1. Justification

In the Amazon basin there is a variety of common forms of access to the geographic spaces and natural resources. Despite the several findings reported on resource management and income generation by extractive producers, information from integrated studies for specific forest users and products in certain locations is still limited.

Some forest dweller uses are region specific, while others are specific to a group of people, or to a household. Most forest dwellers rely on a mix of extractive activities, such as timber exploitation, açaí fruit gathering, palm heart harvesting, etc., for home-consumption and/or monetary income generation. A lot of uncertainty persists in regards to who these “forest-extracting people” are, their main productive activities, labour allocated, land use, income earned and the impact on the forest resources in the long run.

In the periodically flooded areas (Várzea) and in the upland (Terra Firme) of the Amazon basin, “riverine” populations have extracted forest products for generations. However, these practices vary in intensity according to the access to natural resources, the dweller capacity to extract forest products and the opportunity that they have to sell them. Rules and control regarding the forest utilization are lacking.

With a high unemployment rate, and general poverty leading to increased pressure on forest resources, the search for sustainable alternative sources of employment cannot be over-emphasized. This Forest Dwellers study in Pará state, Brazil, concentrates on the analysis of social and financial aspects at the household level. While examining the various forms of forest extraction by forest dwellers in the Várzea and Terra Firme and assessing their importance at a local and regional level, special focus is put on the patterns of income sources and financial patterns of the households.
2. Objectives

The study focuses on the analysis of Forest Dweller Household Systems in selected Várzea and Terra Firme communities and investigates how the production systems are allocated across households. It deals with the strategies adopted by small-scale forest extractors in the Amazon estuary, Pará State, Brazil. The comparative evaluation of how the products have been collected, processed, and commercialised indicates the relative degree of importance of the respective production systems to the households. So, the role that forest products play within the dweller systems and the criteria used by forest dwellers to allocate their resources can better be understood. This serves to contribute to a platform for the elaboration of realistic concepts of sustainable forest extraction and management in future.

3. Research Methodology

Having had consulted academia and research institutions, communities to be investigated had been identified. The exploratory study comprises two case studies in Várzea and Terra Firme regions, namely three small dwellings (Monte Tabor, Manoel Carneiro, Nova Santa Cruz) in Breves municipality and one (Itacoa) in Acará municipality, respectively. Based on the Farming Systems Approach and its holistic view semi-structured questionnaire based interviews and observation are the main tools to collect primary data sets in the selected dwellings, in markets and from other actor groups. Altogether 60 households, tradesmen in two market places and representatives of various institutions had been interviewed. The investigated sample cannot represent the totality of the Amazon region; but it is one more aspect to be taken into account when analysing the different realities found in its wide scenario.

4. Production System in Várzea and Terra Firme communities

The self-sustenance orientation prevails within the forest dwelling household systems of both, the Várzea and Terra Firme communities. The investigated forest dwellers can be classified as “agro-extractive”. This means that they deal with cropping and extracting products from the forest at the same time. The practised “agro-extractivism” reveals a number of specific attributes.

The existing systems in the locations under research are strongly characterised by the emergence of a “household organisation”. This occurs in the form of a “family-farm” with its intensive use of unpaid household labour and sometimes with extra (neighbour’s) labour. This is the only form of production structure, which has been existing in those regions since a long time.

Another significant characteristic of the households in the Várzea and Terra Firme dwellings is the small resource base on which they have to operate. Households living in Várzea locations do not know (70%) or use up to 1.3 ha of land area. Terra Firme households have control over 0.5 – 0.81 - 1.6 ha,
which in most cases is naturally poor or depleted, and fragmented. There is very little security of land tenure and open access land is being used. All households have an extremely low level of human capital in terms of education, knowledge and health to work with, suffer chronic indebtedness and lack accessibility to institutional credit and inputs.

House garden, cropping and forest play complementary roles in the forest dwelling household system: they are an important source of food, both plant and animal, fuel for cooking, house material, etc. The products have mainly consumptive value to households, but some like palm heart, charcoal, açaí fruit and timber are also source of revenue. The outstanding difference between the studied communes in the Várzea and Terra Firme is that Várzea dwellers concentrate on timber and palm heart extraction, while the latter manage a mix of crops, perform shifting cultivation, extract açaí and lianas from the forest.

In all activities the investment required is low. Material inputs are few and can be readily obtained even in isolated areas. But, it also produces little returns. The mix of these three production sub-systems (house garden, cropping and forest extraction) makes sustenance a characteristic feature of both, the Várzea and the Terra Firme small-scale production systems in the study locations. It is evident that cash and non-cash are aggregated meaningfully, so the choice is simply between leisure on one hand and all other forms of income on the other. The gross annual household income varies between less than 100 USD up to more than 800 USD, whereby the Várzea households generate by far more than the households of the investigated Terra Firme commune. The generated income originates from on-, out- and only little from off-farm activities.

5. Marketing structure

The initial market research involved the main markets from both areas, Várzea (Breves) and Terra Firme (Belém), tracing out the marketing chains. The marketing chains of the products are established and operate within the existing market infrastructure in a common way (Figure).

![Marketing Chain Diagram]

Source: Field Research, 2001

**Figure:** Marketing chain in the Terra Firme and Várzea communities
The diagram shows the marketing chain that starts at the dweller household level; processing the products when possible to add extra value or selling the production direct to the middleman, market traders or to the local industries, or brought directly to the market. A general characteristic is that middlemen dominate all the marketing activities of the dweller households, which relies on a long-term historical development.

6. Conclusions

All components of the forest dwelling household system are closely inter-linked, interdependent and functionally inseparable. The forest dwelling (household) system is a complex unit, characterised by objectives (consumption and/or commercialisation), productive activities (house garden, cropping and forest extraction), and also constraining factors (debt dependence, distance to the market, available natural resources, etc.). The forest dwellers in Várzea and Terra Firme are practising what they inherit and imitate from their parents. Therefore, “subsistence and the traditional way of farming” are still strongly impressed in their mind. Households in the studied areas have a rather low standard of living and actually many of them are struggling for survival.

Besides facing a lack of support, the households are still encountering serious difficulties because of many infrastructure constraints (lack of transportation, poor access to the market, unavailability of electricity, lack of drinking water, illiteracy, unpredictable prices, lack of capital and others). A number of facts also show that the households are about specialising their “farm”. All activities contribute to meet the sustenance of having staple food and other necessities. This makes the households engage in the “barter economy” and “cash-economy”.

The produce in Terra Firme and Várzea is traded in low quantities with preferably short marketing chains. The trade in studied communities from Várzea and Terra Firme regions is criticised as inefficient, inequitable, and extremely underdeveloped. Marketable products provide the opportunity to complement household income, as well as providing a relief source in times of seasonal and emergency food and cash shortages.

However, the destructive impact of intensified forest extraction prevails researchers and development agencies to search for economically viable, socially accepted and environmentally sound production systems throughout the Amazon basin.