Internal transaction costs of indigenous community forest enterprises in TCO Tacana, Bolivia

Rutger de Wolf

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Supervisors:
Ir. C.E.B. Benneker
Dr. ir. K.F. Wiersum

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Two are better than one, because they have a good reward for their labour.

(Ecclesiastes 4:9)

Dedicated to my Father, Saviour and Helper
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<td><em>Agrofort</em></td>
<td>Agrupación Agro Forestal de Tumupasa (Agroforest Group of Tumupasa)</td>
</tr>
<tr>
<td><em>Apiat</em></td>
<td>Agrupación de Pequeños Industriales Agro-silvo-pastorales de Tumupasa (Group of Small Agroforest, Silvicultural and Pasture Industries of Tumupasa)</td>
</tr>
<tr>
<td><em>BOLFOR (I &amp; II)</em></td>
<td>Proyecto de Manejo Forestal Sostenible (Bolivia Sustainable Forestry Project)</td>
</tr>
<tr>
<td><em>CADEFOR</em></td>
<td>Centro Amazónico de Desarrollo Forestal (Amazonic Center for Sustainable Forest Enterprise)</td>
</tr>
<tr>
<td><em>CEDEC</em></td>
<td>Centro de Defensa de la Cultura (Center for Cultural Defense)</td>
</tr>
<tr>
<td><em>CFE</em></td>
<td>Community Forest Enterprise</td>
</tr>
<tr>
<td><em>CIPTA</em></td>
<td>Consejo Indígena de Pueblos Tacanas (Indigenous Council of the Tacana People)</td>
</tr>
<tr>
<td><em>El Carmen</em></td>
<td>Agrupación Forestal El Carmen (Forestry group El Carmen)</td>
</tr>
<tr>
<td><em>Macahua</em></td>
<td>Unidad de Producción Forestal de TCO Macahua (Unity of Forest Production of TCO Macahua)</td>
</tr>
<tr>
<td><em>NGO</em></td>
<td>Non Governmental Organisation</td>
</tr>
<tr>
<td><em>TCO</em></td>
<td>Tierra Comunitaria de Origen (Original Community Land)</td>
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</tbody>
</table>
Preface

This report is the result of a field study in Bolivia in 2004, and counted as an MSc-thesis at the department of Forest and Nature Conservation Policy of Wageningen University. It was a great pleasure to stay for a few months in Bolivia, mostly in the tropical lowlands, surrounded by a sea of forest and amidst local (most indigenous) people. Though the weather was sometimes humid and hot, facilities not more than a few hours of poor electricity, food three times a day rise, and the atmosphere rather lonely, memories are fantastic and I wouldn’t have missed it for the world.

I want to thank my supervisors Charlotte Benneker and Freerk Wiersum for their supportive criticism. Though I sometimes almost lost my heart when texts returned in red, I gratefully appreciated their comments. Besides, I really appreciated Charlotte’s supervision and arranged facilities in Bolivia. Without her support on the spot, nothing would have grown out of the project. Thanks to all the background information she gave me, I was able to implement this research without having to discover the complicated history and struggles that preceded the current stage of forestry in Bolivia. I also want to thank the Alberta Mennega Stichting who gave me a scholarship to support my financial needs for this overseas operation. It was a very welcome support.

Besides I want to thank all the people of Tumupasa, San Silvestre, Ixiamas, Macahua and Rurrenabaque who made it possible to carry out this study and who supported me in my activities and stay in the area. In specific I want to thank CIPTA for the possibility they gave me to carry out this research in TCO Tacana. I realise that without all these people I would have been nowhere. Por lo demás, quiero agradecer a Roxana, mi tutora castellano. Sin sus lecciones no habría comprendido nada de todos los encuestados.

I attribute a warm, grateful heart to Greetje Renkema, who supported me all the time in a personal way, to overcome struggles during my research and who stimulated me to continue. Last but not least, I want to thank the Lord to whom I dedicate this report. I promised Him not to do this project on my own, but to walk side by side, and He gave me the support and wisdom to fulfil this whole project.

Rutger de Wolf
July 2005

Pictures on the front page are made by the author. Background picture: trunks harvested by Apiat are loaded on a truck. Small pictures from top to down: trunks compiled at a sawmill in Tumupasa; little boy helping in the chaco; valuation method – distributing maize grains among land-use practices; family in Macahua in front of their house; community meeting in Macahua.
Preface
Summary

Many indigenous community forest enterprises (CFE) have been initiated in lowland Bolivia over the last few years. Their performance has not been without problems, both internally and externally induced. As CFEs are community based and participatively organised, the process of organisation can be expected to receive more inputs. The kind of costs implied in these organisations and what induces and reduces them, is the central theme of this research.

The level of participation of members and their presence during activities concerning decision-making and implementation determines to a certain extent the degree of internal transaction costs. These costs are considered to be influenced by three factors: (1) group size and heterogeneity, though it does not have an unambiguous effect, as it depends on the developed strategies to cope with these characteristics; (2) social capital (in terms of relations of trust, reciprocity and exchange, common norms, rules and sanctions, and internal networks and groups), considered as an appropriate indicator for the internal strength to overcome collective action problems; and (3) land-use valuations, which are changing over time as practices are changing and might influence the performance of a CFE: highly valued practices are considered to be given more attention than others. The objective of this study is to identify and clarify the internal transaction costs of CFEs and the factors and processes that influence these costs.

Four CFEs in Northern Bolivia were selected, of which approximately 10 members per CFE were interviewed by means of a semi-structured interview; also a valuation method was applied to determine their land-use valuations. Secondary literature and participant observation provided additional information.

The selected CFEs are in different stages of development. A starting CFE especially suffered from low attention of members for their CFE and a lack of knowledge and experience to manage it. Another CFE does profit from existing networks and a willingness of members to cooperate, though a lack of knowledge and experience, and varying ideas are obstructing the performance. A third CFE is longer established, but suffered from many internal and external problems, these are attempted to be restored. They have to cope with high relations of distrust and members give it varied attention, resulting in a diverse group, with many ideas and low turnouts. The last CFE is more advanced and introduced a contract system to cope with insecure participation levels. Its success might be attributed to the relatively small and homogenous group, and a high level of social capital. It resulted in a high priority for the CFE in comparison with other land-use practices.

Especially the new way of collaboration, which was yet unknown to these people, causes difficulties and problems. As a consequence, the CFEs have to cope with delays and need to spent time and efforts to resolve these problems. Conflicts concerning financial issues are
crucial, causing a suspicious attitude of many. It is however remarkable that relations of trust improve after a period of collaboration, except when CFEs had to deal with internal problems and conflicts. Responding adequately to internal transaction costs proves to stimulate the performance in reducing future costs.

Many other studies show comparable results, indicating the importance of social capital, though this is seen as a dynamic asset that can develop in time. Land-use practices are changing over time, as people are especially interested in economic interesting activities. The influence of the land-use valuations on the performance of a CFE consequently depends on the successes achieved. The influence of group size and heterogeneity is not unambiguous. Though these factors influence the participation of members and trigger internal transaction costs, cooperation among members and reacting on transaction costs result in building up social capital, reducing the influence of heterogeneity and offering the members an attractive alternative way of income. Especially this process of learning needs further attention in future research and implementation of communal projects.
1 Introduction

1.1 Background information

Forests are important for humans for their economic, cultural, historical, aesthetic, recreational and religious values and are used in different ways. Timber and other forest products are important economically both for local and international markets. However, in the last half-century forest clearings and colonisation (the major cause in Latin America) has resulted in massive deforestation, which has many social, economic and ecological effects, resulting in many negative consequences (Hui 1997, Bakker 1993). One approach to resolve the problem of deforestation has been the management of forests by national governments. However, since state management of natural resources often has failed, devolution of management functions to local user groups have gained increasing importance in developing countries (Wiersum 1997, Godoy & Contreras 2001, Agarwal 2001, Birner & Wittmer 2000). Management authority over natural resources has been transferred from the public sector to the collective action sector, enhancing management efforts by local communities in order to reduce government bureaucracy, democratise decision-making, enhance equitable distribution of benefits from the forest, and make regulation more effectively. (Messerschmidt et al. 1993, Kaimowitz et al. 1999, Edmunds & Wollenberg 2003, Birner & Wittmer 2000). Collective forest resource management supposes the importance of involving or linking local communities in the direct management and control of forest resources (Messerschmidt et al. 1993).

Forest policies in Bolivia have experienced similar changes. During the last two decades, there was a growing concern that Bolivia’s forests were increasingly under threat and that there was a need to utilise them more efficiently in order to promote economic and social conditions that were compatible with environmental quality. Factors that were considered to play a role in the degradation of the forest resources of the country, are government policies, the use of forest resources for political patronage as well as illegal exploitation (Contreras-Hermosilla & Vargas Ríos 2002). During the mid nineties the government began to organise efforts for improving governance, also due to a strong push for decentralisation and for recognising the traditional rights of indigenous populations and local communities. The forest people dependent on its resources for their livelihood were essentially separated from its benefits, unable to enjoy the value of economic goods extracted from it (Messerschmidt et al. 1993, Kaimowitz et al. 2000, Rumiz & Aguilar 2001, Contreras-Hermosilla & Vargas Ríos 2002).

In 1996, the legislature approved an Agrarian Reform Law, and created the National Agrarian Reform Institute (INRA) for its implementation. This law opened up the
possibilities for indigenous people and communities to demand collective land rights over traditionally occupied areas denominated a TCO (Tierra Comunitaria de Origen, an indigenous territory), which gives them exclusive right to a sustainable use of the natural (and extensible) resources (Kaimowitz et al. 2000, Contreras-Hermosilla & Vargas Ríos 2002, Benneker 2004 and 2005, Cronkleton forthcoming). The new Forestry Law of 1996 introduced policy and institutional reforms based on intensely participative processes and introduced the Forest Superintendency as a key institution in the implementation of the new forestry regime. The Superintendency is in charge of granting concessions and permits for the use of public and private forests, approving management plans, conducting audits, collecting and distributing fees, and other activities related to law enforcement (Rumiz & Aguilar 2001, Contreras-Hermosilla & Vargas Ríos 2002). This new Forestry Law gives the residents of TCOs the rights to market oriented forest management. However, if they wish to sell forest products, they must follow a series of administrative steps and technical guidelines defined by the regulations of the same law. These steps include requirements such as an outlined plan how to organise the communal enterprise, and the preparation of a forest management plan that must be submitted for government approval (Kaimowitz et al. 2000, Contreras-Hermosilla & Vargas Ríos 2002, Benneker 2004, Cronkleton forthcoming). From 1998 until 2004 the Forest Superintendency approved 39 market oriented forest management plans submitted by indigenous communities (Benneker 2005, see also appendix 1). These market oriented forest management regimes will be further referred to as community forest enterprises (CFE) because of their collective character and commercial orientation (Benneker 2004).

1.2 Problem statement

Some newly instituted CFEs seem to be successful both economically and socially (Enever 2002). Others face difficulties during the implementation of the forest management plan. McDaniel (2003a) argues that part of the difficulties originate from conflicts between the indigenous culture and the values that necessarily accompany market-based development efforts. He observed that in Lomerio most community members were not interested in becoming loggers or workers at a sawmill, they were farmers and they wanted the project to reflect their interests. In other situations conflicts arose due to conflicting interests and local elite that consolidated their own power (Kaimowitz et al. 1999 and 2000). Although the last two types of conflicts were not described of specific CFEs but of municipality situations and indigenous organisations, these conflicts are likely to exist in CFEs because of the comparable situations and same stories about conflicts between indigenous people and colonists are even known of several CFEs (Benneker pers. comm.). As most forest enterprises tend to focus on commercial timber exploitation (Benneker 2004), conflicts with regard to other interests also might thwart the realisation of the CFE, as became clear from a
study in TCO Tacana\(^1\), where women expressed less appreciation for the forest management activities than men as less attention was paid to agricultural production for subsistence.

On the one hand, there is no doubt that forests are a major source base for income and a base for the development of indigenous communities. On the other hand, most of these communities face organisational weaknesses, lack of technical and managerial knowledge as well as a shortage of financial resources needed to achieve levels of efficiency to compete in the market. The management of forest resources for commercial purposes was hardly part of the indigenous community culture, especially not the communal way, and therefore they have to overcome internal limitations (Kaimowitz et al. 1999, Contreras-Hermosilla & Vargas Ríos 2002, McDaniel 2003b). Benneker started in 2003 with a study on the impact of the institutional environment on business strategies of CFEs in lowland Bolivia (see Benneker 2004). Though she focuses mainly on the facilitating and limiting factors related to the surrounding environment of the CFEs (market, state and civil society) internal dynamics are also likely to influence the performance of the CFEs. This will be the focus of this research, which will function as a supplementary research to Benneker’s study.

Hardly any studies exist on the successes and failures of CFEs in Bolivia, some studies mention the CFEs just circuitous (see Kaimowitz et al. 1999 and 2000, Contreras-Hermosilla & Vargas Ríos 2002), or more in general (Nebel et al. 2003, Cronkleton & Albornoz 2004, Benneker 2005). The only CFE specific studies are from McDaniel (2003a and 2003b) and Benneker et al. (forthcoming), apart from some internal reports from NGOs as the study in TCO Tacana. Therefore little is known about the internal strengths and limitations of the CFEs in Bolivia. Ostrom (1999) argues that an understanding of both the strengths and limitations of self-governance of forest resources is needed to improve the progress of community forestry. CFEs differ from private enterprises mainly because of their collective character, but the question is how they deal with this collective character of their enterprises and how this influences their performance. The costs of organisation might be higher for the CFEs than for private enterprises as for example all community members should agree on management decisions. What factors can be identified that influence these costs of organisation and what are the processes through which they influence the performance of the enterprise? Research is needed to give insight in these processes to recognise the challenges the communities face in dealing with the collective character of commercially oriented forest management enterprises and to identify and clarify the factors and processes that influence (facilitate or obstruct) the performance of the CFEs. This report aims at providing insight in these processes.

\(^{1}\) Elaborated by Z. Lehm and M. Escovar, resp. from The Nature Conservancy - BOLFOR II and WWF Wildlife Conservation Society. Results presented in September 2004 during an internal meeting at BOLFOR II, named: “Aplicación de una metodología participativa para evaluar los impactos del manejo forestal en sistemas socio – organizativos.”
1.3 Report structure

The report is structured as follows. In chapter 2 the scientific context will be elaborated and a conceptual framework will be presented. On the basis of this framework, the specific research objective and the research questions will be described in chapter 3. In chapter 4 the methods will be elaborated that are used to acquire the information needed to answer the research objective. A description of land-use in lowland Bolivia will be given in chapter 5. The results will be presented in two chapters: chapter 6 will present four CFEs with accompanying characteristics as well as factors and processes that impact on them, while chapter 7 will deal with a comparison of these CFEs. In chapter 8 a reflection will be given on the representativeness of empirical information, the theoretical context, and the methods used. The report will end in chapter 9 with conclusions and recommendations for further research and practical application of findings.
2 Theoretical background

In this chapter theoretical issues related to internal aspects affecting the performance of CFEs are discussed. First in paragraph 2.1 the concept of participation is discussed. Group participation involves costs for joint deliberation and decision-making; these costs can be conceptualized as internal transaction costs and will be discussed in paragraph 2.2. Two major factors impacting on participation and likely influencing the internal transaction costs are ‘social capital’ and ‘group size and heterogeneity’. These factors are discussed in paragraphs 2.3 and 2.4 respectively. Also the local land-use strategies and the valuation of different types of land-use by the community members are expected to be a factor influencing the internal transaction costs and will be elaborated in paragraph 2.5.

2.1 Participation

Rural community forestry groups represent one of the most widespread and rapidly expanding attempts at participative development (Agarwal 2001, Edmunds & Wollenberg 2003). The characteristic of such a group that is self-governing the forest resource, is one where major users of the forest, are involved over time in making and adapting rules within collective-choice arenas regarding the inclusion or exclusion of participants, appropriation strategies, obligations of participants, monitoring and sanctioning, and conflict resolution (Ostrom 1999). This can create different levels of participation, but before elaborating these levels, first a clearer concept of participation has to be made.

In literature, participation is often related to development projects in which its central idea is inclusiveness. The World Bank for example defines participation as “a process through which stakeholders influence and share control over development initiatives and the decisions and resources which affect them” (1996:xi). A more simplified definition is given by Agarwal, who describes it as “the inclusion in decision making of those most affected by the proposed intervention” (2001:1). Effective participation seems to require people’s involvement not just as individuals but as a collectivity, such as a village community. In theory such projects are meant to involve and benefit all sections of the community. However, in practice they often exclude significant sections, such as women or outsiders living in the same area or community. These ‘participatory exclusions’ (exclusion within seemingly participatory institutions) can affect both equity and institutional efficiency, and therefore raise transaction costs. E.g. exclusion of women from decision-making can slow down the enthusiasm and the progress of the project (Agarwal 2001).

