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## Enhancing Conservation Units Management through Sustainability Indicators: A Case-Study in Combu Island, Brazilian Amazon

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### Abstract

In response to the high rate of deforestation observed in the Amazon Region, state and federal agencies have acted to regulate the Conservation Units (UCs) with the function of protecting areas with natural characteristics. Developing means of managing such areas, especially those where traditional people and communities are settled is therefore important to ensure the sustainable use of land and forest resources. This paper uses appropriate conceptual framework to propose the use of specific indicators systems for protected areas which could be useful to assess local sustainability as well as tools to determine weaknesses and strengths, and thus support the planning and execution activities related to the management. The paper shows the results of a research conducted at the “Combu Island” located in the Amazon Basin, an Environmental Protection Area (APA), a subgroup of Conservation Units of sustainable use, which allows the presence of residents. The island, with an area of 1.500 ha, has an estimated populations of 300 families distributed in four communities. A household survey using the participatory diagnosis was conducted on 100 households to collect data on economic, ecological and social aspects. The results were tabulated and transformed into indicators in the context of environmental, social, economic and institutional dimensions of sustainability. Weights and degrees of significance were adopted in order to determine the indices values by dimension of sustainability and the Global Sustainability Index (GSI) for the APA. The study proposed, taking into account achievable and verifiable criteria, the selection of 13 sustainability indicators for the APA. Each indicator has received significant degree interval between 0 and 1. Average indices for each sustainability dimension were evaluated and the results showed not satisfactory degrees of sustainability in the environmental, social and institutional dimension, and particularly low degree for the economic dimension, requiring attention and measures to be adopted to improve such figures. The GSI of the APA was thereafter calculated by the average of all dimensions and set as 0.437, which is very close to the minimum value for the average degree (0.400). Below this limit, the sustainability level reaches the stage alert.

**Keywords:** Brazilian Amazon, management of conservation units, sustainability indicators