

# Environmental Management Practices in Rural Properties

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**Abstract**— This study aimed to promote a theoretical discussion about environmental management in the universal context applied to rural areas in small farms and as specific objectives indicate the most common practices related to Rural Environmental Management and show the most flawed practices with the environment in rural properties. For this purpose a bibliographic survey on sustainability was used, followed by environmental management as a complex context for to articulate studies on rural environmental management, in other words, an application of the principles of sustainability in rural use. At last studies by other authors were used to indicate which are the most common practices, which are the wrong forms and are being applied.

**Keywords**— *Environmental Management; Rural properties; Sustainable practices.*

## I. INTRODUCTION

Over the last decades the environmental problems resulting from the growth focused on the economic factor, taking several looks at the sustainable issues, have increased. Ecological thinking became active in organizational matters. Therefore, nowadays the needs are in the assessment not only of development, but of the type of development that one wishes to implement by considering that “development and environment” are no longer antagonistic but complementary; the existence of one is dependent on the good direction of the other (LAYRARGUES, 1997).

In doing so, urban and rural organizations began to pursue a sustainable commitment due to several factors. The sustainable movement has become one of the “[...] most important of our time and judging by the vitality of the institutional factors present [...] around the world, it can be inferred that it will continue to spread for many years decades” (BARBIERI et al, 2010, p. 153).

In turn, the world has seen the continued growth of consumer needs and the competitive market environment in which new ideologies have been opened up; rural properties began to look for new production techniques to increase grain production, enhance agriculture and generate greater income for producers (MOREIRA, 2009). However, all these changes led to higher consumption and environmental degradation. Equally the current production pattern, which accounts for

much of the increasing commitment to expand the countryside, is generally intensive in higher energy, raw material and natural resource expenditures, resulting in a large environmental loss. (LUSTOSA, 1999).

In doing so, the idea of sustainability and the debated sustainable development was presented as a concept to be popularly disseminated in 1992 at the United Nations Conference on the Environment in Rio de Janeiro - RIO 92 - (CMMAD, 1991) and resumed in 2012 at the Rio conference. +20, also in the same city where the concept of sustainability and its importance worldwide was emphasized. This concept came to consider sustainable everything that works with current resources consciously without compromising future needs. Therefore, the idea of sustainability was the assumption that one could talk about Environmental Management not only in the urban scope, but mainly and in the aspects of rural production and growth.

In doing so, the Rural Environmental Management has become a tool to emphasize sustainable rural development by presenting proposals for Environmental Management Systems (EMS) aimed at new greener and more environmentally conscious views. In doing so, this study aimed to theoretically discuss the environmental management in the general context applied to the rural environment in small farms, consisting of specific objectives of: indicate the most common practices related to Rural Environmental Management and report the

main problems in relation to more environmentally sound practices on farms.

This way, a study was conducted that sought to review the concepts of sustainability and environmental management followed by studies focused on Rural Environmental Management and environmental practices applied correctly or mistakenly in rural areas.

## II. THEORETICAL FRAMEWORK

### 2.1 Sustainability and Environmental Management

The sustainable movement has generated one of the largest social and environmental foundations over the past decades

(BARBIERI et al, 2010), because in 1987 the report Our Common Future obtained the first and official definition of sustainable development spread in Rio 92: "Sustainable development is one that meets the needs of the present without compromising the ability of future generations to meet their needs." (CMMAD, 1991, p. 46).

This way, sustainability was based on its three main axes: social, environmental and economic. In doing so, the idea of sustainability was directly related to the idea of development, efficient use of resources and commitment to current actions in relation to future damage.

The Sustainable development has become relevant for generations who, in assessing the standard of living of their populations, were concerned with the directions of the planet. According to Carvalho and Barbieri (2012), Agenda 21, the founding document of the movement for sustainable development, explains that exorbitant levels of production and consumption patterns constitute the main causes of environmental degradation and that the production of food, which occurs mostly in rural areas wouldn't be able to supply all the demand.

Therefore, the word development spent to indicate "the process of promoting the qualitative improvement of the living conditions of the population of a specific country, region or place" (BARBIERI, 2007, p. 2). It also refers to the idea of productive transformation providing efficiency; most often linked to economic growth in which the latter had already occupied much of the classic organizational interests of yore.

Several organizations focused on sustainable development began to observe this new form of development, citing as examples the company Natura and Unilever, elected by Exame magazine (2011) among the 20 most sustainable in the country.

Besides sustainable vision of large corporations and brands, the foundation of development needed to be strengthened, because it would be difficult to talk about

environmental management without having to approach mainly natural environments like the rural properties.

The great expansion of agriculture and commerce, the industrial revolution, generated in the management of both companies and its properties, the need to better evaluate its requirements, considering the great agricultural mechanization in rural areas, as indicated by Oliveira and Senna (2012), the environment. environment and sources of resources needed more attention, resulting in several future concerns. (DUARTE, 1999).

It was then necessary to reflect not only about to produce, but how and how much to produce, observing a more sustainable means of development that supports the needs of the present without future damage.