Participation has a broad range of levels. How these levels are formulated, depends on the objective of participation: (1) participation as an approach, an ideology, a specific ethos for community development; or (2) participation as a method, a set of guidelines and practices of
involving communities or the general public in specific planning activities (Buchy & Hoverman 2000). However, effective participation is seen by Agarwal (2001) as important both in itself, as a measure of citizenship and a means of empowerment, and for its potential effects on equity, efficiency and sustainability. The role of power is central to participatory processes. It is also one of the major reasons why people may decide to get involved in forest management issues, as they will strengthen their position and obtain more power. Hence, nature and levels of participation\(^2\) are often measured in terms of power and roles that the different stakeholders have in the decision-making process (Buchy & Hoverman 2000). Table 2.1 gives a range of levels, elaborated by Agarwal (2001). At its narrowest, participation can be defined in terms of nominal membership, and at its broadest in terms of a dynamic interactive process in which the disadvantaged have voice and influence in decision-making (Agarwal 2001, see also Pimbert & Pretty 1995, Colfer & Wadley 1996). Agarwal (2001) argues that achieving effective participation would involve a shift from the lower to the higher levels, with levels being defined here not by how a group is initiated but by the extent of people’s activeness. However, there are limits to what participation alone (even if interactive) can achieve in terms of equity and efficiency. Other aspects of participation, as group size, heterogeneity and social capital, have also a force in achieving or slowing down the functioning of a community enterprise (Agarwal 2001).

\[\text{Table 2.1 Typology of participation (Agarwal 2001)}\]

<table>
<thead>
<tr>
<th>Form / level of participation</th>
<th>Characteristic features</th>
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<tbody>
<tr>
<td>Nominal participation</td>
<td>Membership in the group</td>
</tr>
<tr>
<td>Passive participation</td>
<td>Being informed of decisions \textit{ex post facto}, or attending meetings and listening in on decision-making, without speaking up</td>
</tr>
<tr>
<td>Consultative participation</td>
<td>Being asked an opinion in specific matters without guarantee of influencing decisions</td>
</tr>
<tr>
<td>Activity-specific participation</td>
<td>Being asked to (or volunteering to) undertake specific tasks</td>
</tr>
<tr>
<td>Active participation</td>
<td>Expressing opinions, whether or not solicited, or taking initiatives of other sorts</td>
</tr>
<tr>
<td>Interactive (empowering) participation</td>
<td>Having voice and influence in the group’s decisions</td>
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It is often implicitly assumed that the more people participate in development projects, the better the outcome for the community will be, because of higher acceptance of the project (Buchy & Hoverman 2000). An increase of participation of people however can also increase the internal transaction costs due to an increase in time and costs for decision-making. To identify the effects of participation on the performance of the CFEs, especially the nature and level of participation need to be investigated, as they trigger the internal transaction costs.

\(^2\) Also referred to as: nature and level of involvement. ‘Nature of involvement’ defines the manner of user participation in the resource management, while ‘level of involvement’ is used to understand the extent of people’s involvement (Sekher 2001).
2.2 Internal transaction costs

Transaction cost economics as developed by Williamson is based on two assumptions: (1) the capacity of human beings to formulate and solve complex problems is limited, human beings are bounded rational, and (2) they sometimes display opportunistic behaviour, trying to exploit a situation to their own advantage. Transactions can take place across markets or within organisations, resulting in costs of market transactions and costs of internal transactions (the last being the focus of this study). Whether transaction costs for a particular transaction will be high or low depends on the critical dimensions of that transaction.

Douma and Schreuder (2002, see also Birner & Wittmer 2000) mention the following critical dimensions:

- asset specificity; an asset is transaction-specific if it cannot be redeployed to an alternative use without a significant reduction in the value of the asset;
- uncertainty / complexity; bounded rationality is a problem especially for transactions with a high degree of uncertainty/complexity;
- frequency; the costs of a specialised governance structure are more easily recovered for high frequency transactions; and
- competition between organisational forms; searching the most efficient mode for transactions: in the market or within organisations.

To analyse the functioning of an organisation of natural resource management, it appears useful to consider the transactions related to production and regulation together, but to distinguish between (1) decision-making (planning), and (2) carrying out the activities necessary to implement the management decisions. Accordingly, one can distinguish transaction costs of decision-making (decision costs) and transaction costs involved in carrying out management activities (transaction costs of implementation) (Birner & Wittmer 2000). Though decision-making is not usually considered as a separate type of transaction, this conceptualisation has analytical advantages. In a simple hierarchy the boss takes decisions, however, in an organisation with interactive participation, every member participates in decision-making. Since transfer of information is costly because it takes time to explain things to other team members and information may become distorted when transferred, more time is needed for decision making in participatory organisations. The more because decisions are reached after discussion in the whole group, while in a simple hierarchy the boss alone makes decisions (Douma & Schreuder 2002).

The decision costs are influenced by the following factors: the probability of making ‘wrong decisions’, the costs of acquiring the information which is necessary to make appropriate decisions (e.g. knowledge on natural resources, information on preferences in case of conflicting goals), the damage caused by wrong decisions (e.g. irreversible loss of

1 Douma & Schreuder (2002) elaborate the transaction cost economics in a chapter that is based primarily on Williamson’s work, especially on his two books Markets and Hierarchies (1975) and The Economic Institutions of Capitalism (1985).
biodiversity), and the costs of coordinating decision-making if different individuals or groups are involved (this includes, e.g., resources spent for meetings and settling conflicts, costs arising due to delayed decisions). The transaction costs of implementation are influenced by the following factors: the incentives of those carrying out implementation activities to comply with the management decisions made, the presence of asymmetrical information and the measurability of the outcome, the possibilities to use social control for monitoring, and the damage caused in case of non-compliance (Birner & Wittmer 2000). Both types of transaction costs can be influenced by the personalities of the people involved, opposition between members, wrong or biased information, lack of facilitating skills to bring the group from one stage to another and vagueness about issues of equity and processes (Buchy & Hoverman 2000).

So far, transaction costs were seen as costs for the enterprise, however, not only the (board of the) enterprise is confronted with transaction costs, also participants have to deal with transaction costs. He or she has an interest both as a beneficiary of corporate action and as a contributor to the common project. Each actor therefore has to weigh his interests as beneficiary against those as a contributor. The mix of present and expected interests may vary, according to different current and expected positions of actors. Hence, the individual cost-benefit ratio of participation in collective action is important (Weinberger & Jütting 1999). Table 2.2 gives an overview on costs and benefits from participation in local development groups.

Table 2.2 Costs and benefits from participation in a local development group (Weinberger & Jütting 1999)

<table>
<thead>
<tr>
<th></th>
<th>Direct</th>
<th>Indirect</th>
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<tbody>
<tr>
<td>Sunk costs</td>
<td>Group foundation (time, material, money)</td>
<td>Overcoming resistance of household members</td>
</tr>
<tr>
<td>Permanent Costs</td>
<td>Membership fees</td>
<td></td>
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<td></td>
<td>Material</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Time requirements</td>
<td></td>
</tr>
<tr>
<td>Immediate Benefits</td>
<td>Provision with inputs</td>
<td>Creation of networks</td>
</tr>
<tr>
<td></td>
<td>Credit and saving facilities</td>
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</tr>
<tr>
<td>Longer term Benefits</td>
<td>Increase in production</td>
<td>More and better village facilities</td>
</tr>
<tr>
<td></td>
<td>Increase in income</td>
<td>Access to social services (insurances)</td>
</tr>
</tbody>
</table>

Costs occur when the group is founded; benefits however will only become visible after a certain period of time. Therefore, individuals will have to discount benefits that are expected to bear fruit in the future in order to estimate present worth and compare it to present costs. Direct costs will occur through the need for time, material and money. Indirect costs on the household level occur when other (female) household members have to take over household activities and therefore extract time from other activities. Immediate benefits from participation are the provision of forest or agricultural inputs and access to credit and saving facilities. Another short term benefit is the creation of networks, which facilitate the information flow. In turn, this will reduce transaction costs for the enterprise (see also paragraph 2.3). Long-term direct benefits could be an increase in income and in agricultural production. Collective long term benefits arise through the creation of markets and the
development of further income earning possibilities, as well as the construction of more and better village facilities (e.g. wells, schools, stores) (Weinberger & Jütting 1999).

2.3 Social capital

A major factor impacting on participation and likely influencing the internal transaction costs is social capital. Economic and social systems at all levels – from farms and livelihoods to communities and national economies – rely for their success on the value of their services that flow from the total stock of assets that they control. There are five types of capital: natural, human, physical, financial and social capital (Carney 1998, DFID 1999, Pretty 2002). These assets help to resolve problems that arise within the system. Organisations of the collective action sector, such as community forestry groups, are cooperatively organised and face e.g. the free-rider problem of collective action (non-participating people profiting from the efforts of others in common resource management). Birner and Wittmer (2000) consider social capital as an appropriate aggregate indicator for the extent to which user-managers of natural resources are able to overcome the collective action problem. In this case, the design of institutions that help a group distribute the benefits and costs of their efforts in a way that is perceived to be legitimate, effective, and fair to that group is more important than the particular attributes of the group itself (Poteete & Ostrom 2004). But what, actually, is meant by social capital?

Different authors handle different descriptions of social capital (which is sometimes also labelled as ‘community capability’, see Birner & Wittmer 2000), but repeated aspects are the functioning of social institutions and social norms for attaining productive and sustainable livelihoods (Birner & Wittmer 2000, Colfer & Wadley 1996, Pretty 2002). An appealing definition is given by Brown (1996:1470, cited in Weinberger & Jütting 1999:6) who defines social capital in terms of “relationships that are grounded in structures of voluntary associations, norms of reciprocity and cooperation and attitudes of social trust and respect”. Social capital is created when individuals learn to trust one another so that they are able to make credible commitments and rely on generalised forms of reciprocity rather than on narrow sequences of specific quid pro quo relationships (Colfer & Wadley 1996). Empirical work has shown that social capital has a positive influence on economic growth and household incomes and is an important element for poor people to reduce their vulnerability (Weinberger & Jütting 1999 and 2001). Successful community-based governance structures depend on social capital as it facilitates information exchange and participation, thereby reducing transaction costs and helping to build trust and social cohesion which results in a higher social capital (Birner & Wittmer 2000, Weinberger & Jütting 1999 and 2001). As becomes clear from above, social capital has many aspects. The main aspects will be discussed below.
2.3.1 Relations of trust
Trust lubricates cooperation, and by reducing the transaction costs between people it frees up time and resources for other purposes. Instead of having to invest in monitoring others’ behaviour, individuals can be confident that others will act as expected, trust each other to keep promises, thereby saving both money and time. Trust also creates networks of social obligation and cooperation, in that trusting others commonly engenders reciprocal trust (Colfer & Wadley 1996, Ostrom 1999, Weinberger & Jütting 1999 and 2001, Pretty 2002).

2.3.2 Reciprocity and exchanges
If users relate to one another with reciprocity, this is conducive to an increased likelihood that self-governing associations will succeed. Coleman (1990 in Pretty 2002:49) identified two types of reciprocity in exchange relationships. Specific reciprocity refers to simultaneous exchanges of things of roughly the same value, while diffuse reciprocity refers to continuing relationships of exchange that at any given time may be unrequited, but over time are repaid and balanced. The latter connections in particular contribute to the formation of long-term productive relationships among people. Sustainable development depends on patterns of co-operation that support resource mobilisation and investment over time that create public as well as private goods (Ostrom 1999, Pretty 2002).

2.3.3 Common norms, rules and sanctions
Mutually agreed or handed-down norms of behaviour that place group interests above those of individuals give people confidence to invest in collective or group activities, knowing that others will do so too. They encourage individuals to take initiative with some assurance that their rights will not be infringed. Accepted sanctions ensure that those who break the rules know that they will be punished. These are sometimes called the ‘rules of the game’ (Taylor 1982 in Pretty 2002:49). The value and productivity of these normative orientations is made clear by the consequences of their absence: destructive conflict, lack of sharing and insecurity (Pretty 2002).

2.3.4 Networks and groups
Connectedness among people is a vital aspect of social capital. There can be many types of connection between groups: trading of goods, exchange of information, mutual help, labour exchange, client-patron relations, provision of loans, common celebrations such as prayers, marriages or funerals. Relationships may be one-way or two-way, and they may be long established (and not very responsive to current conditions) or subject to regular revision. Connectedness can be manifested in different types of groups at local levels, as forest management groups. It also implies connections to other groups in society, from micro- to macro-levels (Pretty 2002).
2.4 Group size and heterogeneity

Besides social capital, also group size and group heterogeneity\(^4\) are factors that are impacting on participation. Already in the sixties Olson (1965, in Poteete & Ostrom 2004) emphasised the influence of group size on the fixed costs of collective provision. His assumption was that transaction costs increase with group size, further raising the costs of initiating collective action (Poteete & Ostrom 2004). He hypothesised that group size influences collective action in three ways: (1) larger groups would be less likely to achieve collective action at all, (2) the overall level of collective provision would be lower for larger groups that did achieve collective action, and (3) the degree of sub-optimality in collective provision would increase with group size. Subsequent work generally suggests that group size is less problematic for collective action than Olson thought, but actually, it is hard to make solid conclusions as situations can differ considerably. Nevertheless it is assumed in general that smaller groups are more effective, because, due to its more homogenous character, they have a stronger ability to perform collectively (Baland & Platteau 1999, Ostrom 1999, Poteete & Ostrom 2004). The more because opportunities for frequent interaction increase as the size of the group decreases, and frequent interactions create opportunities to build reputations. Moreover, frequent interaction facilitates mutual monitoring. The reputation building and mutual monitoring associated with frequent interactions suggest that smaller groups foster higher levels of trust. And as stated above, high levels of trust create conditions amenable to collective action. Thus, group size should be negatively correlated with collective action (Poteete & Ostrom 2004).

On the other hand, larger groups may face higher transaction costs, but they also can draw on more resources than smaller groups to engage in collective action. Besides, it seems that larger groups are more likely to achieve their desired outcome, even if the absolute level of collective provision is sub-optimal from the perspective of Pareto optimality\(^5\). The reason for this lies in the marginal costs of the individual. If the marginal costs of individual contributions are sufficiently high, the probability of success increases with group size; larger groups achieve higher levels of collective provision than smaller groups and the effectiveness of a given group increases with its size, if all other aspects remain equal (Poteete & Ostrom 2004).

However, in most cases other aspects do not remain equal. Heterogeneity may occur in endowments, political background, wealth and entitlements, cultural aspects, economic and other interests and differences in experiences with involvement in former organisations.

\(^4\) Although group size and group heterogeneity are two different factors, they are discussed and analysed together because of their interdependent relationship.
\(^5\) Pareto optimality is a condition which exists when it is impossible to make any individual better off without making any other individual worse off (Benschop s.a.). In this case: smaller groups might have a higher level of collective provision at which none of the members will be subject to a negative effect, while larger groups already would have negative effects for at least one of the members at this level of collective provision.
Because increasing inequality redistributes incentives in different directions, this has an ambiguous effect on the ability of users to take steps toward conserving their resources and even toward setting up the required mechanisms. Once a regulatory agency is set up, inequality among resource users tends to make the functioning of regulation proper more difficult. As a matter of fact, the efficiency achieved by regulation decreases with growing inequality, the more so if the regulated outcome has to be acceptable to all users (Baland & Platteau 1999). Therefore it was stated that homogeneity is needed to initiate and sustain self-governance and to facilitate collective action, because it promotes trust and reflects common interests (Ostrom 1999, Poteete & Ostrom 2004). Heterogeneity can have the opposite effect as became clear of examples regarding to forest-use in which conflicts existed between those who are wealthier and those who are poorer (Poteete & Ostrom 2004).

On the other hand, heterogeneity can in the one case have a negative effect while it has a positive effect in another. In some groups for example, differing kinds of knowledge came into conflict, in others, they became a resource for constructing a joint way of seeing the world, a way of defining what shall count as authoritative knowledge (Colfer & Wadley 1996). Further, groups that are heterogeneous may be able to devise institutions that enable them to draw on complementarities to build a stronger foundation for collective action (Poteete & Ostrom 2004).

Thus there is no simple recipe for successful collective action regarding to group size or heterogeneity, neither size nor heterogeneity is a variable with a uniform effect on the likelihood of organising and sustaining self-governing enterprises. This also means that heterogeneity or large numbers of potential participants do not pre-ordain failures in collective action. As a result, it is important to ask how these variables influence other variables as they affect the considerations of those involved in negotiating and sustaining agreements (Ostrom 1999, Poteete & Ostrom 2004).

### 2.5 Land-use valuation

So far, factors are discussed related to social issues or group characteristics (size and heterogeneity). The commercial forestry practice of a CFE however, is often one land-use practice among others, and has to compete with them. The various land-use practices form an interdependent system of natural resource use and management. The types of practices that develop depend on the perceived utility of the natural resources, which is based on their contribution to the livelihood of the forest dwellers (Gerritsen 1995, Wiersum 1997, Henkemans 2001). Furthermore, the land-use strategy involves the gradual extension of natural capital to physical capital (a rich diverse forest, cultivable soils), human capital (abilities and knowledge) and social capital (familiar and village relationships) (Uberhuaga 2001). Due to a scarcity of capital, farmers are obliged to look for efficient ways in utilising
land and labour (Rhoades & Bidegaray 1987). As indigenous forest management practices involve a component in such dynamic strategies, these practices should not be considered to necessarily date from the past, they are often historically and situational dynamic rather than static, as they have gradually evolved in response to changing conditions (Bakker 1993, Gerritsen 1995, Wiersum 1997). Such changes may involve a variety of factors, which can be categorised as follows (Wiersum 1997):

- Changed ecological conditions, such as resource depletion or land degradation;
- Changed technological conditions caused by the introduction of new agricultural and forest harvesting technologies;
- Changed economic conditions such as development of new markets and increased commercialisation, changed demands for forest products and changed opportunities for off-farm employment; and
- Changed socio-political conditions, e.g. population growth and migration, increased interaction with other (ethnic) groups, changed tenure conditions including gradual privatisation or nationalisation of forest lands, new state organisations for forest management and rural development.

Adaptive strategies of indigenous forest dwellers, evolving in response to such changing conditions, have in particular been reported with respect to shifting cultivation systems in rainforest areas. These systems are an important land-use component in lowland Bolivia (see also chapter 5). Because of the dynamic land-use conditions, working or participating in a CFE can be considered as involving a dynamic practice as well.

