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Making Social Forestry Work: a Comparative Study of Smallholder Reforestation Projects in Paraguay

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Introduction: *Social Forestry on the global agenda and its importance in rural Paraguay*

Although there is no agreed definition on the exact boundaries of this approach, social forestry projects share some common characteristics. They focus on meeting the needs of local people for fuelwood, fodder, timber, NTFPs, contribute to raising income, create new employment and products for the market, enhance local participation, promote site-specific solutions and perform environmental services as reclaiming degraded land for productive use (compare: WESTOBY 1968, GOI 1976 in: FAO 1991, TIWARI 1983, FAO 1994 in: LACUNA-RICHMAN 2012, LACUNA-RICHMAN 2012).

Social forestry has been particularly promoted since the end of the 1960s and beginning of the 1970s with the emphasis on various issues as equitable growth, income distribution, environmental awareness and local self-organization (JOLLY 2002). It challenged the previous dominant growth ideas based on large scale top-down forestry projects adding value to the national economies but overlooking local priorities. In tree plantations, social forestry meant a shift to focus on multiple local needs (i.e. in popularizing agroforestry systems) and to promote rather small-scale plantations for smallholders with locally desirable species.

An example of such social forestry projects was *PMRN - Proyecto de Manejo Sostenible de Recursos Naturales* (Project for Sustainable Management of Natural Resources) implemented in poorest regions of Paraguay by the German Agency for International Cooperation (GIZ and its predecessor GTZ). It involved, among other means, the assistance for smallholders in the establishment of forest plantation plots (PMRN 2009; 2011). The particular importance of promoting plantation activities within the country results from the fact that Paraguay has one of the smallest forest plantation areas in Latin America, currently estimated at 66 000 hectares (INFONA 2011) and that in the second half of the 20th century Paraguay experienced a dramatic deforestation rate reaching 2.65% per year (QUINTANA AND MORSE 2005: 67). From the beginning of the project in 2003, one of the activities has been the reforestation with both exotic and native species. It is estimated that under the project's collaboration with small producers, about 3500 ha of land has been reforested (mainly with *Eucalyptus spp.* and *Melia azedarach*). The beneficiaries of the project received plants and training. The plantations were established mainly for timber and fuelwood production, along with some additional own use by the producers (source of local construction material etc.). It has been estimated that the production potential of fast-growing plantations in the project is about 20m³ha⁻¹year⁻¹. Although the project has been evaluated positively by the stakeholders (PMRN 2009), this study shows a significant role of the

local initial institutional setup that affects the project's immediate results and especially its long-term effects.

Material and Methods

The research focused on asking *how and why in the same region and operating under the auspices of the same external project (PMRN) are the results of small-scale social plantations significantly different?* Two different settlements with smallholders involved in the project were selected as case studies. The first case study of the community *Cuatro Vientos* (District Villa del Rosario, Department San Pedro), organized in the form of a locally active and successful cooperative of the producers, had shown signs of visible success within the PMRN scheme. In the neighboring *Chore* (communities *15 de Agosto* and *Santa Librada*, District Chore, Department San Pedro), the local farmer groups were investigated as representative for limited benefits of external project assistance. In the first case, 13 households (20% of farmers benefiting from the PMRN in Cuatro Vientos) were selected with stratified sampling and an equivalent group of 13 households were selected according to the same principle in the Chore. Both sites had the same background conditions regarding their geographical proximity, climate, average farm size, crops cultivated, market access, level of education, poverty thresholds, income and family model. For each household detailed interviews were conducted with the owners, additionally all the plantations have been visited and discussed on-site. Local experts in both areas were selected for semi-structured interviews.

Variation in project outcomes, local perceptions and future continuation: Selected results in comparison

A significant difference in the project outcomes and in the farmer's perceptions after the project ended could be observed. The attitude to the continuation of the project differed significantly in both case study areas. While in the first case study smallholders were treating the project as a starting point for a continuous local activity, farmers from the second case study were passive and mostly waiting for a new external project, so they could continue tree planting. The first community has its local nursery selling to the villagers and the larger local market (neighbouring Mennonite colonies), while in the other communities people are mostly waiting for seedlings to come from outside (from a development project, government, or local business such as the nearby tobacco factory). The following statement illustrates a common attitude in the first community with good local organization:

Now we learn to value our resources (...) before people used to think only in a short term. We are trying to change it, teaching children to reforest is a good start" (respondent I-13).

