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48. *ES in healthy Rural landscapes: examples and calls (OPEN)*

## **Environmental services in agricultural landscapes: scale-dependent effects and households adaptive capability interactions**

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Disturbed landscapes have a great complexity of interactions, since farming systems have a recognized role in maintaining biodiversity in these places. This study aims to understand the environmental services related to the existence of forest fragments, considered a source of biodiversity at different scales in an agricultural landscape and present a participatory approach to develop environmental friendly management practices. The work was conducted in the settlement São José da Boa Morte (Cachoeiras de Macacu, RJ / Brazil) in 21 farming systems. Evaluations were made at three spatial scales: crop system (0.5 ha), production unit (4 ha) and the surrounding landscape (100 ha). The assessment of the agricultural management of these areas was performed by obtaining the intensity of management features used (agrochemicals, tillage etc.) geared semi – structured interviews. The characterization of elements of the local landscape was obtained through GIS tools (density of remnant native vegetation and trees). Insects from Vespoidea superfamily (Order Hymenoptera), responsible for environmental services for agriculture, such as predation and pollination were used as environmental indicators. The results were presented to farmers through meetings and semi-structured interviews aimed to knowledge exchange, seeking reflection on the possibilities of adapting the management practices. The results show that the diversity of the community of wasps found in the assessed crops is positively correlated with the density and distance from the forest fragments, presence of secondary vegetation and abundance of tree element and a negative correlation with the management of production units and cropping systems. Production units, although near forest remnants become biodiversity drain in different landscape scales and distant sources of production units for biodiversity will require a large adaptive effort to maintain their productivity and profit. The meeting of knowledge generated a list of native tree species in the region with economic potential indicated for forming hedgerows, practices recognized by farmers as beneficial to maintaining biodiversity and other agricultural practices aimed at diversifying the landscape and reducing the use of agrochemicals have been tested. The generation of knowledge separated from the local knowledge technologies are not able to develop solutions that fit to the reality of production system and therefore poorly collaborates with conservation of environmental services.