The reason to shift from one land-use strategy (or several strategies) to an alternative strategy depends on the desired outcomes. Examples of desired outcomes are: improved food security (that enables them to cope with vulnerability), more income (seeking a simple increase in net returns to the activities they undertake), increased well-being (self-esteem, sense of control and inclusion, health status, access to services etc.), and more sustainable use of the natural resource base (although often viewed as a donor objective, it is of course shared by many who recognise the long-term benefits of prudent resource use) (DFID 1999). To reach the desired outcomes, indigenous forest dwellers need to weigh the different options to come to the most suitable and desired strategy (see also DFID 1999). Therefore they consider the importance of different land-use strategies, and most likely they will value the various practices differently: some will receive high valuations, while others will be given little value. This reflects preferences for certain land-use practices, while others are applied less or even abandoned (see also Gerritsen 1995). In several ways this can facilitate or obstruct the development of a new and introduced land-use practice, as the forest management of a CFE. The new land-use practice can possibly conflict with existing norms and values or preferences (see also Hurni 2000). This is the case if hunting is an important activity as food supply or for cultural values, while it is forbidden by the state in newly formed forest management areas. If new land-use practices have aspects that are conflicting with already existing norms, values or ways of living, conflicts within households or
2 Theoretical background

...communities might arise, or the land-use practice might be abandoned partly or as a whole. Preference for other land-use practices can further diminish the priority of new land-use practices. If a new land-use practice as the forest management of a CFE receives a lower valuation compared to existing land-use practice, it will have little or no priority and likely less attention will be paid to this type of land-use. As a consequence this will influence the development of the CFE negatively.

Since the principal land-use practices in Northern Bolivia change somehow from (mainly) shifting cultivation to communally oriented commercial timber exploitation (Godoy & Contreras 2001, Uberhuaga 2001, see also chapter 5), valuations of land-use practices are also likely to change. It might be questioned in which way this process of change in land-use valuation influences the performance of the CFE.

2.6 Conclusion: conceptual framework

In order to analyse the factors that influence the costs of organisation and the processes through which these costs influence the performance of the enterprise, a conceptual framework has been developed that considers the influence of group size and heterogeneity, social capital, and land-use valuation on participation and costs of organisation (see figure 2.1). One of the characteristics of a CFE is the group-based collaboration, which requires the participation of community members in the performance of the CFE, directed by an elected CFE-board. In reality however, some community members might not participate. To focus on the community members that are (officially) participating, these community members are called the CFE-members. Participation of these members can take place in (1) decision-making, and (2) implementation (based on Birner & Wittmer 2000). Both processes will induce costs of organisation that are defined as internal transaction costs, which will again influence the relation between the CFE-members and the CFE-board. The nature and height of internal transaction costs is not only influenced by the nature and level of participation, they are also influenced by several factors and processes. Group size and heterogeneity, and social capital are specific group-related factors influencing the participation processes in a facilitating or limiting way, and therefore triggering the internal transaction costs. Land-use valuation is more related to members’ personal situation and valuation. Their preference according to land-use practices though can have an important influence on participation in the CFE.

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6 The CFE-board (existing of several elected CFE-members) is in charge of the CFE and has the legal responsibility for several subjects, divided among the board-members. Locally this team is referred to as directiva.
Figure 2.1 Conceptual framework: The influence of group size and heterogeneity, social capital, and land-use valuation on participation and the generation of internal transaction costs. The arrows between the CFE-members and the CFE-board indicate the relation between them.
3 Research objective and research questions

The specific objective of this study is to identify and clarify the internal transaction costs and the factors and processes that induce internal transaction costs and thereby affect the performance of the indigenous community forest enterprises.

To attain the goal of the study, the objective was elaborated in the following research questions:

1. What are the characteristics of the CFE-group in terms of ‘group size and heterogeneity’ and ‘social capital’?
2. Which land-use practices do the CFE-members and members of the CFE-board apply and how do they valuate these different types?
3. What is the nature and level of participation of CFE-members in the CFE, both in decision-making and implementation?
4. Which internal transaction costs can be identified?
5. What relations exist between the different factors, processes and internal transaction costs?

The first question will give an answer to the specific group-related characteristics after which their influence on internal transaction costs can be clarified. The second question needs to be answered, to define which role the land-use valuations play in the performance of the CFE. The third question is needed to identify the level of participation as described by Agarwal (2001) and the nature of participation, both in theory and in practice to clarify the state of participation. Which internal transaction costs follow from participation, will be answered through the fourth question. By means of the fifth question the correlation between the identified characteristics, valuations, state of participation and internal transaction costs will be clarified, taking the answers of the previous questions together. In this way the research objective will be achieved.

Because of limited possibilities and time, this research will focus on the internal dynamics of the CFE. Other factors (from outside the CFE or CFE-group) might have a certain influence on the CFE and the members, but will not be elaborated in this report.
4 Methods

In this chapter the methods will be elaborated that were used to acquire the information needed to answer the research objective. Firstly, the research design will be explained in paragraph 4.1. The selection of the research area with different CFEs and the selection of respondents will be discussed in paragraph 4.2 and 4.3 respectively. To collect data for this research, several methods are used that will be explained in paragraph 4.4, and in the last paragraph (4.5) the methods used to analyse these data will be explained.

4.1 Research design

This research is mainly based on the interpretive social sciences paradigm, which considers the world being constituted of multiple realities; this in contrast to the positivist paradigm, in which the world is perceived as being organised by universal laws and truths. Practically this means that the researcher uses a qualitative research methodology in which data are collected from an insider’s perspective rather than from an outsider’s perspective, and requiring the researcher to become part of the social group being studied and to be subjective (Jennings 2001). However, this paradigm was not wholly followed. Several aspects of the positivist paradigm also influenced the study as it was undertaken: it was attempted to be as objective and value free as possible, and no effort was made to become part of the social group. Besides, both the deductive and inductive approaches were used, the first being related to the positivist paradigm and the second to the interpretive social sciences paradigm (Jennings 2001). Based on the theoretical background, several assumptions are made: three groups of factors and processes are considered to influence participation and therefore induce internal transaction costs. This research has to clarify if the assumptions are true for this situation; this is the deductive part of research. However, which internal transaction costs follow from participation and how the factors and processes influence participation and internal transaction costs, is the overarching research topic that will be approached by means of an inductive approach.

This research is principally an explorative study. It explores cases to discover the specific CFE-related processes and characteristics, since hardly any pre-existing data exist in the public arena. As the study also seeks to determine ‘how and why’ the cases operate as they do, this study can also be described as an explanatory study. To explore and explain the subject, a multiple case-study is used, in which several CFEs are selected. To some extent their results will be compared with each other, which gives it a comparative component (see also Jennings 2001).

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7 Deductive reasoning works from the more general to the more specific, while inductive reasoning moves from specific observations to broader generalizations and theories (Trochim 2005).
4.2 Location and selection of CFEs

The research area of this study is the TCO Tacana in the Northern part of lowland Bolivia (department of La Paz). This area was chosen because of the existence of several CFEs in different development stages in a relatively small area with comparable external and cultural characteristics to reduce the number of variables influencing the CFE. Three of eight CFEs in TCO Tacana have an approved forest management plan, including two reputedly well functioning CFEs. The other five are in process to get their forest management approved by the Forest Superintendency (see also appendix 1).

At the start of the study six CFEs were selected: the three CFEs with an approved forest management plan, a CFE that just started and two being far advanced in the approval process. However, it was hard to make appointments or to take interviews because of the absence of respondents, causing a delay in the execution of the research. Therefore actually only four CFEs could be investigated: two with an approved forest management plan, one that just started, and one being far advanced in the approval process. The last one is located near the village Ixiamas, the three others in and near the village Tumupasa (the two biggest villages in TCO Tacana, see appendix 2). The four studied CFEs are *El Carmen, Macahua, Apiat* and *Agrofort*.

4.3 Selection of respondents

As the data would not be analysed with a comparative statistical model that requires an equal amount of respondents for the different CFEs, the total amount of interviews per CFE was based on a percentage, whether the CFEs have approximately the same total number of members or a different number. The sample size of respondents for each CFE was made according to table 4.1. For this selection, only members of the CFE were taken into account. Though the aim was to select respondents by means of a stratified random sample, this manner appeared to be ineffective as many members were often absent. Therefore, in practice houses of members were visited until a member was met. As a result of the absence, not always the number of respondents could be stuck to the numbers of table 4.1, but at least it approached the number. At least two board members per CFE were interviewed (in each

<table>
<thead>
<tr>
<th>Total sample</th>
<th>Suggested Sample</th>
<th>Percentage</th>
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<tbody>
<tr>
<td>&lt;25</td>
<td>10</td>
<td>--</td>
</tr>
<tr>
<td>25</td>
<td>10</td>
<td>40%</td>
</tr>
<tr>
<td>50</td>
<td>15</td>
<td>30%</td>
</tr>
<tr>
<td>100</td>
<td>15</td>
<td>15%</td>
</tr>
<tr>
<td>200</td>
<td>20</td>
<td>10%</td>
</tr>
</tbody>
</table>
case the legal representative\textsuperscript{8} and one or two others). For \textit{El Carmen, Macahua, Apiat} and \textit{Agrofort} respectively eight, twelve, ten and eight respondents were interviewed.

Besides the members of CFEs also some non-official members were interviewed. This group of non-members existed of wives of members and families that were not involved in the CFE. In total nine wives of members and three non-involved families were interviewed. In order to check the opinions of the members of the community and the CFE-board and to derive general information about the CFEs, also an interview was held with a local key informant who was a member of CIPTA\textsuperscript{9}. This is the indigenous organisation representing the Tacana people and agitating for their interests, which also assists the CFEs with non-monetary support to start an enterprise.

\textbf{4.4 Methods for data collection}

Four methods are used for data collection: (1) secondary literature, (2) semi-structured interviews, (3) a valuation method and (4) participant observation. The first method, secondary literature, was used to obtain insight in the requirements for a forest management plan. This was done by glancing through approved forest management plans of CFEs and by reading forestry related publications and leaflets of BOLFOR II and CADEFOR\textsuperscript{10}. These were a kind of manuals for CFEs.

The second method, semi-structured interviews, remains within the genre of a conversation; however, the interviewer has a prompt list of issues, generally with open-ended questions, that focus the interaction (Davis Case 1990, Jennings 2001). The several topic lists for this research were compiled partly by using a study of Thanh \textit{et al.} (2004) and are presented in appendix 3. These lists added some structure to the interview, although the ordering of the discussion about the issues on the list varied between interviews. Therefore the interviews were in general fluid in nature and followed the thinking processes of the respondent(s). Preferably respondents were interviewed individually, though in some cases other members of the family were also present. In such cases the conversation kept focused on the member of the CFE, ignoring the others as much as possible. All interviews were taken in or around the home of the respondents, to avoid a possible influence of a surrounding that could have been strange, inconvenient or threatening for the respondent. During the interview, as much as possible notes were made, no other appliances were used to record the interview.

\textsuperscript{8} In the various CFEs of TCO Tacana, the chief of a CFE is called the legal representative (representante legal), though local people use different names for this function.
\textsuperscript{9} Complete official name: Consejo Indígena de Pueblos Tacanas
\textsuperscript{10} BOLFOR II is an initiative of the US Agency for International Development and the Government of Bolivia to promote the sustainable development of the forest sector with the purpose to contribute to the improvement of life conditions of the population. CADEFOR is a service-based non-profit organisation providing business management support, technical assistance and marketing communications support to the certified forest sector of the Amazonian Basin of Bolivia.
Table 4.2 Research topics for each question topic, following from the research questions

<table>
<thead>
<tr>
<th>Question</th>
<th>Question topic(s)</th>
<th>Research topics</th>
</tr>
</thead>
</table>
| 1        | Group size        | Number of members  
|          |                   | Presence of semi-members or non-members |
|          | Group heterogeneity* | Sex  
|          |                   | Age  
|          |                   | Background (indigenous, colonist or a mix)  
|          |                   | Education level |
|          | Social capital    | Relations of trust  
|          |                   | Reciprocity and exchanges  
|          |                   | Common norms, rules and sanctions  
|          |                   | Networks and groups |
| 2        | Land-use valuation | Types of land-use applied  
|          |                   | Valuation of land-use (as described above) |
| 3        | Participation in decision-making | Involvement in original idea  
|          |                   | Involvement in elaborating the management plan  
|          |                   | Involvement in administration  
|          |                   | Involvement in meetings  
|          |                   | (All in theory and in practice) |
|          | Participation in implementation | Involvement in preliminary activities in the forest  
|          |                   | Involvement in harvesting and additional activities  
|          |                   | (All in theory and in practice) |
| 4        | Internal transaction costs | Respondent’s valuation of CFE  
|          |                   | Internal problems and conflicts |
| 5        | (This question will be answered by means of combining and comparing the previous subjects.) | |

* Heterogeneity with regard to social capital, land-use valuation and participation was extracted from information collected for the concerned subjects.

Afterwards the answers of respondents were written down in a computer (partly in Dutch, partly in Spanish), as much as possible in the way they answered. Specific interview techniques were derived from Emans (2002).

The valuation method was used to investigate to what extent the respondent(s) valuate different land-use practices. Therefore the respondent was asked to name the different land-use practices their household is applying. To keep information comparative between the different respondents, a list was made with different land-use practices on the basis of literature and the first interviews. Next, the different land-use practices were written on paper and the respondent was asked to divide 50 maize grains over the different land-use practices according to the importance for their livelihood. In such a way the land-use practices with a high importance received more maize grains then those with a low importance. The idea for this method was derived from the earlier mentioned study in TCO Tacana and a study in Ethiopia\(^\text{11}\).

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\(^{11}\) A project implemented in 2003 by NTFP Research and Development Project SW – Ethiopia, coordinated by A. Haile, and named: “Rural Poverty Reduction and Forest Protection, through the Development of Non-Timber Products and Community Institutions in three zones of Southern Nations, Nationalities and People’s Regional State, Ethiopia.”
Participant observation involves “intensive fieldwork in which the investigator is immersed in the culture under study” (Patton 1990:67, cited in Jennings 2001:169). A variety of ways exists for participant observation, ranging from complete observer (peripheral membership) to complete participant (complete membership) (Jennings 2001). In this study just in some activities the method of participant observation is applied in the role of a complete observer, namely a visit to a forest camp, forest harvesting activities, communal activities (building houses or changing roofs) and a community meeting, without participating. However, living for eight weeks in the study area also resulted in complementary information.

To get suitable data in order to answer the research questions, several ‘research topics’ were investigated, which are displayed in table 4.2.

### 4.5 Methods for data analysis

As most data is qualitative, the main way of analysis is also qualitative. The answers of respondents will be listed and categorised by the research topics given in table 4.2. After this, a preliminarily conclusion or summary will be given per research topic (for each CFE). If possible, this information will be accompanied by information derived from key-informants and/or participant observation. Subsequently these results will be combined and integrated to demystify the process of influencing factors and processes on the internal transaction costs.

Quantitative information (mainly the land-use valuations) will not be analysed with a statistical model, as the samples for statistical analyses are too small. Moreover, this information is only needed to indicate some rough characteristics, differences and processes of land-use valuation and their presumed influence on the performance of the CFE. However, some figures will be drawn to summarise and illustrate the quantitative results.
5 Land-use in lowland Bolivia

Most indigenous people in Northern lowland Bolivia base their subsistence on an integrated land-use strategy: shifting cultivation, supplemented by hunting, fishing, the collection of wild plants, and timber harvesting. Gathering used to be important, though nowadays it is partly substituted by other activities that imply less mobility into the forest (Godoy & Contreras 2001, Uberhuaga 2001). This chapter will describe the various land-use practices in lowland Bolivia. An outline will be given of the different land-use practices (paragraph 5.1), the importance of non-timber forest products (paragraph 5.2), and the development of forestry (paragraph 5.3). In paragraph 5.4 an overview will be given of the different land-use practices as present in the study area. The information of this chapter is derived both from literature and from findings of this study.

5.1 Land-use practices

The land-use system of indigenous people in Northern lowland Bolivia is mainly based on the existence of a forest rich in resources, and has been practiced for centuries by means of shifting cultivation (Henkemans 2001\textsuperscript{12}). This is a system in which relatively short periods of continuing cultivation are followed by relatively long periods of fallow. If done in a proper way, the forest can be utilised without affecting the ecosystem irreversibly (Pietarinen 1989, Bakker 1993). The indigenous people are living in permanent villages, with their cultivated and fallow lands covering a fairly large area around the settlement. The distance from a person’s dwelling to his main cultivated area may become considerable, when the productivity of land in the immediate vicinity of the village declines (Pietarinen 1989).

The indigenous people distinguish different agro-extractive zones in their natural environment, on the basis of geographical and biophysical characteristics, the exploitation history of the vegetation, and on the distribution and density of useful and non-useful plant species. In their classification the forest dwellers do not make a clear distinction between wild or cultivated species, but do differentiate between useful species (that are either wild forest plants or exotic and cultivated plants) and non-useful species (wilderness and weeds). The same is true for animals that contribute to their livelihoods or that are considered pests. The perceived utility of the natural resources is thus based on their contribution to the livelihood of the indigenous forest dwellers (Henkemans 2001, see also Wiersum 1997). The following types of land and land-use are recognised.

\textsuperscript{12} Henkemans (2001) studied (among other things) the different land-use types of Northern lowland Bolivia. Although her study was not specifically directed towards indigenous people, her findings on the characteristics of land-use types are applicable to the indigenous people in TCO Tacana.
Monte alto is old-growth forest or climax forest that has not been cultivated and that is selectively used for the extraction of non-timber forest products and some timber trees. According to local people, old-growth forest provides the highest quantity and quality of useful forest products for current or potential subsistence use and income generation. Since old-growth forest serves as a hiding place for larger mammals, it is the best place for hunting large prey (see further paragraph 5.3). Another advantage is that this vegetation still has the potential to be converted into cultivated land (Henkemans 2001), “it is still virgin, so we can do everything with it what we want”. The forest has a low value to local users when expressed in dollars per hectare, but it has a high value when expressed as a share of household consumption or earnings (Godoy et al. 2002).

