been the increase of productivity.

The production may be possible, but the question is how to produce all that food without damaging the earth and humanity. One of the possible solutions is a production system that joins economical, social, and environmental issues. That combination aims to sustainability, and that would be sustainable agriculture.

In a global scale it may happen that the problems concerned to a specific region and its solutions are impossible to be shared between nations. Nevertheless, regardless the root of the problem, strategies that are applied to solve it can be rich tools which are not restricted to any environment.

The strategies are always different, usually connected to the history and culture of the region, and when this diversity is shared the results can be very interesting. In spite of all differences in the projects, some main concepts have turned to be global, which is the case of the sustainability concept.

The concept of sustainability has become a goal in most of the production systems, and in Brazil it has actually become a fever within the academia and in publicity. The popularity of the term is irrefutable, but at the same time its comprehension has not followed its rapid spread. Many projects aim to it, seeing it as an end, but not as a mean.

Analyzing sustainability as a concept that covers economical, social, and environmental issues, it is more than expected that the strategies of adequacy also respect all the stakeholders.

An environmental problem is usually related to social and economical issues, therefore the strategy to solve it must be based in all matters (Figure 1), and when the strategy loses this path, it usually ends in utopian ideas.

Lately, after it was understood that the solutions are not promptly available, the term “innovation” became part of these searches. In this scenario, Brazil has developed a very innovative project to solve a particular environmental problem: the illegal deforestation of the Juçara palm tree (*Euterpes edulis*) for the production of edible palm heart in the Atlantic rain forest, which represents one of the most devastated forests in the world.

The objective of this project is to gather independent researches, by developing a

consistent strategy to the adequacy of this problem. Considering its connections to cultural and economical factors, the strategy is based in the following topics:

- i. The development of a sustainable source of edible palm heart, maintaining the Brazilian production.
- ii. The development an alternative activity for the communities that lives inside the forest extracting palm heart, replacing the deforestation of palm trees to a sustainable activity.

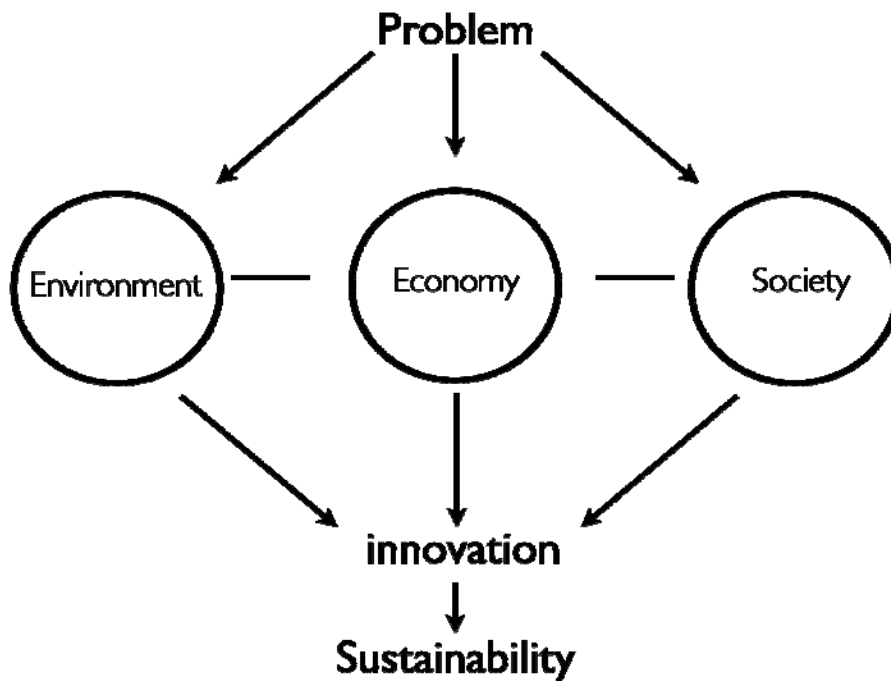


Figure 1. Diagram of the Strategy

History

In 1992, a United Nations (UN) conference on environment and development took place in Rio de Janeiro, with the main objective of searching means to conciliate the social and economical development with the preservation and protection of ecosystems, enshrining the concept of “sustainable development”.

This conference worked towards “international agreements which respects the interests of all and protect the integrity of the global environmental and development system, recognizing the integral and interdependent nature of the Earth” (UN – General Assembly).

