



Deutscher Tropentag,
October 11-13, 2006,
Bonn

“Prosperity an Poverty in a
Globalised World – Challenges
for Agricultural Research”

Resources Management and Effective Co-operation of Organisation in Amazonia: A discussion on the Social Component of Recycling in the City of Belém

Arimar Leal Vieira 1; Marcos Ximenes Ponte1;
2 Antonio Carlos Freitas; 3 Rebekka Kubisch.

1 Federal University of Para, Brazil; 2 Brazilian Agricultural Research Co-operation (EMBRAPA),
3 Frankfurt University -Germany

Introduction

The main purpose of this research is to understand the organisation process of recycling in Amazonia through the discussion of the social components of the sorting collection system mostly conducted by former farming family in the city of Belém. A broad understanding of this issue involves the interaction among different groups as well as the social-economical situation of these actors.

Methodological aspects

The research area was the city of Belém in the State of Pará in the North of Brazil. The approach included field study, interviews with 261 scavengers, strongly supported by an interdisciplinary study mainly based on the fields of Industrial Ecology (IE), Theory of Groups, Cost-Benefit Analysis (CBA) and Life Cycle Assessment (LCA). This study focus on the use of LCA methodology, introducing the social component in its scope, trough the analysis of the agents that act in the recycling of materials.

Results

The results show that the recycling system in Belém takes place through organisation, and it happens in different patterns of interests. The economical evaluation accomplished by the means of the Cost-Benefit Analysis obtained by each agent, is a fundamental instrument to explain the social component mechanism of the recycling activity for aluminum cans.

Table 1: Scavengers - Main Socioeconomic Profile

Scavengers profile	N° of Interviewees	Sex		Daily Working Hours		Monthly income(R\$ 1,00) and Percentage	
		M	F	3-6 hours	7-12 hours	Less than one minimum wage	More than four minimum wages
Streets	101	74	27	30	71	38 (14,56)	63 (24,13)
Shopping/ Recicladores do Aurá	14	1	13	9	5	8 (3,07)	6 (2,30)
Aura Landfill	54	18	36	13	41	24 (9,20)	30 (11,49)
Waste dumping areas	41	15	26	6	35	27 (10,34)	14 (5,36)
Scavenger with manual Wagons	51	51	0	9	42	0 (0,00)	51 (19,53)
Total	261	159	102	67	194	97 (37,17)	164 (62,81)



Figure 2: Women in the Scavenging Activity



Figure 3. Scavenging at the Aurá Landfill, 2004

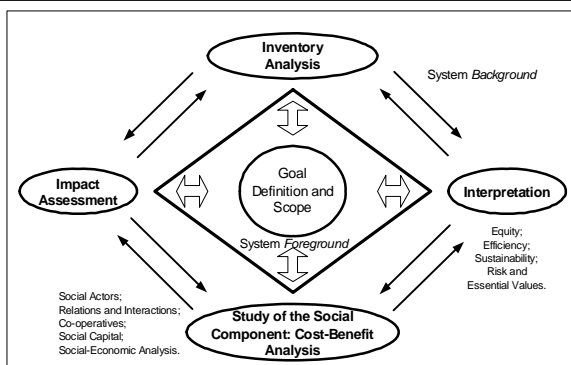
Final Consideration

This work demonstrated that the combination of an interdisciplinary study, combining the methodology of LCA applied in the social field of the recycling activity represents a valuable tool to achieve a complete and homogeneous analysis for the process of the resources management as well as the economical and social benefits acquired by the different actors that work alone or in groups in the recycling link.

References

VIEIRA, A.L. *Análise do ciclo de vida (acv): uma avaliação social e econômica da reciclagem das latas de alumínio na cidade de Belém.* Tese de Doutorado. Núcleo de Altos Estudos Amazônicos – Universidade Federal do Pará. NAEA/UFP. Belém-Pará, Brazil. 2004.

VIEIRA, A. L. & XIMENES, M. P. *Efeitos organizativos e manejo de recursos: o papel dos agentes sociais para a reciclagem na cidade de Belém* In:III Encontro da ANPPAS, 23 a 26 de maio de 2006. Brasília-DF. ANPPAS, Brazil.



Figures 1: LCA Operative Model with the Social Component