The agricultural field (chaco) that is created in the forest, after cutting and burning the vegetation, is usually made in an old fallow field or in monte alto. A chaco is cultivated with annual crops such as rice and maize for one to two years, combined with or followed by manioc for another one to two years. Some inhabitants plant perennials such as bananas and plantains in the chaco in the second year. Due to a scarcity of capital, they are obliged to look for efficient ways in utilising land and labour, and apply systems of crop association to minimise risk and increase diversity of production per unit area. Apart from agricultural produce, the chaco also provides a number of wild products (Rhoades & Bidegaray 1987, Henkemans 2001). When other land-use practices yield more profits, “chacos are still maintained as a buffer”.

When the chaco is left fallow after a few years of cultivation, it regenerates with secondary vegetation: barbecho. After two to three years, when just recovering from cultivation, such a field is covered with small shrubs, immature trees, and some grasses. Local people characterise the barbecho as a field of low economic value with trees of low diameters that are mainly suitable for domestic use. This vegetation is relatively dense, which makes it inaccessible. It is an ideal hiding place for harmful insects and reptiles, but at the same time attracts small mammals that are valuable sources of bush meat. After ten years these fields are characterised by dense stands of mature pioneer tree species. The tree species in this type of vegetation provide suitable wood for fuel and for construction, as well as palm leaves for roofing and fruits for consumption. The advantage of this forest type is that the products are more physically accessible and available than in the old-growth forest and more mature than in the young fallow. Many forest dwellers rely on these older fallow fields for the preparation of their agricultural fields and they are usually located at smaller distances from the houses (Henkemans 2001). A study from the Peruvian jungle showed that most farmers preferred to clear this type of forest to save labour costs (Rhoades & Bidegaray 1987). In the study area the barbecho is used for growing several perennial crops notably bananas and plantains. They are planted in the barbecho because these perennial species can grow on the less fertile soils of the barbecho, while the annual crops need the fertile soils of the chaco.
The *huerta* is the vegetable garden as well as the orchard around the house. Such a garden is usually fenced against roaming domestic animals. Most forest dwellers, however, do not maintain such a garden, but have a limited number of vegetables cultivated in the rays located on poles high above the ground. In this case, the *huerta* refers to the overall home compound including both these trays with vegetables and the horticultural plants around the house (Henkemans 2001). Vegetables are not always cultivated in the *huerta*, sometimes they are planted in the *chaco*.

Although forest-based land-use practices are dominant, also grasslands are present. The region shows a distinction between natural pasture or savannahs (*pampas*) and human-created pasture (*pasto*). *Pastos* are created in the forest after a semi-clearcut and one or two years of crop cultivation. Due to the high investment costs, starting livestock production is a privilege of the larger landowners. The lack of capital to build up a herd inhibits forest dwellers from becoming ranchers (Henkemans 2001). In the study area only the village Macahua (where the members of Macahua live) is surrounded by *pampas*.

### 5.2 Forest exploitation

Although the different land-use practices as described above are grounded in the forest, pure forest (*monte alto*) itself is also used (as mentioned before), namely for timber trees and non-timber forest products. Harvesting timber implies an intense relationship with the forest and important knowledge of the different products and species. Timber is used for the construction of houses, fabrication of tools, and furniture. It is also important as firewood for cooking. In some areas of lowland Bolivia, timber harvesting generates the highest income among the different forest harvesting activities, and given the market demand for timber species, the harvesting has been intensified (Uberhuaga 2001). Commercialisation of timber however is the result of recent changes and developments, and is still subject to changes.

During the eighties, the demand for wood resources at the local market increased considerably and local actors (including indigenous people) made use of this opportunity through the harvesting of trees for commercial purposes. For the harvesting of timber they established relations with people from outside the communities, involved in the transformation and marketing of logs. Small scale harvesting was done illegally, avoiding the prescribed procedures of harvesting and transport. The activity of illegal timber commercialisation however was clearly accepted, even by the forestry control, who also participated in the process. This activity was developed in response to an increasing need for monetary income in communities rich in natural resources but with very few opportunities to use these resources to improve their living conditions (Uberhuaga 2001). Consequently, an important percentage of timber came from illegal timber harvest in concessions and public areas through the extraction of log timber or trunks, which was carried out by a great variety
of local actors who avoided the State control (Pavez & Bojanic 1998). With the new forest law, things changed and these common, but illegal, practices were from that time on forbidden. Consequently the situation of illegal harvesters is getting worse because of a stronger maintenance of the forest law (Uberhuaga 2001).

As described in chapter 1, indigenous people have the possibility to harvest their forest commercially after they have elaborated a forest management plan that is approved by the Forest Superintendency. This forest management is applied as a separate land-use practice termed in this report: *monte alto (FM)* (‘*monte alto*’ because it is applied in this type of area, and ‘*FM*’ as an abbreviation for ‘forest management’). The use of this term in the following text does not necessarily imply the existence of an approved forest management plan (some CFEs do not have it yet, though they are working on it), it rather implies the communal commercial harvesting which is intended by the CFE.

### 5.3 Non-timber forest products

Besides timber also non-timber forest products (plants, tree-products, animals) are extracted from *monte alto*. Although it is not always possible to describe the use value in monetary terms, non-timber products are economically important for many people. The subsistence value is especially important to people without many cash resources, since the products are often available free of charge. Many products are used for subsistence but not marketed commercially. The reasons for lack of market development include lack of infrastructure, limited technology, lack of access to markets and unfamiliarity with products on the part of consumers (Broekhoven 1996, Dijkman *et al.* 1998, Schwartz, 2003). In Bolivia, government programmes exist or are being developed to increase the exploitation of non-timber products. If extraction of products appears to be profitable there will always be the tendency to domesticate these products, with agriculture and agroforestry displacing extractivism (Broekhoven, 1996). A clear example of such agroforestry displacing extractivism in the study area is *cacao growing*. In the villages Tumupasa and Macahua, communal groups for *cacao growing* were recently (two years before the study) implemented by CEDEC13. In Tumupasa twenty community members (actually family heads) are participating in this group and in Macahua twelve, but so far, no products were harvested yet. Although it is a communal group, they only cultivate a cacao nursery communally. Seedlings will be planted in individually owned plots and harvesting will be done privately.

An important product among non-timber forest products is wildlife (fish and game). “We do not always have money to buy meat, hunting therefore is important, we live from it and at the moment we do not have an alternative.” According to Godoy *et al.* (2002) its relative contribution to consumption is twice as high as the relative contribution of plants and plant products. Hunting of wildlife in forests is a common practice in Bolivia and occurs in

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13 CEDEC, the Centre of Cultural Protection (Centro de Defensa de la Cultura) is a NGO implementing several projects in this region of which cattle raising and cacao growing are the most well-known projects.
community forests exploited by indigenous peoples and in forests awarded as concessions to logging companies (Rumiz et al. 2001). However, in Bolivia a law is in effect, forbidding all harassment, capture, and gathering of wild animals and their products. An exception is made for subsistence hunting, which was assumed to be legal for indigenous communities because of their dependency on the wildlife resource. They also have the right to legally sell wildlife products as skins (Rumiz & Aguilar 2001, Rumiz et al. 2001).

### 5.4 Summary of different land-use practices

Indigenous people of lowland Bolivia are using different zones in the natural resource base, treating them with various land-use strategies, and consequently applying different types of land-use. These discussed land-use practices, which are also analysed in the study, are summarised in table 5.1. Although some types are closely related and considered to form together one land-use system, they are discerned as separate types, to avoid multiple valuations for a single land-use practice.

**Table 5.1 Summary of land-use practices (partly based on Henkemans 2001)**

<table>
<thead>
<tr>
<th>(Local) name of land-use practice</th>
<th>Short explanation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Huerta</td>
<td>Growing vegetables in a garden, as well as growing all kinds of products in the orchard around the house</td>
</tr>
<tr>
<td>Chaco</td>
<td>Cultivating agricultural crops in the agricultural field, after cutting and burning the forest vegetation</td>
</tr>
<tr>
<td>Barbecho</td>
<td>Cultivating agricultural crops (mostly perennials); sometimes used for non-timber forest products in secondary vegetation after chaco</td>
</tr>
<tr>
<td>Pasto / pampa</td>
<td>Cattle grazing in human-created pastures or natural pastures/savannahs</td>
</tr>
<tr>
<td>Cacao growing</td>
<td>Communal maintaining cacao nursery, cacao plantation will be privately owned and maintained</td>
</tr>
<tr>
<td>Fishery</td>
<td>Fishing in forest streams and rivers</td>
</tr>
<tr>
<td>Hunting</td>
<td>Hunting of wildlife in monte alto</td>
</tr>
<tr>
<td>Monte alto (products)</td>
<td>Extracting of products from the forest, except for commercial timber harvesting</td>
</tr>
<tr>
<td>Monte alto (FM)</td>
<td>Commercial timber harvesting by means of the forest management plan of the CFE</td>
</tr>
</tbody>
</table>
6 Characteristics of the CFEs

In this chapter the characteristics of each CFE will be described. First a general description of each CFE will be given after which five different aspects will be elaborated: group size and heterogeneity, land-use valuation, social capital, participation and internal transaction costs. Each CFE paragraph will end with a general conclusion, linking the presented results.

6.1 El Carmen

The village San Silvestre is located in the forest, 6 km from Tumupasa and inhabited by 20 families. In this village more and more inhabitants are moving to the towns and cities, leaving behind an empty village. To stop a further disintegration of the village, several men (both from San Silvestre and Tumupasa) sought for an economic alternative. The area has hardly any potential for economic activities, except for forestry. In April 2004 (half a year before this study) they started organising a group of interested people to manage and harvest timber from a forest area located within the TCO Tacana. This group was denominated El Carmen. It has a board with in total five elected members, including the legal representative. The forest area they applied for is located approximately 7 km from San Silvestre (12 km from Tumupasa). During data collecting for this study the CFE was starting up its activities and engaged in the elaboration of their forest management plan, which means that they have to execute a forest inventory to determine the management system to be applied and determine the organisational structure, responsibilities, norms and rules etc. Harvest activities have not been realised but inventory activities in the forest, required for the elaboration of the annual harvest plan, have been executed by the CFE members for several weeks. In these activities they are assisted by CIPTA and a contracted forest engineer.

6.1.1 Group size and heterogeneity

El Carmen has in total 15 members, of which three women (their husbands also participate). Of all members, 11 are living in San Silvestre (where in total 20 families are living) and four are living in Tumupasa (with a total population of 200 families, 1800 people). The ages of the members range from young people below 25 years old (as the legal representative) to elder people above 60 years old (sometimes the parents of the younger members), but the average age is approximately 35 years. All the members are from the Tacana tribe and grew up in the region of Tumupasa and San Silvestre. Their cultural background therefore is rather equal, as is the case with the educational level: practically all respondents attended a school for 8-10 years. In terms of heterogeneity, this group is considered rather homogenous, “it represents the diversity of the village (San Silvestre)”. However, various levels of capacity exist among the members: for instance some members need more technical explanation on the new

14 Official name: Agrupación Forestal El Carmen (Forestry group El Carmen)
management practices than others: “Everybody wants to know how it works. But I need a lot of time to learn.”

People do not have a lot of experience in working together on productive activities and they now see both advantages as disadvantages of working together in a group. Two board-members mentioned the next advantages (specific for El Carmen):

- Assistance of everybody, and thus achieving more. Joining forces together leads to more possibilities for forest activities and extension of job opportunities. Consequently this leads to more employment and higher incomes per member.

- A bigger area can be obtained. A single person has only the possibility to apply for an area of five hectares. With such a group, a bigger area can be requested, even relatively: more than five times the number of group members\(^{15}\).

- Improving the communal situation in stead of individual situations. With such a group, more possibilities exist and stronger agreements can be made for practical and financial aid for the community (of San Silvestre).

- The members of the group have the same goal: starting a CFE, and somehow they also have the same basic ideas. Due to this harmony a stronger position is obtained, which is considered necessary to operate in the timber market.

- With a bigger group there is more knowledge and more ideas can be invented. This advantage however is considered to be small, as most members hardly have any specific knowledge or experience for a CFE. Workshops of NGOs are needed to teach and train them in the specific requirements, and meetings are for the greater part dealing with explanations.

Several disadvantages that they mentioned:

- It is hard to organise the group, as it is a new way of working. The board-members are still learning and the members need to become used to the new way of cooperating. Especially because the members have the attitude and preference to work for themselves and to work alone, cooperating is difficult (see further paragraph 6.1.4).

- Though the main focus is similar among the members, in specific topics they have to deal with a diverse range of ideas and opinions. Moreover, members are critical and their comments are not always constructive. This is strengthened by some members who “think negatively about the CFE-board”. That is why it is harder to achieve accordance.

- Especially for the board-members a disadvantage is the higher responsibility with regard to money. Due to the responsibility for money, board-members are more subject to criticism of members. Moreover, most members do not have know-how about accountancy and other financial issues.

\(^{15}\) This is actually not correct, as the respondent refers to forest for agriculture. They cannot apply individually for forest to harvest wood.
Because this group of 15 people can be considered rather homogeneous with respect to their cultural background and educational level, group size seems to favour the elaboration of a communally driven goal. They are however also a homogenous group concerning skills and knowledge, which are unfortunately quite poor (i.e. not fitting the requirements for this new way of forestry), as a consequence they can hardly draw on complementary skills and knowledge. This new way of working therefore displays some difficulties.

6.1.2 Land-use valuation

When comparing the variety in ways of existence, the CFE-members form again a rather homogenous group: all interviewed members apply a system of integrated land-use practice as described in chapter 5 (see figure 6.1). For the valuation of the applied land-use practices, the respondents were asked to divide 50 maize grains over the different land-use practices according to the importance for their livelihood. When a respondent did not apply a certain land-use practice, this practice is considered to be of no importance for the respondents, and its value is set to zero. This assumption can be made as long as the valuations are used to investigate the present influence of valuation for other land-use practices on the performance of the CFE. To calculate the relative importance of land-use practice in comparison with the practice of El Carmen, the value of a practice is divided by the value given to Monte alto (FM). This is done for each respondent separately. The comparative perspectives of the eight respondents on the importance of the different land-use practices in comparison with the practice of El Carmen are presented in figure 6.2. Dots represent the average relative valuation of this type of land-use, the lines represent the standard deviations of these valuations. Because of the relative valuation, the valuations for Monte alto (FM) are always 1. Practices with higher valuations than 1.0 are more important to them, whereas lower valuations represent less important land-use practices.

![Figure 6.1 Number of El Carmen respondents applying the different land-use practices (total = 8).](image)
Figure 6.2 Relative land-use valuations by respondents of El Carmen

Considering these figures, several remarks have to be added. Firstly, during the interviews with respondents of El Carmen, the existence of cacao growers was yet unknown for the researcher. That is why no values exist for this type of land-use. Although, most of the respondents of El Carmen could not have been a member of this communal group as they were no residents of Tumupasa. Secondly, five of eight respondents gave a valuation for the land-use practices hunting and monte alto (products) together, because both types were applied in the same area. For the analysis of these valuations, a calculation was made to give all types a new valuation, keeping the relative importance among the others and keeping total valuation at fifty\(^{16}\).

Although little can be concluded statistically from these figures, still some general remarks can be given. In the first place, huertas and pastos are just practiced by some respondents and receive the lowest (average) values. However, for some members pasto was very important: two respondents gave pasto one of the highest valuations. Nevertheless, crop-systems (chaco and barbecho) receive in general a higher valuation, and product collecting in the forest (hunting and monte alto (products)) receives even slightly higher valuations than crop-systems. Maybe the location of the village plays an important role in the valuations, as it is situated in the middle of the forest, even house yards are directly bordered on the forest. Forest meat is a relatively important product among the respondents, but it is not easily obtained as it is time consuming. Each year they need to go deeper into the forest to find animals. Non-members complain that harvesting activities of El Carmen would further threaten the presence of forest

\(^{16}\)For each valuation the next calculation was made (Y being the valuation of the compared land-use types): 
\[\frac{50}{(50 + Y)} \times \text{old valuation}\]; For example: 4 valuations were respectively 11, 12, 13 and 14, with 14 the compared valuation (thus for Hunting and Monte alto (products)), the new valuation for the first valuation (11) was: \(\frac{50}{64} \times 11 = 8.6\) and for the others 9.4, 10.2, 10.9 and 10.9.
animals. The crop-systems receive a relatively high valuation because this is for most of the respondents the main way of surviving. They do not have a job and for their subsistence they totally depend on crops received from their own agricultural fields.

A second general remark concerns the valuation of monte alto (FM). Most respondents have a hesitant attitude, they are yet awaiting results. This is obvious because they just started and few can be said about effects and results. But the expectations are positive, also in reaction to past events: "In the past we were working illegally with timber harvesting, our trunks could easily be taken away by others, also by the forest service. Now it will be safer." Another respondent declared that future expectancies are positive because “we all agree with each other”. Several respondents were especially happy with El Carmen because it gives them a job, which was considered one of the few impacts so far of El Carmen. Nevertheless, members give this new practice generally less importance than agricultural and gathering activities, which is comprehensible as they still rely on these practices to survive.

6.1.3 Social capital
The attitude of the people in this area seems to contrast with the idea of cooperation as reported in paragraph 6.1.1. They live rather on their own, as one of the non-members said: “Let everybody has his own area in the forest: they (members of El Carmen) their area with forestry, we our forest with our chaco.” This is confirmed by more respondents: people prefer to work alone or with their family, not with others. Though for some activities that are hard to undertake alone (such as house-building) they do work together, after which the owner serves a meal for the helpers. Sometimes also sowing is done together, but none of the respondents told of collaborating during harvesting. Distrust is the main reason for this attitude of working for oneself. These aspects of social capital are general characteristics of the culture in this area.