Conversely, very different statements were repeated by the poorly organized farmers in the second area:

"We don't have conditions; it all depends on training and projects" (respondent II-7).

While farmers in the first analyzed group adopted a proactive stance, being equal partners in the project, their counterparts remained passive and perceived the project in the giver/receiver logics.

The figure below shows that positive opinion on tree planting was in both cases identical – 92% of farmers liked the general idea to reforest part of their land. Thus it can be excluded, that tree planting in the first case was more successful due to some specific local values. Both case study groups showed identical openness towards the project and value reforestation. However all the factors related to the project outcomes, show significantly better results of the community Cuatro Vientos, characterized by well-developed social and institutional structures. All of the respondents in the first case study claimed to have access to training, while in the second case study it was only 2/3 of the respondents. Cooperation in the community has been assessed as positive by the vast majority of the respondents in the first case study (92%) and only less than half in the second case. A great majority of the smallholders in the first case will encourage family continuation in tree planting (teaching their children to do so and training them), while in

the second case only 54% will do so. A significant difference has been observed regarding the market access possibilities for timber coming from the plantations. In both areas a very common strategy for a farmer to sell his timber is just to sell it on farm to the ambulant logger, who is dictating the price. This practice is usually harmful for the tree owners, who get a very limited price for their trees compared to the market prices.¹ In the first village 70% of farmers took a proactive role to look for a good price, while only 30% in the other area were making such efforts. This may be explained with the information access of farmers in the first case, who even when commercializing individually had more knowledge on markets and prices due to the substantial information exchange in their cooperative. Also several farmers from the first case study are thinking on adding value to their wood – i.e. by producing sawn wood or learning about carpentry. The largest discrepancy was in the perception of village infrastructure development. In the first case 77% of respondents are positive on the infrastructure changes for a common benefit in their village seeing positive outcomes of organization (such as joint road maintenance). In the other case only 15% had a positive opinion about the village infrastructure developments – another factor that may limit the timber market access.