This is because according to Hawken and McDonough (1993) individuals do not know what causes various problems as animal extinction, or what happens to 20% of carbon dioxide in the atmosphere every year. However, it is already aware that nature's reactions are directly related to human actions.

In doing so, the sustainable development theme proposed by Agenda 21 has been repeatedly criticized for also supporting economic development, as the latter has been considered one of the main causes of the great environmental and social problems of this planet. (BARBIERI et al, 2010).

For Barbieri et al (2010) economic growth and especially rural extension as smallholdings or large estates are the focus of entrepreneurs in need of ascent, which explains major global problems such as food shortages and serious environmental problems. This is because sustainability is directly related to Environmental Management, which is directly related to rural property and other organizations.

Although farms are part of a more natural context and that connect directly to the idea of a clean environment, it is not always so. Irregular growth and especially the use of machinery, pesticides have undermined the idea of a healthy and sustainable environment.

Therefore, to discuss about sustainability in rural properties, it is necessary to reflect on Environmental Management conscious and focused not only on productivity, but on the quality of its production (BARBIERI et al, 2010).

This way, Environmental management has emerged for producers as a strong competitive tool that by enabling reflections on concerns, has generated changes in the way of thinking about the environment and controlling human actions about it.

Then came the Environmental Management System (EMS) that comprises a set of actions aimed at planning, organization, control and minimization of environmental impacts caused by production processes. (BARBIEIR, 2007).

Environmental Management Systems are a form of control of farms, but cannot be applied without the knowledge and planning of producers.

## 2.2 Environmental Management of Rural Properties

Sustainable management aims to bring traditionalism closer to operations aimed at profit and efficiency, with a reflection about environmental impacts (KLEINDORFER, SINGHAL, VAN WASSENHOVE, 2005).

This way, Rodrigues (2016) considers as Sustainable Agriculture the management of agricultural ecosystems aimed at maintaining and increasing productivity, quality of the environment be it water, air, soil as well as the diversity of fauna and flora, and the quality of life of people, all over the countryside.

It is understood that it is not enough that property is sustainable, it must produce profits and be efficient in its processes, for this, it is possible to rely on the use of attractiveness in which innovation is one of the main tools.

According to Oliveira and Senna (2012) man has always taken advantage of the natural environment for his survival, removing everything he needed from the environment, developing agricultural mechanization activities in rural areas without proper management and especially without environmental and sustainable balance. Consequently, he needed to create methods of Environmental Management aiming to recover what was degraded and the maintenance of what still resists.

In doing so, rural environmental management is concerned with the sustainability of the rural natural environment, agricultural activity being one of the oldest forms of human interference about natural environment. Barbieri (2007) considers that human interference in rural areas represents a great environmental impact caused by the removal of natural vegetation, loss of biodiversity of flora and fauna, climate change, soil compaction and its loss of resources by monoculture, water pollution, increased pesticides and pesticides etc.

Besides that, most of the agricultural population develops through family support activities, resulting in the need to start means of environmental preservation concurrently with productive activities. This is because the monoculture model used was responsible for the loss of biodiversity and biomes causing a decrease in species of

animals and plants and other problems generated by unsustainable practice. (BARBIERI, 2007).

Irregular use of chemical inputs and fertilizers is one of the main means for environmental degradation, besides that, the irregular disposal of residues or waste from the agricultural and animal production itself. (BERNARDI et al, 2011). In addition, Rodrigues (1998, cited Rodrigues et al, 2016) says that it is indispensable to evaluate the impacts generated by agricultural activities and to create public measures aimed at the sustainable development of rural environments.

The authors point out that in order to verify the quality of environmental management it is necessary to carry out rural activities that promote the integration of local producers for effective management of sustainable techniques. For this to happen, the first objective is environmental education; it is the basis for producers who previously only cared about profit, also cared about maintaining existing resources. (SENNA, OLIVEIRA, 2012). After that it is possible for properties to apply the Environmental Impact Assessment (Avaliação de Impacto Ambiental - AIA); a formal document aimed at assessing which processes may cause the most damage to properties.

According to Rodrigues (1998, apud Rodrigues et al, 2016), AIAs are necessary to define the forms of management that minimize the effects of risky and polluting activities allowing the maintenance of the natural environment. Thus, the Rural Environmental Management aims to plan the process to prevent or minimize impacts, ensuring a more conscious use of natural resources, as stated by Dal Forno (2017), the planning is to know the origin of the wood that will be used to light the fire that will be used to make the dulce de leche and how will be the management of the forest in which this firewood comes.

This whole chain analysis is an Environmental Management of the whole process; however, it is necessary time, knowledge and commitment from those involved, highlighting what Senna and Oliveira (2012) explained about environmental education.

## 2.3 Small Property and the Environment

The concept of property, with its sense of real law, has changed over time, usually linked to political events (VAZ, apud COSTA, RESENDE, 2011, p.46) and the current economic regime. Similarly, the pursuit of economic activity is also linked to the fulfillment of social function and respect for the environment (CF, art. 170, III and VI).

This state is growing so slowly, as a condition of survival of the species, that the elaboration of a Global

Constitution that develops the environmental theme and other basic themes for societies is being studied (ESPECIALISTS, 2014).