However, with respect to El Carmen it can be said that the attractive economic perspective of timber harvesting stimulated people to cooperate with each other, be it with some hesitance. Several respondents said that they expect problems in the group with regard to financial issues: they suspect other members to keep money back. For several non-members this was even the reason not to participate in El Carmen, as they suspect the board of El Carmen to be lazy and unreliable. Some CFE-members complained that the board of El Carmen lacks transparency, especially with regard to financial issues. This affirms the distrust among the members. On the other hand the members have enough trust in each other to start such a CFE. Moreover, discussing organisational issues and expected internal problems shows the willingness to work together. One of the respondents said: “In the past it never worked to cooperate. Ten persons were doing the right thing and five were always sabotaging. Now we are with a couple of young men and we want to do it very well now.” This respondent though admitted that they are not one group, mainly because most of the time hardly half of the group is participating at necessary activities. Some members grumbled about this problem and forms of reciprocity seem to be expected: the presence at meetings and
activities is highly appreciated, “it is your responsibility”. When people stay away, they lose credibility and will be taken less seriously. A penalty will probably be established (as in the other CFEs in Tumupasa) forcing the members to attend the meetings. In case of absence without cancellation with a valid reason, a fine will be given, probably to the amount of a daily wage (this subject however had to be discussed yet). On the other hand it was remarkable that the respondents also said that every member has and must have the right to do what he wants: when he has other things to do, he is free to go even when he has to neglect an activity of El Carmen. This is a norm that can be heard often, and which is not unexpected as the preference to work alone strengthens the idea to have the right to do what you want. Because El Carmen will (probably) be profitable, reciprocity will furthermore easily be expressed in loans, though little was known yet how this will be fixed.

Despite of feelings of distrust and forms of reciprocity, no (informal) internal groups are formed (according to the respondents). Most people are from San Silvestre, just some from Tumupasa, but even this does not result in internal groups: “We are the same TCO!” This is understandable as most Tumupasa members were born in San Silvestre and still have a house there, or are married with people from San Silvestre. Interrelationships between community members became clearer during a funeral of an old villager: all members of the CFE participated in the funeral ceremonies for a couple of days. These internal networks are one of the few social strengths, though hampered by poor relations of trust, norms of self-autonomy, resulting in weak reciprocity levels.

6.1.4 Participation

Although networks already existed, participation in productive (and commercial) activities became a new way of cooperation when two men came up with the idea to form a CFE (they are now two of the board-members) and started organising a group of interested people to manage the forest and harvest timber. From the moment the group was formed, all members took and still take part in the performance of El Carmen, though with different intensities in different activities. All fifteen members participated in the decision-making for the constitution of El Carmen, at least they had (and have) the right to participate. Meetings were necessary to explain the different topics and to explain about which topic they needed to make decisions. Afterwards these discussions were needed to reach consensus among the members. In practice, the legal representative collaborated with the forest engineer to write a proposal, which was presented (and explained) in the group. Each member has the right and possibility to bring forward his or her ideas and opinions. “We discuss about it until we agree with each other”, many respondents said. However, because of a lack of knowledge among the members, mainly those members who have more knowledge and experience were the ones who took the decisions. The technical issues of the management plan were elaborated by the forest engineer.

In the first six months, approximately one meeting per month was organised. Most of these meetings were held in San Silvestre, but also some in Tumupasa. The meetings were intended
to share information and discuss about topics with all fifteen members, sometimes also with members of CIPTA, the forest engineer and/or representatives of sawmills (except for these external persons, no others are present at meetings). However, the turnouts at meetings never have been 100%, mostly it was between 70 and 90%. Members said that the meetings are worth to visit because it is interesting, everybody wants to hear what is happening and what is going to happen. Other activities however (e.g. working in a sawmill, working in their agricultural gardens or hunting) kept them from attending meetings. In this stage of the performance of *El Carmen* every single member needs to participate in decision-making as each member’s vote is needed to approve or reject a proposal. During the constitution of *El Carmen*, all members need to agree with decisions; after the constitution, more than 50% of the members need to agree with a proposal. Besides meetings, members also could obtain information about what is happening or what is going to be done by “chatting with each other on the street”, though some respondents only obtain information by means of meetings.

Because the forest management plan was not yet fully elaborated and approved, harvest activities were not yet undertaken. However, for the forest management plan they had to execute a forest inventory and several preliminary activities in the forest, e.g. dividing the forest area by cutting paths and determining the positions of valuable trees for the harvest. Almost all members participated in these activities, though with different frequencies. Several members were partly or wholly hindered to participate because of other activities or jobs. Female members participated in the forest as a cook, but they often also participated in the forest inventory. Some members said that in future they would like to work daily or frequently for *El Carmen*, even if this means that they have to quit their present job.

### 6.1.5 Internal transaction costs

The previous described factors and processes result in costs and benefits for the enterprise and its members that need further attention and explanation. As this group just recently started, hardly anything can be said yet concerning internal problems and conflicts, although some members indicated some tentative issues.

Firstly, the absence of members during meetings and activities was considered to be a problem. Because several members did not show up for preliminary activities in the forest, others had to work two in stead of one week. The absence of members during meetings was a problem, because every member needed to agree and firm the decisions about specific, basic topics, thus when they did not show up, decisions had to be postponed, causing a delay in the process of formulating the forest management plan. For some members this creates the feeling of not being one unity, “everybody needs to take his or her responsibilities, especially next year when we will start harvesting!”. Concerning the meetings, another problem was the communication in advance of the meetings: “Many members didn’t know when there was a meeting.” This turned out to be really the case when one respondent told that all meetings were hold in San Silvestre, none in Tumupasa, in contrast with others who
told that also some meetings were held in Tumupasa. Moreover, the numbers of meetings, counted by respondents, were often different, varying from three to six meetings in the first six months. Some respondents expect the absence of members to remain a problem in future, although they did not yet discuss about this subject and the possible solutions for this problem.

Secondly, most of the respondents expect that they will have conflicts about financial issues in future. “There will always be somebody who wants to keep money for himself,” or: “When somebody will buy something for El Carmen while the others don’t know about it, then the questions will come: Why?!” They admit that it depends on the administration and because they do not know how to work in this way, this is considered to be a serious issue.

This shows a third problem: lack of knowledge and experience. Because of this lack, more time is needed to explain the members what it all means and how they have to work. Discussions during meetings develop difficulty because of misunderstandings and time needed for explanation. This is strengthened by a variety of ideas and opinions. The performance of the CFE will probably also develop with difficulties, because many (if not all) members are still learning how to operate in a way that is required to get the forest management plan approved and to operate successfully in the market. This concerns harvest techniques, administration requirements, and marketing skills.

6.1.6 Conclusion
The characteristics of El Carmen, described in the previous paragraphs, are summarised and presented in table 6.1. The main internal transaction costs are delays and time and efforts needed to resolve problems. The causes of these internal transaction costs can be categorised in four components: (1) delays in decision-making and implementation due to absence of members during meetings and activities, (2) distrust among members, partly resulting in (3) expected conflicts about financial issues, and (4) difficulties in decision-making and risk of taking wrong decisions because of lack of knowledge and experience. Notwithstanding the advantages of the group size with regard to their position in the market and opportunities to develop a profitable and growing enterprise, the internal transaction costs are slowing down the performance of El Carmen, even though the members of El Carmen have an optimistic attitude considering these costs to be low.

While building up trust will reduce transaction costs, distrust will induce them. This is the problem in El Carmen, where the existence of distrust among the CFE-members, rooted in common distrust of the community culture, obstructs mutual cooperation. Besides (or maybe because of this) they prefer to work on their own and a common non-written rule exists, stating that everybody has the right to do what he wants. Because of the attitudes of distrust and preference to work alone, there is no strong unity in El Carmen. Forms of reciprocity do plead for participation and cooperation, also to strengthen the internal networks, but as
<table>
<thead>
<tr>
<th>Group size and heterogeneity</th>
<th>Land-use valuation</th>
<th>Social Capital</th>
<th>Participation</th>
<th>Internal transaction costs</th>
</tr>
</thead>
<tbody>
<tr>
<td>15 members</td>
<td>High valuations for forest products collection and agricultural practices</td>
<td>Poor relations of trust</td>
<td>Decision-making</td>
<td>Delays because of:</td>
</tr>
<tr>
<td>Heterogeneity:</td>
<td>Hesitant (awaiting) attitude regarding <em>El Carmen</em></td>
<td>Little reciprocity and exchange</td>
<td>Established interactive participation**</td>
<td>Too low turnouts during meetings and forest activities</td>
</tr>
<tr>
<td>Cultural background (++), educational level (+), age (-), opinions (+/-)*</td>
<td>Self-autonomy norms seem to dominate</td>
<td>In practice: members with more knowledge and experience dominate</td>
<td>Implementation:</td>
<td>Lacking knowledge and experience</td>
</tr>
<tr>
<td>In general: considered to be quite homogeneous</td>
<td>Well developed networks, no internal groups</td>
<td>One meeting per month, turnouts 70-90%</td>
<td>Hardly undertaken yet, almost all members participated</td>
<td>Time and efforts needed to:</td>
</tr>
<tr>
<td>Advantages:</td>
<td></td>
<td></td>
<td></td>
<td>Build up mutual trust</td>
</tr>
<tr>
<td>Collaboration, bigger area, improvement of whole community</td>
<td></td>
<td></td>
<td></td>
<td>Resolve (expected) financial conflicts</td>
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<tr>
<td>Disadvantages:</td>
<td></td>
<td></td>
<td></td>
<td>Resolve ‘damage’ caused by wrong decisions</td>
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<tr>
<td>Hard to organise, diverse ideas, high financial responsibility for board</td>
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</tbody>
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* Level of homogeneity: ++ means homogeneous, -- means heterogeneous (total range: ++, +, +/-, - and --).

** See table 2.1 for explanation of participation typology.
reciprocity within *El Carmen* is weakly applied, the performance is suffering from the non-written self-autonomy norms and relations of distrust. Though networks in general are quite well developed, social capital in *El Carmen* thus appears to be low. Because of this low social capital, cooperation develops more difficult. As a result members fail to take their responsibility, the more as they give other land-use practices a higher priority. Although none of the members mentioned negative impacts of land-use valuations on the performance of *El Carmen*, mainly agricultural activities and hunting kept members away from meetings and activities of *El Carmen*. This conflicts with the concept of participation, as intended by the CFE, requiring all members to participate at least in the meetings and preferably also in activities. In this stage of forming the CFE, the participation of all members in decision-making (during meetings) is even crucial. The consequence of the absence is a delay in the performance of *El Carmen*, and the risk of deteriorating mutual relationships.

Group size and heterogeneity seem to play a marginal role in inducing transaction costs. Cultural backgrounds are scarcely varying and all members are striving for the same goal, this even seems to decrease the internal transaction costs, although cooperation is sometimes difficult because of varying ideas and opinions. Homogeneity in knowledge and experience however appears to be a disadvantage, as it resulted in little possibilities to complement knowledge and experience. Through this lack, the group is more amenable for mistakes and delays, the last already occurring during meetings as more time is needed for explanations and discussions. Furthermore, a lack of knowledge and experience among the members of the CFE-board increases the amenability for mistakes, strengthening the distrust among members with regards to financial administration and issues.

In general especially poor social capital seems to obstruct the performance of *El Carmen*, resulting in internal transaction costs: delays in the performance and time and efforts needed to resolve internal problems. The group size and its homogeneity do not have enough ‘strength’ (yet) to overrule the lacking social capital, the more as people often had other priorities in their land-use practices. Both decision-making and implementation are now coping with difficulties, and participation is developing difficultly.

### 6.2 Macahua

The village Macahua (5 km from Ixiamas) is located in an area different from San Silvestre and Tumupasa (where the other CFEs are located, see appendix 2). It is surrounded partly by *pampas* (natural savannahs) and partly by forests. A river passes by at 1 km of the village. The CFE of Macahua\(^{17}\) is an enterprise of the whole community and started two years before this study. It has a board with in total five elected members, including the legal representative and

\(^{17}\) Official name: Unidad de Producción Forestal de TCO Macahua (Unity of Forest Production of TCO Macahua), in this report referred to as *Macahua* (italic font represents the CFE, while normal font represents the village).
the forest area they applied for, is located approximately 12 km from Macahua (17 km from Ixiamas). Both the village and their forest are located in the TCO Tacana. Their general forest management plan is not yet approved, some things still had to be improved. Nevertheless, these two years they were already working in the forest. The first year they already harvested and sold trunks, due to administrative problems however, this second year they were not allowed to carry out harvest activities. During data collecting for this study they were undertaking a forest inventory for the next annual harvest plan. In these years they are assisted by local NGOs (mainly CADEFOR) and a contracted forest engineer.

6.2.1 Group size and heterogeneity
Macahua is inhabited by 33 families. Although not all these families do participate in the CFE, the majority does: 25 families. In practice the family heads (mainly men) are the official members and per activity only one person per family has the right to participate (mostly the family chiefs). The ages of the members range from young people of 25 years old to elder people above 60 years old. Many members however are above 50 years old and the average age is approximately 45 years. Almost all members are from the Tacana tribe and grew up in the region of Macahua and Ixiamas. Just some members came from other regions in Bolivia (Beni, Pando and La Paz) but are already living for a certain period in Macahua. In general however, their cultural background seems to be rather equal. The educational level is slightly varying: respondents attended a school for two until eight years. In terms of heterogeneity, this group is considered quite homogenous, apart from the varying ages of members.

Working together on productive activities delivers both advantages as disadvantages. The three board-members mentioned the same advantages of working together in a group (specific for Macahua):

- It provides labour forces. There are many people to do the job, “we are with a lot of hands” and consequently the activities will be completed sooner.
- It gives many people a job. Many villagers have the possibility to participate in the group, which creates jobs for them and thus improves the situations of many families.

Several disadvantages that they mentioned:
- Members feel less responsible. Responsibility is ‘distributed’ over more persons, resulting in less feelings of responsibility among the members. Consequently, some members do not work accurate. “But when just a few are working, many will suffer.”
- It is hard to manage the group. It is a large group and not everybody “has the same level of thinking”, some differences and varying ideas exist within the group.
- Managing such a group requires more investments. Arranging and distributing activities is not simple and orderly, they have to reckon with a large group of members and time is needed to inform and gather all members.
- Fewer benefits per member can be obtained. Total benefits have to be distributed over a large group, while less people could do the same work.
The size of this group (25 people) is thus favouring both the enterprise and the community because of job opportunities, though it also seems to diminish the financial attractiveness. Its relative homogeneity however has a quite positive influence on the performance of Macabuna.

6.2.2 Land-use valuation
The CFE-members however form a slightly heterogeneous group concerning the way of existence. All interviewed members apply a system of integrated land-use strategies, mainly based on shifting cultivation, supplemented by collecting forest products (see figure 6.3). Some members however supplement it with cattle grazing on their own 

*pasto* or collectively owned *pampas*, others participate in a group for *cacao growing*. Four of twelve respondents applied both types, while two applied neither *pasto / pampa* nor *cacao growing*. The comparative perspectives of the 12 respondents on the importance of the different land-use practices in comparison with the practice of Macabuna are presented in figure 6.4. (see paragraph 6.1.2 for general comments on the original data, applied calculations, and explanations of the figure).

Although little can be concluded statistically from these figures, still some general remarks can be given. In the first place, besides *pasto / pampa* and *cacao growing* also *huerta* is just practiced by some respondents. *Pasto / pampa* and *huerta* receive furthermore the lowest valuations. When comparing all valuations, almost all land-use practices receive a quite similar valuation. *Chaco* and *monte alto (FM)* receive according to this figure a slightly higher valuation. The variance of valuations for *cacao growing* is also worth to note. Three respondents gave a higher valuation for this type in comparison with *monte alto (FM)* as they consider *cacao growing* a more secure way of income than *monte alto (FM)*: *cacao growing* yields annual revenues while “not every part of the forest has a potential for timber harvesting” and moreover: “forest management will once end”. Elder members furthermore argued that “forest management is more suitable for younger people as it is tough work”. Especially the expected annual cash income of *cacao growing* causes four respondents to give it a higher valuation than their *chaco*.

On the other hand, *chaco* and *monte alto (FM)* receive in average a higher valuation. These last two types seem to play an important solid role for the members, as also became clear from their explanations with regard to their *chaco*: “Agriculture gives me steady security to survive, that’s what we are living from.”

A third remark concerns the slightly high valuation of *monte alto (FM)* (though not obviously higher than most other land-use practices). Most respondents mentioned hardly any positive or negative effects of Macabuna, but when the respondents were asked to give a mark for Macabuna between 1 and 10, the average mark was a 7.9. Afterwards they gave some strong and weak points of this CFE, of which the positive evaluations seemed to dominate. On the one hand most respondents appreciate the existence of Macabuna as an economic and legal way of improving their communal and individual lives, which already generated some
Figure 6.3 Number of Macahua respondents applying the different land-use practices (total = 12).

Figure 6.4 Relative land-use valuations by respondents of Macahua

benefits and small wages in the first year of harvesting. Furthermore they evaluated Macahua positively because they are really working now with hardly any problems (at least less than one year before) and coordination was done relatively well. On the other hand Macahua was evaluated by members as “not yet perfect”: they regret the insecurity of job-opportunities (“it is not a full-time solid job”), and the little positive effects achieved so far, “we don’t have good and normal results yet”. Besides they complain that not everybody is participating or working well and “always little problems arise because of disagreements”. Knowledge and experience however was poor in the past and though it is now improving because of assistance of NGOs, it is still in process and considered to be a disadvantage yet. Two wives
of Macahua members where relatively positive about the existence of this CFE as it generates cash income, giving the children a possibility to attend a school. Non-members do not participate in Macahua because they already had other employment, do not want to work in the forest or do not expect the CFE of being commercially interesting, as “the forest hardly has any valuable tree-species”. Because of the partly disappointing results so far, the practice of Macahua clearly has to compete with other land-use practices, especially with their standard agricultural activities, but also with the newly introduced practice cacao growing.