Among all the measures taken by the participating nations, one had direct effect on the production and market of palm heart. In the occasion, it was decided that from the year of 2000 on, no country could export or import any palm heart obtained from native

palm trees. That was an important and relevant decision, which was based in the fact that this activity was causing a huge environmental impact, as the palm heart is a section of the stalk of the palm tree, therefore to obtain it, it is necessary to cut the palm tree off. The extraction of native palm heart was already illegal, but the law was not enough. With the agreement, the market would force changes.

At the same time that this agreement and the laws were important to the environment, they caused an immediate social problem, as it obligated a lot of families that had depended on the extraction of palm heart to change their activity. But this people had no knowledge, neither opportunity to work with something else, so they keep extracting, even that it turned illegal.

The fact that that palm heart was clandestine did also affect the consumer, because being illegal, they could not get caught by the surveillance, and because of that, the primary process that the palm heart needs to be submitted before being bottled, which is the boiling, was made inside the forest in unsanitary conditions and falsely labeled with existing brands. These unsanitary conditions caused intoxication of a large number of people, and even death by botulism (caused by *Clostridium botulinum*).

The Situation Before the Conference

Brazil had always played an important role on the global market of palm heart. The production reached the amount of 132.105 ton in 1985, and the country was the biggest exporter. Unfortunately, this huge number has a sad background as almost the entire production was based in the deforestation of native palm trees.

The trade of palm heart was the main activity of a large number of families that lives in communities inside the Atlantic Rain Forest. These communities descend from indigenous and from communities originated in the times of slavery. At the time that these communities originated, they used the rainforest's resources only for their survival, the purpose of the activities was only subsistence, and being made in small-scale, a relative sustainability was ensured. The situation began to change with the growth of the urban area that invaded the forest, not only devastating the nature, but also forcing the people from the local communities to a change of values, which would no longer extract the resources to subsistence, but to trade, as having money began to be very significant in their semi urban life. With this new objective in the activity, the small-scale extraction and the relative sustainability changed into a big-scale extraction with a huge environmental impact.

The most preferred palm heart, and also the most traded one, is extracted from the juçara palm tree (*Euterpes edulis*) inside the Atlantic Rain Forest, a forest that has today 7% of its original size, or 1.195.000 Km² less nature. Although the deforestation of the palm tree is for itself a concern, the indirect consequences are equally harmful. They are based in the fact that this palm tree produces a fruit that is important as a food to a lot of animals, such as the golden-lion-tamarin (*Leontopithecus rosalia*) and the Glaucous Macaw (*Anodorhynchus glaucus*) which along with many others are already in the official list of animals threatened with extinction, and the damage goes on as these animals are responsible for spreading seeds of other trees. For all these consequences, we can say that the extraction affects the environment in many trophic levels, therefore

being an important matter to be worked on by the nation. The size of the matter was recognized, and it became one of the subjects discussed in the UN conference in 1992.

The Situation After the Conference

In 1994, the Brazilian production of palm heart had fell to 22.500t, representing a drop of 83% in relation to 1985. This crash was caused by the exhaustion of the native resources, and because the police surveillance on the matter was intensified after the conference.

This change in the scenario meant that a problem initially restricted to the environment, had affected the economy and the society. Therefore, the strategy to solve it had to cover all this aspects.

The Economical Aspect

The production of palm heart was the first area that had its researches intensified. There was a huge demand of the product, and the income that its cultivation would bring was very attractive. It was necessary to cultivate it, and the problem was that the most known species of palm tree for the extraction of palm heart presented to many difficulties for being cultivated, specially the fact that the period of its production cycle exceeded 5 years, which turned its cultivation economically unviable.

Within the researches, a species emerged as a possible solution. It is the pupunha palm tree (*Bactris gasipaes*), which was already explored in Costa Rica and in other countries of the Central America. This finding was the first big step, which started a new phase on the matter.

The Pupunha Crop

The pupunha presented a lot of characteristics that made its cultivation feasible, concerning to the production cycle and other important features. Not only its production cycle is lower than 2 years, but it also presents tillering occurrence, which means that new stalk sprouts along the main stalk, allowing staggered crops. And of course, a high quality palm heart. It also presented good aspects concerning to storage, as the palm heart from the pupunha palm tree allows cooling and freezing.

Today the activity has a relative low cost of implantation and maintenance, allowing small farmers as well as big farmers to produce it, offering a new economic opportunity and improvement for the society and landowners, and places Brazil back in the global market of palm heart, which by the year of 2000 had already a recovered 87% in relation to the offer in 1994.

