# LINKS BETWEEN AGROTOURISM INDICATORS AND ENVIRONMENTAL CONSERVATION IN DIFFERENT SPACIAL LANDSCAPE SCALES

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## Introduction

A premise used by landscape ecologists is that the ecological integrity can be maintained if the ecological processes persist at all levels, which emphasizes the importance of defining the interrelationship between processes in different spatial extensions. The agrotourism is increasing in Brazil as an alternative to promote the rural development and conservation of rural landscapes, but these analyses are limited only to the rural propriety, disregarding the heterogeneous landscape mosaic in which it is inserted. Therefore, this study aims to evidence the links from environmental indicators on a scale *continuum* to allow a holistic definition of the agrotourism potential in an environmental conservation context.

## Methods

Based on literature review, two groups of indicators were selected for the environmental potential and weaknesses, that are essential to the effectiveness of links between agroturism and environmental conservation. The indicators were evaluated in increasing order of detail for four extensions of territory (region, municipality, sub- municipality and rural property) and four different scales (1:10.000 to 1:250.000). As a case study, an area was selected consisting of nine cities from the Mogi-Guaçú River watershed (located in the state of São Paulo-Brazil). The results were converted by the Sorensen Network simulation in magnitude degrees at each scale level, which were transferred and plotted on graphs.

## Results and Conclusion

The cross-scale potentialities and impacts graphical representations showed that there are attributes that exist at all scale levels and others that affect or are expressed only at certain scale levels such as vegetation cover. The environmental weaknesses also had distribution, magnitude and specific relationship of interdependence at different scales. The results show a heterogeneous distribution of indicators that is not random, but has essential links of mutual occurrence when observed through the scales. Thus, it was possible to demonstrate that the spatial configuration to the issues raised is cross-scale interdependent. In addition, it is possible to propose alternatives that, applied in specific hierarchical levels, could empower and conciliate the conservation to the agrotourism exploration.

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## Introduction

A premise used by landscape ecologists is that the ecological integrity can be maintained if the ecological processes persist at all levels, which emphasizes the importance of defining the interrelationship between processes in different spatial extensions. The agrotourism is increasing in Brazil as an alternative to promote the rural development and conservation of rural landscapes, but these analyses are limited only to the rural propriety, disregarding the heterogeneous landscape mosaic in which it is inserted.

## Study area

Nine cities from the Mogi-Guaçú River watershed.

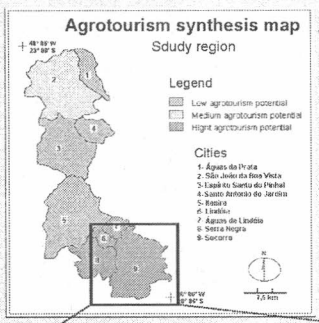

## Objective

To evidence the links from environmental indicators on a scale continuum to allow a holistic definition of the agrotourism potential in an environmental conservation context.

## Methods

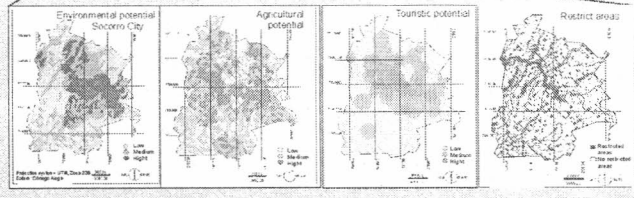
Two groups of indicators were selected (environmental potential and weaknesses).
The indicators were evaluated in increasing order of detail for four extensions of territory (region, municipality, sub-municipality and rural property)
The results were converted by the Sorensen Network simulation in magnitude degrees at each scale level, which were transferred and plotted on graphs.