6.2.3 Social capital
Already before the establishment of Macahua, the inhabitants of Macahua were communally organised. Approximately once in two weeks a community meeting is held to discuss issues related to the community: water problems, buying a communal generator, a villager who needs to renew his roofing or who is building a new house and need the assistance of other community members. For these activities the residents of Macahua are considered to be responsible and they expect each other to help. Sometimes, almost all villagers turn up for an activity as was the case with replacing the roof of one villager’s house. After this job the owner served a meal for the helpers, followed by a community meeting. In this meeting the community chief impressed on their minds to be faithful to each other, and adjured them to attend the community meetings. This was a reaction to the declining turnouts during meetings in the last months and expresses the expectations of the village community. Though they attach importance to the organised community, they still have some preference to live on themselves, and feelings of distrust among community members exist as it reveals itself in new types of house-building, protecting them against thieves, “otherwise others easily can break the wall and take some stuff”.

As most of the villagers partake in Macahua, these communal attitudes, preferences to live on themselves, and feelings of distrust are also present in the CFE. One member said that the CFE-board sometimes lacks some transparency, especially concerning financial issues. Other members however trusted the CFE-board and showed sympathy for them as well as for the other members. As one respondent said: “We do not have a sanctioning system for somebody who is absent, we are tolerant, but when somebody does not come, he has to work a day without a salary.” More respondents confirmed this rule of sanctioning. The interest of the group furthermore has a high reputation, emphasising the improvement of every single member’s situation: members with no job or a low income are given priority in the activities of Macahua.

When asked if informal groups exist within Macahua most members disaffirmed the existence of internal groups: “We do not have quarrels, all is done together.” Also the member who came from La Paz said: “we are one group, I am also involved”. Just one member noticed that some people are sometimes excluded. Some members then have difficulties to integrate, because others don’t want them to assist them, they want to do the work themselves, bothering others. A formal group within Macahua however exists regarding the communal
group of cacao growers. In this group both men and women participate and some of them prefer cacao growing over the CFE (see also the previous paragraph). Recently there was a conflict in the community with regard to water use: non cacao growers accused the cacao growers of using too much water for their nursery which resulted in a lack of water for the village. This problem was solved in a few weeks. Due to social capital this community has a obvious communal character, only hindered by relations of distrust and sometimes low levels of reciprocity.

6.2.4 Participation

This also became clear when this CFE started. As said before, the CFE Macahau was formed two years before the study. It started when several younger people with capacity saw the successes of other groups and got the idea to form a CFE with their fellow community members in Macahua. At the moment the group was formed, already 21 families took part in this group. Later on four other families submitted a request to join the group, which was accepted. The other families are not living in Macahua or do not like this type of work and have other opportunities to improve their way of living, as cattle raising. Every member participates in the performance of Macahua, though with different intensities in different activities. Votes of all members were needed in the decision-making for the constitution of Macahua. In practice, the legal representative collaborated with the forest engineer to write a proposal, which was presented (and explained) in the group. Each member has the right and possibility to bring forward his opinions, and sometimes new ideas are brought up as an improvement or alternative for the proposal. “The board presents a proposal after which everybody, one by one, has to give his opinion. We discuss about it until we reach consensus,” several respondents explained. Some members however said that the board sometimes makes decisions itself, e.g. when an urgent decision is needed while no meeting can be organised with the members, or when a decision has to be made with regard to external actors as the sawmill. One member complained about the board: “They say that the decisions are made with us all, but sometimes they do it themselves,” and “sometimes they give too less information about financial issues and their communication is sometimes lacking”. Most other respondents however reacted positively with regard to the board and board-members. Also women (wives of members) have the possibility to participate in the discussions during meetings, but only the votes of men (the official members) count in final decisions. As one woman said: “Decisions remain the decisions of men.”

Besides meetings of the community, there are also meetings of the CFE, although sometimes also CFE related issues are discussed in community meetings (as most community members participate in Macahua). When the group undertakes activities, once a week (during the weekend) an ordinary CFE-meeting is organised with all members, but often extraordinary meetings are needed. In general two or three meetings per week are organised. One respondent explained: “When the legal representative is in Ixiamas, we do not have a meeting, but when he arrives, we say: “Come, let us meet” and then we have a meeting”. When there are no activities to undertake in the forest, less meetings are organised:
approximately once in three months. All these meetings are organised in the village Macahua, and almost always everybody is present, even the members’ wives are often present. Sometimes a single member is not able to come for health reasons or because of travelling. When members cannot attend a meeting, they have to send a representative (often their wife). Members hardly miss any meeting, because they consider the meetings to be obligatory, “we live in a community and consequently you have to take your responsibility”. Moreover, meetings are worth to visit because members are informed about what is happening and what is going to happen, “others won’t tell me all that is said during the meeting, therefore I have to go”. Some members said that they like this way of cooperating with each other, discussing problems, creating solutions and to make use of their right to give opinions, ideas, and solutions. Though meetings (“convened by the board”) are the main source to obtain information about what is happening or what is going to happen, members could also obtain information by “chatting with each other on the street”, or as one respondent said: “If no meeting can be organised, we have another way of communication: from mouth to mouth telling that we are going to work tomorrow.”

Because of the problems in the last year, no harvest activities were undertaken, only several preliminary activities in the forest had to be done for the forest management plan several (e.g. determining the positions of valuable trees for the next harvest). In total 18 members participated in these activities, though with different frequencies: some just one week, others up to three weeks. The rest could not participate because of other responsibilities in the village, other employment or because of health problems. In the first year however, when they were also undertaking harvest activities, more members were participating and they were working for longer periods: some just two weeks, but most more than one month, up to three months. In general all members could be brought into action during the preliminary activities, though with less people the same can be achieved, be it in a longer period. For harvesting activities (selecting and cutting trees) they need approximately 10 people. When a member is hindered to work, he can send a representative, as long as there is just one person per family working at a time. Most of the members do not participate in the harvesting activities as they do not have the skills for these kinds of jobs. Wives do also have the possibility to participate in the activities in the forest, assisting with activities to divide the forest area by cutting paths, though they often worked as a cook. Some members are satisfied with the few weeks they can work per year, others like to work more often, preferably some weeks per month for the whole year.

**6.2.5 Internal transaction costs**

The previous described factors and processes result in costs of organisation that need further attention and explanation. Concerning internal problems and conflicts, most respondents answered that they did not have them, or not anymore. When asking further, they though gave a number of problems and conflicts that sometimes arise.
Firstly, they sometimes have difficulties with reaching consensus and organising activities clearly. It happens sometimes that members are absent during meetings or activities, or other members turn up for an activity while they were not scheduled. Now and then they also have discussions about meetings, members who can go to workshops or other external meetings, contradictions during working, etc. Sometimes they even have to organise an extraordinary meeting to discuss the problem, because it was too difficult to come to a consensus. Besides, most members thought that the formulation of the management plan and organisational norms and rules just would take a few meetings. The formulation however developed much slower and needed many meetings, as many requirements have to be fulfilled.

Secondly, half of the respondents mention conflicts concerning financial issues. “Payments have to be done in time and properly, otherwise we will have problems with the members,” one of the board-members explained, and one of the members said: “Three men of the board are always working with the financial issues, but it is not always clear what they are doing, this causes worries among us and some members are then going to complain.” Sometimes they do not reach consensus on financial issues, for instance when they want to buy equipment or already bought some things, while others did not know about it. Members seem to be suspicious, especially in these cases. Also with regard to payments of salaries they sometimes have conflicts. Some members receive more money than others according to type of activities and number of days they have been working (this is appointed in the statutes). However, when the salaries are paid, some members start complaining as they want an equal payment for every member (though they sometimes not even participated in the activities). Several meetings were needed to explain the distribution of salaries. Mistakes are not made, according to several members, as the board keeps up an accurate administration concerning the participation in activities, “they have a control, and know exactly how much everybody has worked”.

Thirdly, most members mentioned the lack of knowledge and experience to be one of the biggest problems, at least in the past. They did not know how they had to work “because it is another type of forestry”. For a lack of capacity they had some deficiencies in their forest management plan and some problems during the activities in the forest. Sometimes the legal representative even cancelled activities “because of a lack of knowledge”. However, due to several courses and workshops on administration and management issues as well as forest practices (mainly attended by board-members), the situation is improved: “Now we know a little bit more how to work.” It is (by most respondents) not yet considered as perfect, though better than in the past. Still a lot of time is needed to explain the members how to operate and work. Because of these internal issues, the performance of Macabna developed slower and with problems that had or still have to be resolved.
<table>
<thead>
<tr>
<th>Group size and heterogeneity</th>
<th>Land-use valuation</th>
<th>Social Capital</th>
<th>Participation</th>
<th>Internal transaction costs</th>
</tr>
</thead>
<tbody>
<tr>
<td>25 members</td>
<td></td>
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<tr>
<td>Heterogeneity:</td>
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<tr>
<td>Cultural background (+), educational level (+/-), age (-), opinions (+/-)*</td>
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<td>In general: considered to be quite homogeneous</td>
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<td>Advantages:</td>
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<tr>
<td>Providing labour forces for CFE, job-opportunities for whole community</td>
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<td>Disadvantages:</td>
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<tr>
<td>Members feel less responsible, hard to manage, financially less attractive (higher costs, lower benefits)</td>
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|                      |                   |               |              |                           |
|                      | Quite similar valuations for most practices | To some extent poor relations of trust | Decision-making: | Delays because of: |
|                      | Slightly higher valuations for agricultural practices and practice of *Maahua*, cacao growing for some more important; some competition between them | Sometimes failing reciprocity and exchange | Established interactive participation** | Difficulties in reaching consensus and developing statutes |
|                      | Dual attitude regarding *Maahua*: legal and economic alternative, hardly any problems; but still insecure, little positive effects yet | Communal organised community, though self-autonomy norms are existing | In practice: sometimes board lacks transparency and makes decisions itself | Postponed activities due to lacking knowledge and experience |
|                      | Well developed networks, no internal groups | Two to three meetings per week, turnouts 95-100% | Almost all members participated, but in different frequencies | Time and efforts needed to: |
|                      | Implementation: | | | Organise activities clearly |
|                      | | | | Resolve financial conflicts |
|                      | | | | Restore deficiencies in forest management plan |
|                      | | | | Resolve problems during activities, due to lacking knowledge and experience |

* Level of homogeneity: ++ means homogeneous, -- means heterogeneous (total range: ++, +, +/-, - and --).

** See table 2.1 for explanation of participation typology.
6.2.6 Conclusion

The characteristics of Macahua, described in the previous paragraphs, are summarised and presented in table 6.2. The members of this CFE are quite one group because of the communal way of living that already existed before the establishment of Macahua, though this unity did not imply the absence of internal problems. The main internal transaction costs are delays and time and efforts needed to resolve problems. Despite of the advantages of the group size regarding job opportunities for the community members and the opportunities to develop a profitable and growing enterprise, the internal transaction costs are slowing down the performance of Macahua, even though Macahua members consider these costs to be low. The causes of these internal transaction costs can be categorised in three components: (1) delays in decision-making due to difficulties in reaching consensus, (2) conflicts about financial issues, and (3) difficulties in implementation, and risk of taking wrong decisions because of lack of knowledge and experience. These are however also interrelated as will be shown below.

Despite of some distrust among the members, the communal way of living is rather apparent and a unity seems to be expressed both in the community as in the CFE. The fact that this CFE is formed more or less as a ‘whole-community’-CFE (though some villagers did not want to participate) already characterises the communal character of the community. Nevertheless cooperation does not always develop easily because of the group size and its various ages, preferences and ideas. To cooperate with such a group is not considered an easy task by the CFE-board and many meetings are organised to discuss and resolve problems and to organise the activities. The difficulties in decision-making and implementation of activities are partly the result of a lack of knowledge and experience. Through this lack, they are more amenable for mistakes and delays, as was occurring with the formulation of their forest management plan, and more time is needed for explanations and discussions during meetings (or more meetings need to be held).

Besides, a lack of knowledge and experience among the members of the CFE-board increases the amenability for mistakes, strengthening the suspicious attitude of several members especially with regard to the financial issues they have to arrange. This sometimes causes conflicts between members and the board, demanding time and efforts (meetings) to resolve these problems. Though most members consider the amount of meetings to be enough (“not too little and not too much”), some respondents complained they have too many meetings. But all respondents consider the meetings to be necessary.

On the other hand the communal character of the community (and consequently of the CFE-members) streamlined to a certain extent the development of participation: members feel responsible for the CFE-meetings and activities and almost always turn up, moreover most of them are willing to participate. As a result Macahua has hardly any problems with turnouts during activities and meetings, and as a consequence other land-use practices do not seem to hinder the performance of Macahua. However, the practice of Macahua has to
6 Characteristics of the CFEs

compete with agricultural practices. Some members value cacao growing above the timber exploitation of Macahua, even though until now, no fruits were harvested from cacao growing. Nevertheless, hardly any influence of this land-use practice on the performance of Macahua seems to exist for the moment. They probably do not interfere with each another.

In general two main factors seem to obstruct the performance of Macahua: firstly the lack of knowledge and experience, and secondly, varied ideas and preferences, also regarding land-use practices. Besides delays also time and efforts needed to resolve problems are the resulting internal transaction costs. Social capital however seems to have a quite positive influence on the performance of this CFE, assuring an excellent participation level, preventing the increment of problems and compensating lack of knowledge and experience. Nevertheless, decision-making and implementation are still coping with difficulties, and seem to be only resolved when more knowledge and experience is available or developed and when the CFE has more real results than achieved so far.

6.3 Apiat

The village Tumupasa has 1800 inhabitants (200 families) and is therefore much bigger than San Silvestre (20 families) and Macahua (33 families). It is one of the main villages in the region and is located on the road between San Buenaventura (across the river at Rurrenabaque) and Ixiamas. CIPTA has its office in this village. In the past (already before 1996, the year of the Agrarian Reform Law and the new Forestry Law) a group of approximately 35 men of Tumupasa were collaborating in forest exploitation. The Forest Superintendency however urged them to form an official group as they were not working legally. At the same time they were forming the TCO Tacana, giving them the possibility to operate without a dependency on external persons. As a result they started in 1999 (six years before this study) with a CFE named Apiat\(^{18}\), which was the first CFE of TCO Tacana. It has a board with in total five elected members (including the legal representative) and the forest area they applied for, is located approximately 12 km from Tumupasa. Their general forest management plan was just approved in 2002, as many problems had to be resolved. Apiat is now operating in the forest since three years, however without any big results yet. During data collecting for this study they were still harvesting for the annual plans of 2000 and 2001. The annual harvests of past years (2002, 2003 and 2004) still had to be done. In these years they have been assisted by local NGOs (mainly BOLFOR and CADEFOR) and a contracted forest engineer.

6.3.1 Group size and heterogeneity

Though the group had principally approximately 35 members, various members quitted the group due to lacks and problems and searched for another job or formed a new CFE:

\(^{18}\) Official name: Agrupación de Pequeños Industriales Agro-silvo-pastorales de Tumupasa (Group of Small Agroforest, Silvicultural and Pasture Industries of Tumupasa)
Agrofort (see further paragraph 6.4). Now 25 members remain (of which four women), but only 18 members are really participating. The other seven do not want to work anymore in Apiat or have another job. Apart from the official members, they also contracted several persons for the activities in the forest: a cook with assistant and several men to assist with the harvest activities. The ages of the members range from young people of 24 years old to elder people of almost 60 years old, with an average age of approximately 42 years. Remarkable are the ages of former and present board-members. Of both boards, three members were interviewed. The members of the former board are 37, 48 and 58 years old, while the new members are 24, 27 and 49 years old. Forest workers (partly members and partly contracted persons) explained about the last person: “He is one of the elder people, we the rest are young people.” Almost all members are from the Tacana tribe and grew up in the region of Tumupasa. Just some members came from other regions in Bolivia (Beni and Sucre) but are already living for a certain period in Tumupasa. In general however, their cultural background seems to be rather equal. The educational level is slightly varying: respondents attended a school for 2-12 years, though most members at least attended school for eight years. In terms of heterogeneity, this group is considered slightly heterogeneous, because of varying ideas and opinions. The homogeneity however was improved as some members quitted the group. Besides, as a result of too many years with problems, delays and low results, members changed their priorities. In the past they wanted to achieve their own ideas, now they are more striving for results of the CFE. This further benefits the homogeneity of the group.

This group experienced both cooperating in a big group of 35 members as a smaller group of 25 (or 18 when considered only the active members). The three (present) board-members mentioned the following advantages of working together in a group (specific for Apiat):

- It provides labour forces for harvesting and inventory activities. With many people more can be done in a shorter period, consequently the activities are realised sooner.
- With a bigger group there is more knowledge and more ideas can be invented. Though nobody has enough knowledge for all activities, each member's know-how is functioning complementary, resulting in enough ‘group knowledge’ to fulfil the activities.
- Also women can be involved in the activities (though in practice only sporadically). Both wives of members as wives of contracted workers have taken part in supporting activities (cutting roads and paths, and cooking). (It was however not really clear how this relates to group size.)

Several disadvantages that they mentioned:

- Managing such a group is difficult. It is a large group and some differences and varying ideas exist within the group. Some members moreover have ideas that are not constructive.
- Fewer benefits per member can be obtained. Total benefits have to be distributed over a large group.
• Members are not working equally. Some members are always participating, others just sometimes. It diminishes the group unity.
• Especially for board-members a disadvantage is the responsibility for the group. They are judged by members, which causes worries for board-members: “Because of all the responsibilities, I have many worries. That’s why I often cannot sleep.”

The size of this group (firstly 35, now 25 official and 18 active members) thus delivered initially problems because of its heterogeneity, which partly is still the cause of difficulties in management. Because of an improved homogeneity however, group size now seems to have stronger positive effects as it delivers a diverse range of members with complementary skills and knowledge.