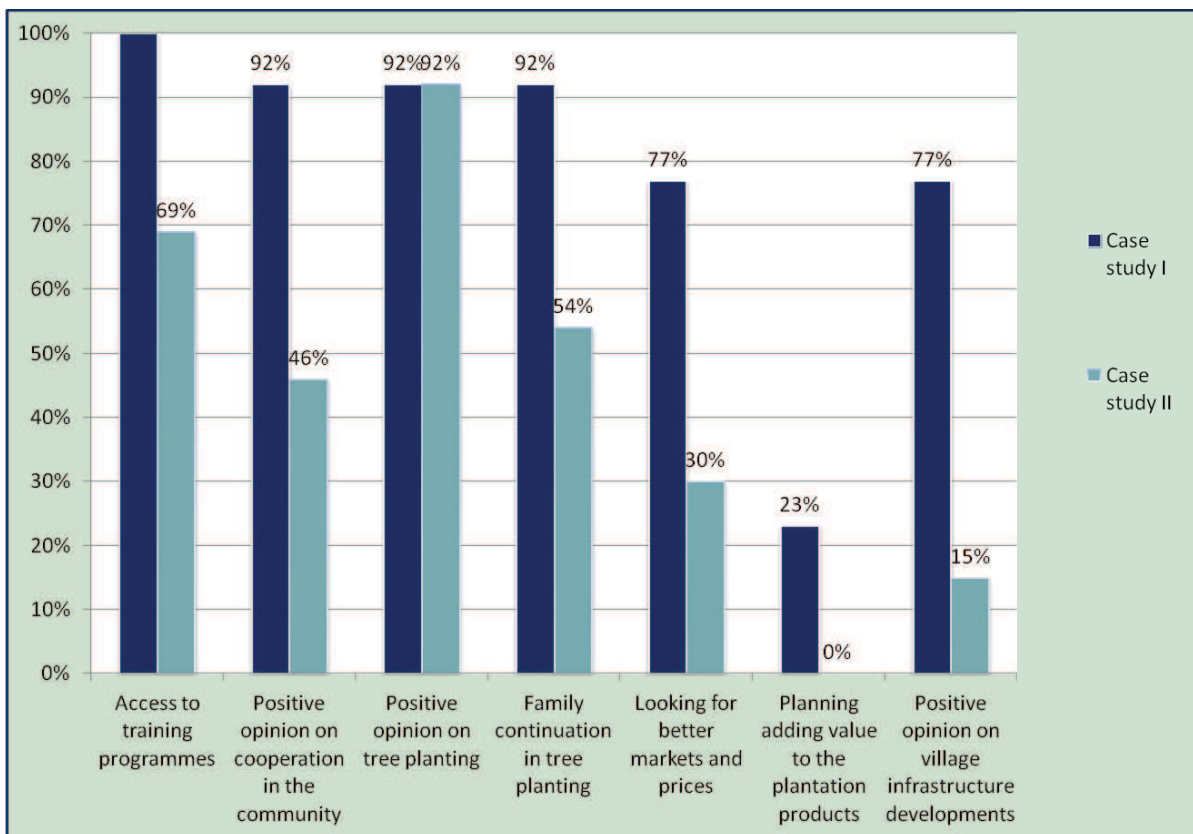


Figure 1 – Local perceptions and future continuation of smallholder tree plantations in two case study areas

Based on the interviews as well as on-site observation, it is clear that the project outcomes vary because of the different institutional context in which the project was implemented. In the first case study the project affects the community through the existing institutional layers – a developed structure of the farmers’ cooperative and neighbourly development assistance project with the local Mennonite colony. The project itself has more visible socio-economic (transfer of knowledge, better market access) and environmental results (rising awareness on deforestation, environmental degradation, diversification). The existing local institutions help to assist the smallholders with knowledge and tools. Reforestation quickly integrated in the local land use

¹ The price difference can be several-fold even between 50 000 and 3 000 000 Guarani for a log of *Melia azedarach* depending on the diameter and shape (respondent I-10).

patterns and options for further development are considered (scale-up, carpentry and other industries in the community). Additionally people learned that trees could play the micro-finance role of “saving accounts” and are often planted with defined purposes. This was achievable due to the institutional “security” provided by the cooperative – allowing for better market access, securing day-to-day profit from agriculture and lowering the individual costs of participation in the new productive sector of small-scale forestry.

In the second case study the project directly affected the farmers and imposed some temporary organization to receive training and tools. That organization (farmer committees) are not rooted and not working well, farmers are conflicted with the neighbors and do not see the benefits of cooperation. In an economically insecure environment they are not willing and not able to take additional risks to scale-up their tree plantations and fully benefit from the project opportunities. In this context the project outcomes are also positive but definitely short-term. Most of the farmers claim they have no capacity for project’s replication. The economic outcomes are limited as the farmers sell directly to loggers and rarely look for better markets and prices. The environmental awareness is limited; tree plantations play the role of yet another “crop”, but not very profitable and not seen in a long-term perspective.

Conclusions and Outlook

Social forestry is a promising approach that could combine the positive socio-economic and environmental impacts without externalities that large-scale top-down forestry projects tend to produce. Of course it has its own challenges as the large number of individual actors, difficulties in the transfer of silvicultural knowledge, market access, and competition with other land uses. Another challenge pointed by this research is the role of the local institutions, which play a significant role even in technical issues like tree-planting and have wide reaching effects.

For social forestry to work more effectively, a functioning institutional “nesting” and a broader developmental approach is necessary. While in the first case, the reforestation project provided a “window of opportunity” and an additional boost for the smallholder livelihoods, which can be further replicated, in the second case the presence of the project (app. 5 years) was too short to create long-term benefits. Local institutions “store” the knowledge and innovation acquired through the project. Otherwise – these can be lost as was already the case with forestry projects conducted in this area in the 1980s. Furthermore, local organization constitutes an economic “umbrella” which reduces the economic vulnerability of individual smallholders. But the local organization needs to emerge in a bottom-up participatory process and be a process of learning itself. Here already existing local structures such as cooperatives, churches or schools (the latter played a community-building role in Cuatro Vientos) have a significant role to play. Top-down administratively built institutions might not have similarly positive impact because of lower levels of trust, participation and cooperation.

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