Small rural properties are those with one to four fiscal modules (CAIRES; AGUIAR, 2015). Some studies point out that in spite of approval of the Brazilian Forest Code, Federal Law No. 12,651 / 2012, there are still extensive degraded areas that need to be recovered by means of new legislation.

One of the methods created by the federal government to ensure compliance with the legislation is the Rural Environmental Registry (Cadastro Ambiental Rural - CAR). The CAR is an electronic registration instituted by Law No. 12,651 / 12, mandatory for all rural properties. It aims to form a database for control, monitoring and combating deforestation of forests and other forms of native vegetation in Brazil.

The achievement of economic, social, and environmental benefits by smallholders must derive from the management of rural vegetation that respects the mechanisms that sustain the ecosystem. This is called sustainable management, which aims to ensure harmony between the environment and rural properties (BRASIL, 2012).

### III. METHODOLOGICAL STRATEGY

The method used for this paper was bibliographic research which uses several bibliographic sources to support the research.

For Vergara (2003), bibliographic research is a structured study, enhanced with theoretical material published in books, magazines, newspapers, electronic networks or material accessible and available to the general public.

Bibliographic research consists of reading materials to constitute the theoretical framework of the research, using books, monographic research, dissertations, theses etc. These theoretical sources are verified according to the research theme and thus the elaboration of the monograph work will be done (RAUPP and BEUREN, 2006). Through this method it was possible to elaborate the paper, aiming to understand the activities, functioning, strengths and weaknesses, opportunities and difficulties.

### IV. RESULTS AND DISCUSSIONS

Considering that Environmental Management refers to the management of economic activities rationally using natural resources as a focus on sustainability (BARBIERI, 2007), rural environmental management practices are the

activities that properties do to apply environmental management in daily lives.

It has been listed four empirical studies that present rural properties and its relationship with Environmental Management as the basis for its daily monitoring verifying which practices are most applied and which are failures during the sustainable process of the property's activities.

The first study is Oliveira and Senna (2012) who presented thirteen producers who were interviewed for the analysis of their Environmental Management practices, finding that most, although concerned about sustainability did not use specific sustainable management control techniques.

Among the listed producers all indicated the use of fertilizers, fertilizers and pesticides for pest control and product growth, they did not indicate using natural methods for pest control. On the other hand, half of the respondents grow organic produce and plant fruit trees, but less than half correctly separate, reuse or dispose of waste. (OLIVEIRA, SENNA, 2012). It is possible to notice that the environmental education and the incentive to the researched group directly interferes in the perception about the environmental management.

This is because when analyzing the second study brought, it is based on the survey by Kessler et al (2013) who interviewed a third of producers from Santa Maria / RS. He aimed in his research to identify which sustainable practices were applied by farmers, realizing a better consideration of farmers towards sustainable practices.

More than 60% of respondents indicated that their greatest preservation measures are related to riparian forest, correct return of pesticide packaging and proper management for water and soil preservation. The third study discussed was related to Oliboni and Sossae (2018) which aimed to verify the sustainable practices of rural properties in the municipality of Chapecó / SC.

It was possible to observe in the research the relation of education with the agroecological or non-agroecological profile of the marketers who sell their products in the fair of the producer in that city. It was found that among all respondents there was a good percentage of preserved riparian forest, indicated as one of the good environmental management practices applied by rural producers. (OLIBONI, SOSSAE, 2018).

An important point observed by the study was that agroecological and non-agroecological producers used artesian well water for consumption, however, only those first treated the water. This shows that there is a greater

concern about health and environmental risks from the first group.

Finally, the majority of agroecological producers indicated that they use green fertilizers, that is, those that own natural production, compared to non-agroecological ones, less than half use natural fertilizers, being the biggest problem the use of heavy pesticides. This way, it can be considered that the most present positive environmental management practices were:

- a) proper management of water care;
- b) The preservation of riparian forest;
- c) Proper disposal of pesticide packaging;

Considering the main negative practices, it is presented:

- a) the use of pesticides, fertilizers, fertilizers and industrial pesticides;
- b) incorrect disposal of solid waste;

Finally, one of the most important aspects highlighted was environmental education, considering that the higher education groups had a better understanding of environmental management practices compared to those with lower education levels.

## V. CONCLUSION

This study which aimed to discuss theoretically about Environmental Management, showed that concern with the environment emerged decades ago and is related to the idea of sustainability. In doing so, environmental management is important on farms, allows greater strategic control over activities and ensures greater safety for the environment.

It was possible to analyze, in relation to the Environmental Management practices, that the most effective ones have been the preservation of riparian forest, the correct management for water care and the correct disposal of collected packaging, such as those of pesticides, however, in Regarding negative practices, we can mention the use of pesticides, pesticides, etc., as well as the incorrect disposal of other solid waste.

It is possible to verify that the environmental concern is in the discourse of the majority of the interviewees in the surveyed studies, however, the practical application of the Environmental Management still crawls so that it can have a strong effect in the preservation of the environment, beyond that, the environmental education is an important ally to compose a larger group of adherents to environmental assumptions.

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