6.3.2 Land-use valuation
Nevertheless, concerning the way of existence, the CFE-members also form a slightly heterogeneous group. Although all interviewed members apply a system of integrated land-use strategies, mainly based on shifting cultivation supplemented by collecting forest products, there are some small variations (see figure 6.5). Almost all members (eight of ten) are also cultivating pastos, although just three of them are in the possession of cattle (ranging from three to twenty-five cows). Besides, four respondents participate in a group for cacao growing, of which three also have a pasto. Just one respondent applied neither pasto / pampa nor cacao growing. The comparative perspectives of the 10 respondents on the importance of the different land-use practices in comparison with the practice of Apiat are presented in figure 6.6. (see paragraph 6.1.2 for general comments on the original data, applied calculations, and explanations of the figure).

![Figure 6.5 Number of Apiat respondents applying the different land-use practices (total = 10).](image-url)
Although little can be concluded statistically from these figures, still some general remarks can be given. In the first place, besides cacao growing also huerta and fishery are just practiced by some respondents. The last two land-use practices furthermore receive the lowest values, even by members who apply these practices. Cacao growing is just practiced by four members, who gave it moreover a quite similar valuation as the other land-use practices. When comparing the valuations of the land-use practices, almost all other land-use practices receive in average a quite similar valuation, though a considerable diversity exists among members. From the figures no dominant practice can be appointed. However, agricultural practices (chaco and pasto / pampa) and monte alto (products) seem to receive slightly higher valuations than monte alto (FM): pastos are given in average the highest valuation by members who apply this type of practice, and the other two practices receive in average the highest valuations. Just three respondents gave a higher valuation for monte alto (FM) in comparison with chaco. A member of Tumupasa’s civil committee explained: “People in this village are more occupied with agriculture as it gives them at the moment the most benefits.”

This concerns the second remark: the valuation of monte alto (FM). Also this land-use practice received a quite similar valuation as the other practices. When ordering the preferences of land-use practices by the respondents, this practice is evaluated very diverse. By just two members this practice was given the highest score, others put it up to even the sixth place in preferences. In average it was preferred as the third main land-use practice. According to most respondents Apiat has no are just little results. The main reasons for this are the problems they had to resolve to get their forest management plan approved and afterwards the many problems they had to overcome with sawmill companies. Now they were just working for two to three years, but without returns as their position still has to be improved. When the respondents were asked to give a mark for Apiat between 1 and 10, the average
mark they gave was a 7.4: “We just recently started and not everything is yet perfect.” On the
one hand they appreciate the recent improvements: finalisation of the regulations, establishment
of the group, better work schemes and a better contract with the sawmill. Partly this is the result
of a new board. In the past the situation was worse, because of a bad organisation, troubling
members, and members refusing to work because they were hardly paid for it (Apiat had no
revenues yet). Now they are motivated to work because of expected revenues and salaries that
are already paid. Consequently also the internal relationships improved. On the other hand
still some problems have to be resolved: not every member is acquainted yet with the regulations,
several regulations and working patterns need to be changed, and they still lack suitable
equipment (for instance a radio for local contact, own transport and an office with a computer).
Besides some members accuse the board of bad communication with the members, as they would
inform the members rarely. No unity in the valuations of Apiat’s practices is thus present, in
contrast with the seemingly similar valuations for the different land-use practices. Both negative
and positive evaluations of Apiat are present among the members.

6.3.3 Social capital

The variety is also visible in the relationship between the members and the board-members,
which reflects the condition of trust among them. The board-members said that most
members now have confidence in the new board, that they are now satisfied and the
relationship between them was improved, though one of them still said that he would give a
higher mark for Apiat when “everything is OK with the members”. Reactions of members
however are diverse, varying from “a good relationship, without doubts,” to “no relationship
because they never inform us”. Most members are a little bit sceptical, mainly because of the
poor communication. They prefer to be informed in meetings, as one member said: “I don’t
believe information obtained by informal contacts, only information given during meetings is
reliable. No gossiping please!”

In the past they had troubles due to wrong decisions and problems with the sawmills, consequently they had no money to pay the members for their participation. Although the
situation has improved now, still many members are suspicious, and board-members had to
cope with severe discussions with members concerning their payments. Reciprocity (in terms
of payments for participation) thus was poor in the past, and according to board-members,
several members still are afraid not to be paid for their activities in Apiat. Exchange of
knowledge however is becoming an important issue in Apiat. “Several persons came to teach
us and we learned from them. Now, with a lot of reciprocity among us as, we are teaching
each other, and we all will make progress.” Since the new board they also implemented the
four-plus-four system, which means that every board-member (except for the legal
representative) is assisted by another member. This assistant has the possibility to learn the
specific tasks and thus will be able to replace once the present board-members. In doing this,
the tasks and responsibilities of board-members are further relieved.
Many complaints were heard of members who do not participate strictly in meetings and activities. They do not give it a high priority, partly because of the laborious development of Apiat and the few outcomes achieved. To force members to attend the meetings, a sanctioning system was established as in the other discussed CFEs. The former board however never applied this system, likewise the new board, though they planned to reintroduce this system. Board-members seemed a little bit frustrated about the low turnouts, while some members expressed the non-written rule that every member has and must have the right to do what he wants: when he has other things to do, he is free to go even when he has to neglect an activity of Apiat (as explained in paragraph 6.1.3).

Though several members said that there are no internal groups in Apiat, others recognised some. In the past the group was divided because of “bad management of the board”. Since the establishment of the new board, many things changed and internal relationships improved. The old board-members however sometimes form a group “because they think they have more capacity and knowledge”, and are opposing the new board. But also among members informal groups are formed “when members disagree and are gossiping with each other, which is a problem for the internal sphere”. One member said that the existence of internal groups to a large extent depends on the management: “With a good management of the board, we don’t have such troubles.” The recently achieved improvements seem to be promising, restoring internal relationships and emphasizing reciprocity and exchange of knowledge, although relations of distrust still hamper and sometimes disturb the performance of Apiat.

6.3.4 Participation

Distrust and varying ideas did also play an important role in the past. As said before, Apiat initially had 35 members of which several members left due to shortcomings and problems. Now only 18 members (of 25 official members) are actually participating, the others gave up because participation delivered no profits yet. In the beginning every member participated in the performance of Apiat, though with different intensities. Because it was often difficult to gather all members, mainly the board wrote the concept of the forest management plan in cooperation with the forest engineer, which was presented and explained in the group and discussed by all members. Every member had (and has) the right to give his or her opinion or to bring up another idea, and together decisions are made: more than 50% of all official members needs to agree with a proposal. Some members however have the impression that the board-members are the ones who come up with questions and subjects, and who make decisions, although “they take into account the opinions of the members”. This is not unfounded as the board often makes decisions without consulting the members. This concerns decisions regarding cooperation with NGOs and CIPTA, contracts and communication with the sawmill companies, salaries, wood sale, working schedules etc., though afterwards they communicate the decisions to the members during meetings. Nowadays only big issues (and problems) are discussed with all members, but most members do not have a problem with this way of dividing decision-making. The board does not often
consult the members, because “there is no time or it is very difficult to call all members together”. Besides, the board-members seem to have a stronger voice in the group, especially the legal representative. They have many new ideas to improve the situation of Apiat, and members “have to agree”, but this is not considered a problem: “We have the capacity and the power to change things.”

Though members sometimes also obtain information by means of informal conversations, they mostly obtain it during meetings that are held two or three times a year. All 25 members are invited for these meetings, which are used to discuss problems, propose ideas, talk about future perspectives, organise working schedules, take decisions etc. Besides, when forest activities are undertaken, the board organises extraordinary meetings: approximately once in two weeks, but only with the board-members and the members that are participating in the activities. These meetings are needed to evaluate the activities, discuss occurring problems, (re)organise the working schedules, and other things that need to be discussed that concern the forest activities. Though in the past many members turned up for meetings, the turnouts now are often poor. Sometimes a meeting had to be cancelled as less than the minimum of twelve members turned up. In general however 15-20 members are present during meetings.

Respondent’s reasons for non-appearance are various: health problems keep them at home, they do not have time to come because of other activities in the village or in other places, they do have another job, or as one member said: “because we are not yet working very well”. On the other hand, members gave also reasons why they do attend the meetings: it is considered obligatory (“these are my responsibilities and rights”, “I also have to take decisions”) and also necessary as the board tells what happened, explains the ideas and developments, and organises the working schedule. Besides one member said: “when you do not turn up, there is a sanction”, referring to the payment of a daily wage, which however was not applied according board-members. The meetings are mostly held in Tumupasa, though they sometimes meet in the forest as the workers are staying there. The board meets approximately once a week and once in two weeks their assistants also are invited to discuss mistakes and deficiencies, and what activities are undertaken or need to be undertaken. This board however wants to organise the meeting scheme more strictly: every three months an ordinary meeting and at the end of the year an annual meeting.

Because of problems with the former board, harvest activities started a few months later. During harvest activities seven members participate always and six members now and then. Most other members participated only in the forest inventory or did preliminary activities: cutting paths and building the camp shelters. Participation of members consequently is rather various, in contrast with the first years “when everybody was working, now we first have to search workers among the members and because of too little participating members we need to contract others”. This is however not considered a problem, as long as the job can be done. Consequently there are enough job possibilities for members, though some members said that they just could work a few days because there was nothing more to do. Probably this has to do with lacking skills (e.g. harvesting skills). In the following years job-
opportunities are even increasing as several plots with approved harvest plans still need to be harvested.

6.3.5 Internal transaction costs
The previously described factors and processes result in costs of organisation that need further attention and explanation. When the members were asked about internal problems and conflicts, some members answered that they did not have them, or not anymore. Most respondents however gave another reaction: “We are never free of difficulties.” They mentioned several problems and conflicts that to some extent already came up in the previous paragraphs and partly follow from the impacts discussed above.

Firstly, many difficulties arose in the past because of misunderstanding, a board that did not lived up to agreements and lacking equipment. Decision-making for instance developed difficultly as some members did not understand the subject and time was needed or explanations. Moreover, several times a forest management plan was rejected, after which a new proposal had to be devised. And at the moment, not every member is acquainted yet with the regulations, which generates discussions and conflicts about subjects that already have been decided and already are laid down in statutes. The former board moreover failed in management, mainly because the legal representative also participated in other groups and hardly had any time to work with Apiat. Besides, they made several mistakes and had some “bad luck in wood sale”, which caused conflicts in the group and feelings of incomprehension among them. This however improved after the appointment of the new board. Little conflicts sometimes arise with regard to bad food or a lack in food, or when a member wants to keep a trunk for himself, while it is harvested for Apiat. Difficulties in the forest also are the result of lacking suitable equipment and lacking an appropriate location for their forest camp.

Secondly, one of the biggest problems mentioned are the poor turnouts during meetings. Not always the majority is coming, which is the reason why some meetings were cancelled. This both creates a delay and feelings of incomprehension among members. For improvement the board tried to move the time of meetings: “Mostly we have our meetings in the evening, but then they have worked the whole day and do not come because they are tired. But when we organised the meeting in the morning at seven, they had to go to other places.” Now they want to re-establish the regulations and re-introduce the sanction rule for absence.

Slightly similar is the third problem concerning the participation in forest activities. Not every member is participating and those who are participating do not always participate. As a result it is not always clear who is going to work, making the working schedule therefore is difficult and often the working plan and working schedule has to be revised. This causes a delay in the harvest activities, which can be harmful for the relationship with the sawmill company. Partly the lack of participation of members is solved by re-emplacing them with
contracted persons. The board however wants to improve it furthermore by organising the CFE more as a company, forcing members to sign a working contract when they want to participate in the forest activities.

In the last place, board members mentioned problems and conflicts concerning financial issues. The problems of the past caused a suspicious attitude among some members towards the board-members, especially concerning payment of wages. “Some members want more money than they deserve. When I don’t give it to them, they think I just don’t want to give it to them.” When the sawmill company did not pay the board, they do not have enough money to pay all members the amount they deserve, after which some members start to complain about the board-members. Sometimes they have to explain it several times before people want to accept it. It is unclear how to deal with payments for those members who do not participate anymore, if they have to be involved in the distribution of profits or not.

6.3.6 Conclusion

The characteristics of Apiat, described in the previous paragraphs, are summarised and presented in Table 6.3. The main internal transaction costs are delays and time and efforts needed to resolve problems. Despite of the opportunities to develop a profitable and growing enterprise, the internal transaction costs are slowing down the performance of Apiat. The causes of these costs can be categorised in three components: (1) difficulties in decision-making, implementation, and risk of taking wrong decisions because of misunderstandings, failing management and a lack of equipment, (2) delays in decision-making and implementation due to absence of members during meetings and activities, and (3) conflicts about financial issues. To some extent these causes are interrelated, as will be shown below.

Cooperation is considered difficult as many ideas exist(ed) which causes delays and conflicts in the performance of Apiat. However, it is not only group size that influences the performance, the current course of business in return influenced the group size and heterogeneity: many members left the CFE because of unsatisfactory results and remaining members changed their ideas and priorities, heading for at least some results of Apiat. Nevertheless it is still considered a hard job to manage the group, in particular because of misunderstandings and absence of members during meetings and activities. This was moreover strengthened by a failing management of the former board. These shortcomings and faults resulted in delays concerning decision-making and implementation, and it further diminished the enthusiasm among members and their mutual trust as well as the credibility of a well-developing CFE.

Because of feelings of distrust, especially between members and the board and concerning financial issues, cooperation still operates difficultly and members are less inclined to participate consequently in meetings and activities. The distrust furthermore resulted in a weak social unity among the members of Apiat. Thus in general, social capital appears to be
<table>
<thead>
<tr>
<th>Group size and heterogeneity</th>
<th>Land-use valuation</th>
<th>Social Capital</th>
<th>Participation</th>
<th>Internal transaction costs</th>
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<tr>
<td>25 official members (18 active)</td>
<td>Quite similar average valuations for most practices, but diversity among members</td>
<td>Both good and very poor relations of trust</td>
<td>Decision-making:</td>
<td>Delays because of:</td>
</tr>
<tr>
<td><strong>Heterogeneity:</strong></td>
<td>Slightly higher valuations for agricultural practices, forest product collection and cattle-breeding</td>
<td>Reciprocity and exchange very poor in the past, now improving</td>
<td>Established interactive participation**</td>
<td>Difficulties due to misunderstanding and a failing board</td>
</tr>
<tr>
<td>Cultural background (+), educational level (+/-), age (-), opinions (-)*</td>
<td>Very diverse valuations of Apiat</td>
<td>Self-autonomy norms seem to dominate, though board reforms the CFE more as a company</td>
<td>In practice: board does not often consult members, board has stronger voice***</td>
<td>Lacking equipment and problems with bad or lacking food at forest camp</td>
</tr>
<tr>
<td>In general: considered to be slightly heterogeneous</td>
<td>General ideas regarding Apiat: recent internal improvements, finalisation of regulations, established CFE; but: little positive effects yet, many deficiencies, poor internal communication</td>
<td>Fragile networks now improving, internal group: former board</td>
<td>Two to three meetings per year, extraordinary meetings: once per two weeks, turnouts 60-80% or less</td>
<td>Too low turnouts during meetings and activities</td>
</tr>
<tr>
<td><strong>Advantages:</strong></td>
<td></td>
<td>Implementation:</td>
<td>Time and efforts needed to:</td>
<td>Organise working schedules, difficult due to inconsequent participation</td>
</tr>
<tr>
<td>Providing labour forces for CFE, more knowledge and ideas (complementary)</td>
<td></td>
<td>Seven members always, six now and then, different frequencies</td>
<td>Resolve financial conflicts</td>
<td></td>
</tr>
<tr>
<td><strong>Disadvantages:</strong></td>
<td></td>
<td>For the rest: contracted workers</td>
<td>Restore internal relationships</td>
<td></td>
</tr>
<tr>
<td>Hard to manage, financially less attractive (lower benefits), no equal participation levels, high responsibility for board</td>
<td></td>
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<td></td>
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</tr>
</tbody>
</table>

* Level of homogeneity: ++ means homogeneous, -- means heterogeneous (total range: ++, +, +/−, - and --).
** See table 2.1 for explanation of participation typology.
*** Some members have the idea that it is a consultative or even passive participation level.
low. Probably this is the reason why the board tends to appropriate more responsibilities and moreover tries to strengthen their own position. Because of this, some members have the idea that they are participating in decision-making in a consultative or even passive way, not being conscious of the established interactive participation level for all members. This however did not result yet in problems or conflicts in the group.

The dissatisfaction concerning the performance of Apiat is furthermore reflected in the valuations respondents gave for the different land-use practices. The practice of Apiat does not have a high priority and receives a quite similar valuation as several other practices. Especially agriculture and cattle breeding seem to compete with Apiat, and for some members cacao growing is considered an interesting alternative. Besides several members or former members now have a job in the service industry or business sector. Also these competing land-use practices and alternative job-opportunities are resulting in lower motivations for Apiat, decreasing furthermore the participation levels. The performance of this CFE consequently is confronted with difficulties and delays in decision-making and more time is needed to execute their activities. It might however be questioned if the preference for other land-use practices caused the (similar or lower) valuations for Apiat, or that dissatisfying results of Apiat motivated members to search for other alternative land-use practices (this will further be discussed in paragraph 7.3).

Fortunately in recent times many things changed: a new board is established that improved internal relationships and the credibility of a well-growing CFE. Though they still have to cope with and overcome several remnants of the past, a new future seemed to be expressed both by members and the board, hoping for more luck than in the past and a stricter way of working and cooperating.

In general the group size and its heterogeneity caused many internal problems that resulted in a reduction of the group size. Now especially poor social capital seems to obstruct the performance of Apiat, resulting in internal transaction costs: delays in the performance and time and efforts needed to resolve internal problems. Recent improvements need to cope with long established problems, and has to compete with other land-use practices. This has both implications on decision-making and implementation, though new decisions concerning organisational structure tend to overcome these problems.