The Social Aspect

Although it a clean source for the production of palm heart was found, the crop

became interesting only to farmers, as a new rural activity. It turned possible a sustainable production, but did not eliminated the extraction of the native palm trees in the Atlantic Rain Forest, as those who depended on the former activity, had no land to start cultivating, giving them no option except continuing with the illegal extraction.

It was time to the researchers to focus their work in the search of an alternative income for the communities, which would be an even greater challenge. Those people had no land, and no interest in moving to the city, what they had was a very strong connection to the forest. It was necessary to develop something that allowed them to maintain their way of life, their culture, but in a sustainable and legal manner. The question was how to conciliate the preservation and protection of that ecosystem with the economical and social development of so many people inside an injured forest.

To understand how the strategy followed, it is necessary to understand a new market that was emerging in the Amazon forest, 3.000 Km in straight line from the Atlantic Rain Forest. This is market concerned to the Açai palm (*Euterpe oleracea*), a palm tree from the same genus of the Juçara palm, but not for the production of palm heart. This palm tree produces a berry, a small, round, black-purple drupe about 25 mm in diameter, similar in appearance and size to a grape.

Açai

This fruit is very important in the diet of the local population and Indian tribes in the Amazon for hundreds of years. In a study of three traditional populations in the Amazon region of Brazil, açai palm was described as the most important plant species in that biome, because the fruit makes up to 42% of the total food intake by weight. Recently, the açai "berry" has been marketed as a dietary supplement, providing increased energy levels, improving digestion, detoxification, high fiber content, improving skin appearance, heart health and sleep, and reducing cholesterol levels. It became famous in Brazil, being a fever from north to south. The international market rapidly got interested in the fruit, especially Australia and USA.

The açai berry products are now traded in the form of tablets, juice, smoothies, instant drink powders, and whole fruit. In 2007, it was elected by Mintel Research Consultancy, in USA, as one of the "main flavors" of the year.

The Connection Between Açai and Juçara

These palm trees grow in different biomes, therefore it is comprehensive that the researches as well as the people involved are not interconnected. The highlight happened when the researchers realized the similarity between the fruit produced by the juçara palm tree and the fruit produced the açai. So they tried to use the fruits of the juçara palm tree to make the same products, and not only it worked, but in fact, it has the same taste, and even better nutritional characteristics as the popular açai. The objective was not to compete with the açai, but to join its market, the existence of a mature market turned possible a slow, and consistent transition of the exploration.

These discoveries provided the possibility to alternate the exploration of the palm

tree, what was even better than to offer a completely different activity. The collect of fruits to be sold for companies, or even a modest process made by the communities would bring them a much higher income that they had with the trade of palm hearts.

The Transition

One palm heart means one palm tree, which means US\$ 0.50 to the extractor. The more money he wants to make, more palm trees he needs to cut, and as in a vicious cycle, the activity consumes its own stock. On the other hand, with the collection of fruits, one palm tree means 10 Kg of “berry” per year, which means US\$7.50 per tree every year.

With this new exploration, it is no longer necessary to convince the people in the communities to stop cutting palm trees, as the palm tree alive begins to mean more money. But even though this new option was more profitable, the transition was not immediate. There was nothing related to the exploration of the fruits in that area, no companies to industrialize the pulp, and they had no knowledge to produce it by themselves. It was necessary to initiate a program that would present them the possibility of changing their activity into a more profitable and sustainable one would teach them to make the pulp, which is not complicated, and that would guide the production into the market. This is already happening, with private and public interest, the production of pulp through the Juçara palm tree is becoming reality.

Conclusion

The main goal was to cease the deforestation of the Juçara palm tree, which was already in risk of extinction. That is an environmental problem, but its connections to non-environmental issues were so strong, that a law prohibiting the deforestation was not enough.

The success of a strategy is usually based on the perfect match between ends and means, even when intermediate objectives are not a goal. A blind line of thought would force the communities from the Atlantic Rain forest to stop with the deforestation only by applying the law and the police force. This measure would not only destroy the culture of these ancient communities, as they would have a short term success. For these reasons, it is comprehensible that the aim is actually equilibrium of forces, and if sustainability is the model to be achieved, all the process of changing needs to be sustainable. After that is understood, it is also possible to understand that sustainability is actually the consequence of the strong, but healthy, connection between all the stakeholders.

In the “Palm Heart Strategy” there was a complex problem, connected to environmental, social, and economical issues (Figure 1). To solve it, all the factors needed to be taken seriously. It was necessary to understand them separately, and then, understand its connections to set a direction to the search, believing in innovation, and aiming to sustainability.

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