

1st ISATA – International Symposium on Agricultural Technology Adoption: studies, methods and experiences



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SESSION 3 - Impacts of Technology Adoption

Impact Assessment of Technology Adoption Aiming the Transition Toward Sustainability in a Rural Establishment in Central Amazonia

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The current agricultural production scenario emphasizes the sustainable use of natural resources, through the recognition, selection and adoption of environmental management practices. Management should aim at improving productive performance, adopting preventive and corrective measures to increase productivity, as well as conserving natural resources and preserving natural environments and biodiversity. These objectives should focus on the adoption of technologies according to the socio-environmental context and economic characteristics of rural communities and establishments, in their most diverse conditions and locations. In this sense, the present work refers to the analysis of social and environmental performance indicators of the practices and technologies adopted at 'Sítio Jardim do Eden', a Reference Demonstration Unit of a technology transfer project dedicated to rural development actions at the APA Tatumã Açu / Tatumã Mirim (Embrapa Western Amazon, Manaus-AM). The study systematized the analysis of social and environmental impacts, according to the productive context observed since 2008, when a transition occurred from charcoal-making without environmental licensing, to the current production of foodstuffs, especially organic produce for trade, as well as domestic animals and vegetables for family consumption. The analysis applied the "System for Environmental Impact Assessment of Agricultural Technology Innovations" (Ambitec-Agro), a set of 148 indicators, organized into 27 criteria and seven aspects descriptive of social and environmental performance: (i) Technological efficiency, (ii) Environmental quality, (iii) Customer respect, (iv) Employment, (v) Income, (vi) Health and (vii) Management. The case study showed significant and positive changes in socio-environmental and economic performance at 'Sítio Jardim do Eden' (index = 6.91, on a ± 15 multicriteria scale), with productivity gains and production diversification resulting in important improvements in the family's food security. Compared to the

coal-making that occurred 10 years ago, the present productive context has brought advances in issues of environmental and collective interest, in terms of favorable direct and indirect land use changes, reduction of greenhouse gas emissions to the atmosphere, as well as expansion in community participation and enhancement in social capital. Improvements have been observed mainly in terms of private interests, such as income generation and property value, quality of working conditions, and occupational safety and health. Gender and generation equity is emphasized, given emancipation and reward for the engagement of wife and children; besides adequate conditions of commercialization, as well as recycling and reuse of organic residues in favor of production. Improvements were also observed in the 'Management' aspect, with emphasis on the dedication and profile of those responsible for the establishment, dedicated to improving the planning mechanisms for productive activities and financial management in the short, medium and long term. The results of this analysis of sustainability indicators provided the basis for decision making, in order to improve current management practices and technology adoption, appropriate to the local productive context.