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Improving Sustainability Concept in Developing Countries

Permaculture, a tool for adaptation to climate change in the communities of the Laguna Oca Biosphere Reserve, Argentina.

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Abstract

The Laguna Oca y Herradura del Río Paraguay Biosphere Reserve, have a Formosa City, as a part of the plain alluvial system and ecosystems, being observe serious issues to socioeconomic, cultural and environmental levels.

According to the above, it was suggested that the habitants lifestyle from Biosphere Reserve, are unsustainable within the sustainability paradigm and by permacultural practices sustainable livelihoods will be generated.

The study focused in assembling a database, about the reality experienced by these communities and the lifestyle of its habitants, was analyzed within the sustainability paradigm.

The methodology used, was based on the territory diagnosis and model Survey Evaluation Sustentability Comunity, with a multivariate analysis information.

It was found that the habitants living conditions of the communities Reserve are unsustainable, observed that by incorporating permacultural practices, these conditions will change in favor of sustainable development and it will provide capacities to climate change adapt.

The study provides theoretical contributions, for conducting future research or prescriptive studies, on the basis of this study.

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Keywords: Permaculture, Climate Change, Biosfer Reserve, Sostenibility Paradigm.

1. Introduction

The Biosphere Reserve “Laguna Oca” is located on the right bank of the Paraguay River as part of the Formosa city, in the Formosa province, Argentina. The Biosphere Reserve “Laguna Oca del Río Paraguay”, was appointed in 2001 and comprises approximately 13,000 hectares of riverine wetlands adjoining the Formosa City. (Directorate for Scientific Technical Coordination Biosphere Reserve Laguna Oca y Herradura del Rio Paraguay, 2013). This study focuses on the neighbourhoods that are part of the Reserve at its limit with the city´s environment and part of the Transition area. The neighbourhood are: Laguna Siam, Santa Rosa, Villa Hermosa, San José Obrero and Bernardino Rivadavia.

The special case of the Biosphere Reserve Laguna Oca y Herradura del Río Paraguay (RBLOyHRP) is that it has the city of Formosa as part of the system of floodplain ecosystems and observed serious problems both socioeconomic, cultural and environmental level concerning regulations preservation of nature and the level of human intervention in the ecosystem of the Reserve.

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The life conditions from the resident’s area are not sustainable in terms of nature conservation, economic

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development, social equity and healthy conditions. This problem is the trigger of many problems that contribute to global warming and not have any kind of adaptation processes to climate change, becoming the communities of the studied place, highly vulnerable.

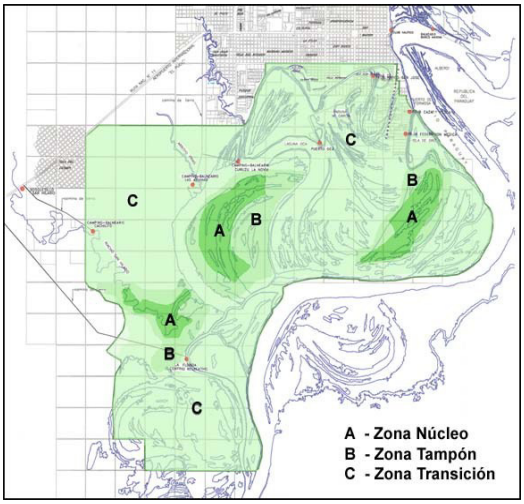

Figure 1. Biosphere Reserve Laguna Oca. 2013.
* Source: Scientific Technical Coordination . of the RBLOyHRP.

Figure 2. Areas that make up communities
* Source: Image provided by the PROMEBA III. Formosa. 2014.

In June of 2014, an event that is naturally likely, turned serious like in 1983, the Paraguay river and stream, they began to grow their level, generating a state of alert in flood areas, one of them, the Biosphere Reserve. The issue is that the living conditions of communities in the Formosa city, located in the peripheral or transition zone of the Biosphere Reserve Laguna Oca y Herradura del Río Paraguay, are unsustainable within the paradigm of sustainability.

Climate Change and its overall context, it is a problem that affects small and large scale, undermining any attempt at development, United Nations [1], the sustainability paradigm, Larrain [6] proposes, based on a vision from the complexity, different alternatives to direct development towards sustainable goal, a sustainability vision and as part of what the researcher considers sustainable lifestyle, is Permaculture, Holmgren [5].

A more current definition of Permaculture is proposed by David Holmgren in 1978, "The conscious design of landscapes which mimic the patterns and relationships in nature, while supplying food, fiber and abundant energy to satisfy local needs." People, their buildings, the way they organize themselves, are fundamental to permaculture. Thus the permaculture vision as a permanent sustainable agriculture has evolved into a vision of permanent sustainable culture.

In relation to the scene in which find the communities Reserve, it is considered that permaculture practices may be an alternative solution to several problems faced by these communities living within the sustainability paradigm; for this, the study focuses on the assembly of a data base. The research faced the study, based on cultural and geographical dimensions that arise for Sustainable Development as an alternative way, analyzing the different options for implementation of permaculture as a tool of adaptation for climate change and sustainable alternative development in communities of RBLOyHRP.

The Hypothesis proposed is:

“The life style of the communities habitants, placed in the RBLOyHRP, are unsustainable from the sustainability paradigm”.

The objectives for this study were:

General objective:

• Analyze the way of life of the communities habitants located in the RBLOyHRP, from the paradigm of sustainability.

Specific objectives:

• Characterize communities (neighbourhoods that are part of the RBLOyHRP into analysis units.

• Identify environmental problems of the communities Reserve.