Municipality

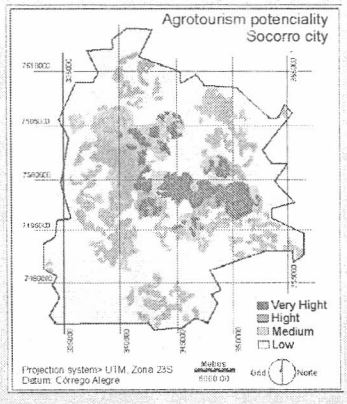


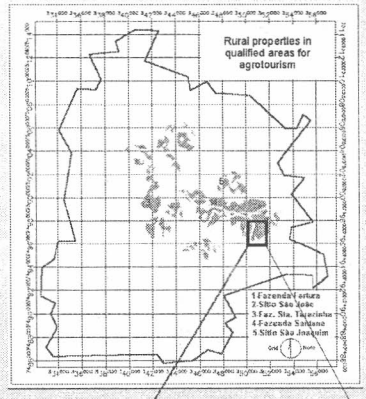

| Environmental | Agricultural | Touristics |
|---|---|---|
| Vegetation cover | Agricultural potential<br>Land cover<br>Cattle<br>Houses density | Road network<br>Hosting infrastructure<br>Tourist and environmental attractions |

Submunicipality

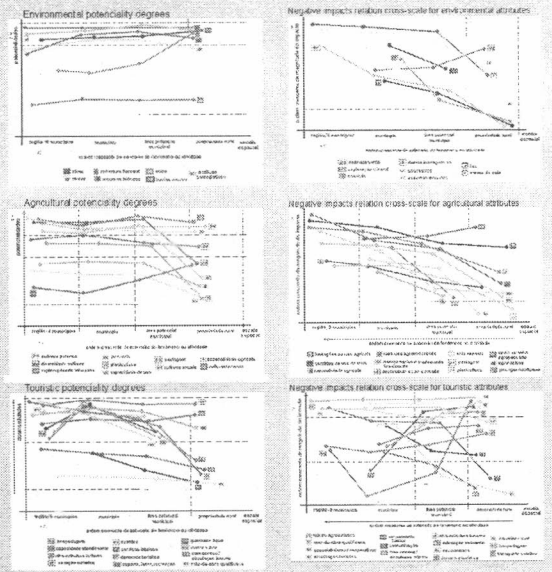



| Environmental | Agricultural | Touristics | Restrictions |
|---|---|---|---|
| Vegetation cover<br>environmentally restricted areas<br>Visual watersheds<br>Water proximity<br>Drainage density<br>Slope<br>Viewpoints | Agricultural potential<br>Land cover<br>Cattle<br>Houses density<br>Reforestation<br>Neighborhoods fitness related to agrotourism | Road network quality<br>Hostingl Infrastructure<br>Tourist and environmental attractions | Road network domain<br>Springs<br>Wetlands<br>High areas<br>Riparian Areas<br>Slope greater than 45°<br>Range around the lake |

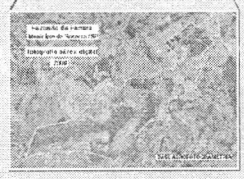



Rural property




| Environmental | Agricultural | Touristics | Restrictions |
|---|---|---|---|
| Vegetation cover<br>environmentally restricted areas<br>Visual watersheds<br>Water proximity<br>Drainage density<br>Slope<br>Viewpoints<br>Fishing potential<br>Bathing potential<br>Other water resources importance for wildlife<br>wildlife watching potential | Agricultural potential<br>Land cover<br>Cattle<br>Houses density<br>Reforestation<br>Neighborhoods fitness related to agrotourism<br>Seasonal variations | Road network quality<br>Hostingl Infrastructure<br>Tourist and environmental attractions<br>Architectural heritage conservation<br>Aesthetic and conservation values of landscape<br>Access infrastructure | Power lines<br>Erosion<br>Trash<br>Strem water interference |



## Results and Conclusion

- The heterogeneous distribution of indicators is not random, but has essential links of mutual occurrence when observed through the scales (cross-scale interdependent)
- There are attributes that exist at all scale levels and others that affect or are expressed only at certain scale levels.
- The environmental weaknesses also had distribution, magnitude and specific relationship of interdependence at different scales.
- It is possible to propose alternatives that, applied in specific hierarchical levels, could empower and conciliate the conservation to the agrotourism exploration.