### 6.4 Agrofort

As said in paragraph 6.3, Apiat had principally approximately 35 members. Already in the first year a part of the group left the group “because the others had other ideas, we wanted to do forestry in a different way and wanted to be a more homogenous group”. They formed a new CFE: Agrofort with a board of four members, of which two are the ones who started

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19 Official name: Agrupación Agro Forestal de Tumupasa (Agroforest Group of Tumupasa)
this CFE and still are the main persons in Agrofort. The forest area they applied for is located approximately 20 km from Tumupasa. In their first year they executed a forest inventory and wrote a forest management plan which was approved in 2000, their first annual harvest plan was approved in the same year. Since then they are annually doing the forest inventory, forest harvest and wood sale. During data collecting they were already working for their fourth year, and started to build a sawmill (paid by savings of previous years). Through this sawmill they hope to earn more, giving them the possibility to buy each year more equipment. This will make them more and more independent, which is their general goal. In these years they were and sometimes still are assisted by local NGOs (mainly BOLFOR) and a full-time contracted forest engineer.

6.4.1 Group size and heterogeneity

Agrofort has in total 16 members (all men), though six of them are hardly or not participating because of other jobs and activities. They are all from the Tacana tribe and grew up in the region of Tumupasa, where all members also live now. The ages of the members range from young people around 25 years old to older people above 45 years old, with an average age of approximately 35 years. Both their cultural background and ages are thus rather equal. The educational level is slightly varying, though almost all members attended school for 8-12 years (kind of primary and secondary school), the legal representative even finished a college. Enough knowledge and experience seems to be present, and this will increase in the near future as a board-member’s son will finish his study forestry in 2005 and will participate in Agrofort assisting the forest engineer. In terms of heterogeneity, this group is considered homogenous, “ideas are hardly varying” and “nobody is imposing his will, we have the same vision”. In the past the situation was different, but it has improved because “we are now really working and reached many times consensus, consequently we have come together with respect to our ideas”.

Working together on productive activities delivers both advantages as disadvantages. Since the group of Agrofort is working for several years, the three interviewed board-members easily could mention several advantages of working together in a group (specific for Agrofort):

- With such a group there are more possibilities and a bigger job can be executed, as there are many labour forces. Consequently they have higher revenues, which favours all members. Besides, more people profit financially from the same job.
- Working with just ten members (in comparison with the group of 35) is easier as each member feels more responsible for Agrofort. Cooperating is furthermore easier as they have to take account of just ten people.
- Specific tasks can be distributed over members. Members can receive a specific task or responsibility, which facilitates the activities and gives members the opportunity to learn and practice a specific task. Moreover, when rotating these tasks, “each member will learn to manage”.
- Because they are an official group, it is easier to receive assistance from for instance NGOs. Several NGOs assisted them with workshops and training sessions to
improve knowledge and skills concerning management, administration and harvest activities.

They mentioned also several disadvantages that however are considered of low importance:

- More expenditures for internal issues. More people working in the forest also means more food, more payments of workers.
- Administration needs to be more effective, because working schedules are complicate. Besides it is harder to control the activities of the group as many activities are undertaken by many persons.
- Managing the group is furthermore difficult as members do not have the same level of understanding and they sometimes have different ideas. Moreover it is a disadvantage that they cannot always comply with ideas of all members.

Because the active participants of the 16 members do form a homogenous group, cooperation delivers both practical and financial advantages. Group size and its homogeneity thus seem to favour the performance of Agrofort, though it is not considered easy to manage such a group and implement an effective administration.

6.4.2 Land-use valuation

In contrast, concerning the way of existence, the CFE-members seem to form a slightly heterogeneous group as besides monte alto (FM) only chaco is applied by all respondents (see figure 6.7). The other land-use practices are just practiced by a part of the group. Though the majority applies also barbecho, hunting and monte alto (products), just some respondents applied huerta, pasto / pampa and cacao growing. However, it might be questioned how strong the application of different land-use practices reflects the extent of heterogeneity. When looking at the valuations of land-use practices, new insights seem to come up. The comparative perspectives of the eight respondents on the importance of the different land-use practices in comparison with the practice of Agrofort are presented in figure 6.8. (see paragraph 6.1.2 for general comments on the original data, applied calculations, and explanations of the figure).

Considering these figures, one remark has to be added. During the interviews with respondents of Agrofort, the existence of cacao growers was yet unknown for the researcher. The last respondent of Agrofort told of the existence of cacao growers as a separate practice in the village. Afterwards another respondent said he was also practicing cacao growing. That is why only two valuations exist for this type of land-use. The last respondent moreover was the president of that group and told that three or four other Agrofort-members are participating as well in this group and consequently practicing this type of land-use.

As said before, chaco and monte alto (FM) are the only practices applied by all respondents. Moreover, these practices receive the highest valuations. The figure shows the relatively low valuations for other practices, though barbecho and monte alto (products) still do have a certain
importance for most members. The two respondents who also applied cacao growing gave this type in comparison with monte alto (FM) a quite similar valuation and is highly appreciated by them, as one respondent said: “Both are nice, Agrofort for its forest activities and cash income, and cacao growing for its cultivation; moreover the income from Agrofort is very welcome for cacao growing.” When ordering the preferences of land-use practices by the respondents, this practice (cacao growing) was preferred respectively as the first and third main land-use practice. Remarkable however are the general higher valuations for chaco and the extremely high valuations for the practice of Agrofort. Respondents appreciate chaco because it delivers food and thus gives them a steady security to survive, accordingly most of them gave
it the second highest valuation, while the practice of Agrofort was given the highest valuation (just two respondents gave one or two other practices a higher valuation).

This high average valuation for monte alto (FM) directly catches the eye. According to respondents their “economic situation has improved”, and because of the really developing CFE, respondents were positive about Agrofort. They appreciate the new economic situation that increased their income and gives them a secure job, and they are glad to have had hardly any big internal problems, now being a united group. When the respondents were asked to give a mark for Agrofort between 1 and 10, they gave it a relatively high valuation with globally an average of more than 8. Agrofort gives them the possibilities to develop and elaborate ideas. Besides it can be done legally and though it is still in process, it does develop relatively well, only disturbed by some mistakes and shortages. Capacity and knowledge are moreover increasing, they do have more and more own equipment, and market products are improved in comparison with the past and will be further improved because of the sawmill.

Half of the respondents admitted that they have less or no time for the agricultural activities, though they also said to be “less dependent on agriculture”. One respondent even had not been working in his agricultural garden for several years: “Agrofort delivers all my incomes, and now we can buy all our food.” Also less time for hunting was mentioned as an effect of participating in Agrofort, though hunting became less important for the same reason: they now buy their meat in the village, “while hunting costs me a lot of time”. Economic successes of Agrofort apparently made this new land-use practice an attractive alternative, which after several years already out competed most other land-use practices. Only some agricultural practices still have a certain importance because of its steady and secure supply of food and income, but do not really obstruct the performance of Agrofort.

6.4.3 Social capital
The positive valuation is also valid for the relation between the board and the CFE-members as well as among the members. These relationships are considered to be good or very good: “we know almost everything, there are no secrets” and “the group is peaceful”. Sometimes there are some discussions about the activities, but it is often of no importance. Because of these well developed interrelationships, members do not (or hardly) suspect each other and no negative reactions were heard concerning the board. Members furthermore feel responsible for Agrofort and expect others to take their responsibility as well: “Everybody has a responsibility; you have to show that, you have to work, you have to take your responsibility.” When they do not attend meetings, “in time, others will take me less serious”. They expect real and serious participation, considering Agrofort as a serious business.

20 After most interviews of Agrofort it became clear that two mark-systems exist in Bolivia: a scale from 1 to 10, but also a scale from 1 to 7. It was not really clear which scale each respondent used to give a mark, though they were asked to give a mark between 1 and 10. E.g. one of the respondents replied: “It is excellent, I give it a 7,” after which he only could mention positive aspects. Therefore no clear average mark can be given.
somebody does not turn up for forest activities, he can expect a critical note of co-members: “Why did you not come to help? We have lots of heavy work and we need your help!”

Nevertheless, also among members of Agrofort the non written rule exists (as explained in paragraph 6.1.3), stating that every member has and must have the right to do what he wants: when he has other things to do, he is free to go even when he has to neglect activities of Agrofort: “They (the board) are flexible and tolerant concerning requests of members for free days or weeks, even when somebody does not want to participate for a year because of other activities.” On the other hand the board introduced a system of contracts. Most members now have a working-contract delivered by the board. Because of the contracts, members are more responsible, moreover they “feel more responsible for their work and participation, there is more pressure, which works well”. Besides, it simplifies the elaboration of working-schedules by the board. When members with a contract do not turn up, their salary is reduced. According to the local key-informant of CIPTA also in Agrofort a sanctioning rule exists when members do not turn up for meetings, though none of the members or board-members mentioned this rule.

Concerning internal groups, all members responded that informal groups do not exist within Agrofort, only with regards to working teams and in the distinction between members and temporarily contracted workers. For the rest they do form one group, “which is better, there are even no internal groups with regards to the board-members and other members.” Good internal relationships, well developed relations of trust, rules and social pressure for reciprocity and exchange together form a strong unity with high levels of social capital and consequently streamline the performance of Agrofort.

6.4.4 Participation

The internal situation was different in the beginning. As said before, initially two men (now the main persons of the CFE-board) started with the idea to form a separate CFE. They elaborated their idea, after a while assisted by a third person (now one of the board-members) and presented their ideas to the (newly formed) group. Though the members had a say, these two men were the ones who made the final decisions. This however changed: now all members have a vote in important decisions. When somebody (board-member or ordinary member) has an idea or proposal, it first has to be discussed in a meeting. In practice mostly the board-members come up with ideas and proposals, asking the members to give their opinion. They discuss about the subject until they reach consensus. This concerns important subjects regarding current operational activities, future perspectives and ideas. The board however is still entitled to make some decisions themselves, especially regarding wood prices and contracts with the sawmill enterprise. One member even said that members only are functioning in a consultative way, though others contradict this opinion: “Now everybody has a voice in decision-making.” Nevertheless the board-members seem to have a stronger position and voice in the group, moreover because the present four board-
members will remain in their position and no changes have taken place in the board-composition.

In several ways members stay informed about Agrofort: (1) they talk with each other on the street, “we live close to each other, so everybody passes information on to the others”, (2) once a year a newsletter is delivered, containing the financial annual report, and (3) members are informed by means of meetings, the most important way to stay informed. Meetings with all members are held more frequently when forest activities are started: one or two times a month, elaborating the working schedules and making decisions regarding the forest activities. Meetings to discuss the forest activities’ progress are held each weekend (if possible) with the participating members. Turn-outs during meetings are relatively well: mostly all members are present, because the meetings are considered to be obligatory and interesting, besides they see it as important to attend the meetings, “because we are collaborating as a group” and “you better go to let them hear your voice and opinion”. Besides the board-members meet rather frequently, though more as a “continuous cooperation”. Though members are all men, also their wives sometimes participate in meetings, for instance when their husbands are hindered to come.

This group initially had approximately twenty members. It took however some time to get started; therefore several members quitted the group, complaining that they gain nothing: “I want to receive money, but there is no money, it is not a job.” As said before, now 16 members remained. Eight members have a contract for full-time participation, while four others are working now and then, not having a contract because of other activities and responsibilities. Mostly ten members are working in the forest, which is not enough for the activities to be undertaken; therefore they had to contract ten other men, of which most are experienced woodcutters. They mainly come from Tumupasa and sometimes are relatives of members. These twenty persons are working for approximately half a year in the forest, executing the forest harvest, forest inventory and other preliminary activities. Because of the contracts with members, forest activities are planned and executed more easily as the participation of members is more secure. In the past forest activities were executed with more problems, now they are better organised, as several different tasks are distributed among the members, holding several members responsible for specific tasks.

6.4.5 Internal transaction costs
Despite of the relatively well developing CFE they are also confronted with some internal costs of organisation. When the members were asked about internal problems and conflicts, most respondents answered that there are no conflicts or problems, nor in the past nor at this time: “We have never had problems between members.” Some respondents however said that they have “just a few, superficial problems,” or: “always a little bit”. When asking further, almost all respondents admitted that they sometimes have some arguments and problems.
Firstly, there are sometimes arguments concerning financial and operational issues, but especially regarding salaries: “Some members worked a lot and receive little, while others worked scarcely but receive much.” This is the result of different wages per type of labour. The wages per type of labour however are recently more equated, which resulted in lesser arguments regarding wages. Consequently this problem has decreased. Besides there are sometimes problems or arguments concerning the activities, but these are often easily solved and of little importance.

Secondly, several members complained about members who participate too little. “Some members do not work while they do have time and possibilities to assist us.” This problem reduced after the implementation of contracts, members participate more regularly since then. Unfortunately however, some members do not always live up to their contract, and because not every member is working with the same frequency, planning the working schedule remains difficult. On the other hand, one of the board-members said: “If members do not want to work, they don’t have to, they are free to do what they want,” though this was probably said with regard to their choice to work frequently and with a contract, or to work occasionally and without a contract.

Thirdly, the group was and partly is lacking some capacity, facilities and equipment. One member explained that the board lacks a secretary who is acquainted with filling in forms. Moreover the board-members “do not have time to help each other (i.e. the members) to fill in the official forms”. Besides they have had problems in the past concerning food in the forest camp, insufficient transport to the forest camp, but these things are improved now. Though the accessibility of the forest camp and the harvest sites also were improved, they still have some problems with the road, especially after heavy rainfall.

6.4.6 Conclusion

The characteristics of Agrofort, described in the previous paragraphs, are summarised and presented in table 6.4. Thanks to the advantages of the group size and homogeneity with regard to the opportunities to develop a profitable and growing enterprise, and thanks to a well developed social structure, internal transaction costs are reduced. Nevertheless some costs are still slowing down the performance of Agrofort. The main internal transaction costs are delays (though minimal) and time and efforts needed to resolve problems, which causes can be categorised in two components: (1) conflicts about financial issues, and (2) difficulties and delays in forest activities due to absence of members. Several characteristics and introduced improvements however diminished these causes.

Because of the strong unity in the group, arguments among members occur occasionally. This however had to grow, as in the beginning more diverse ideas existed in the group. Probably the homogeneity streamlined this process, as well as the leadership of the board-members. As the local key-informant said, “these groups need people that have negotiating
<table>
<thead>
<tr>
<th>Group size and heterogeneity</th>
<th>Land-use valuation</th>
<th>Social Capital</th>
<th>Participation</th>
<th>Internal transaction costs</th>
</tr>
</thead>
<tbody>
<tr>
<td>16 official members (approximately 10 active)</td>
<td>Low valuations for most practices</td>
<td>Good relations of trust</td>
<td>Decision-making</td>
<td>Delays because of:</td>
</tr>
<tr>
<td><em>Heterogeneity:</em> Cultural background (++), educational level (+/-), age (+), opinions (+)*</td>
<td>Relatively high valuation for agricultural practices; but becoming less dependent on agriculture</td>
<td>Reciprocity and exchange clearly expressed</td>
<td>Firstly a passive participation of members, now an established interactive participation**</td>
<td>Lacking capacity, facilities and equipment</td>
</tr>
<tr>
<td>In general: considered to be homogenous</td>
<td>Extremely high valuation for <em>Agrofort</em></td>
<td>Rules and social pressure, partly in company style, are functioning quite well, besides self-autonomy norm</td>
<td>In practice: board leads mostly and has stronger voice</td>
<td>Time and efforts needed to:</td>
</tr>
<tr>
<td>Advantages: More possibilities, providing labour forces for CFE, distribution of tasks, easier to receive assistance</td>
<td>General ideas regarding <em>Agrofort</em>: improved economic situation, hardly any problems, united group, increasing capacity and knowledge</td>
<td>Well developed networks, no internal groups</td>
<td>One to two meetings per month, extraordinary meetings: each weekend, turnouts 90-100%</td>
<td>Organise working schedules, difficult due to inconsequent participation (strongly diminished after introduction of contracts)</td>
</tr>
<tr>
<td>Disadvantages: (Of low importance) Higher internal costs, administration needs to be effective, hard to manage</td>
<td></td>
<td></td>
<td>Implementation:</td>
<td>Resolve financial conflicts</td>
</tr>
</tbody>
</table>

* Level of homogeneity: ++ means homogeneous, -- means heterogeneous (total range: ++, +, +/-, - and --).
** See table 2.1 for explanation of participation typology.
abilities, not only for external contacts, also for internal businesses”. Maybe because of the educational level of the board-members (which furthermore could have strengthened their position), they had the abilities to lead this group and enterprise to a well-developed CFE. The initial passive or consultative participation level of members, moreover gave the leading persons the space to elaborate their own ideas, without having to take into account the ideas and opinions of the group. Although, the distinction between the leading persons and the members was not always as clear as stated here and they did sometimes consult the other members. Nevertheless it resulted in a relatively fast elaboration of the enterprise formation.

As people’s feelings of responsibility diminish with an increasing group size, members of small groups do feel more responsible for their group. However, despite of the relatively small size of Agrofort, not all members took their responsibility in joining the forest activities. Two changes were introduced to solve this problem. Firstly members were given the responsibility for a specific task, and secondly the contract-system was introduced, which was positively received and applied, slightly taking into account the non-written rule of self-autonomy. It had good results: working schedules can be made more easily (though it is still considered a difficult job) and participation is regulated more strictly. These participation-‘rules’ finally solved part of the participation problems and improved the execution of forest activities. Besides, due to the increased homogeneity concerning ideas and the willingness of members to participate, meetings are developing more easily and faster.

Because of the relatively successful progress of Agrofort the economic situation of the members is improved. It is remarkable that this seems to influence the preferences in land-use practices: the forest management activities of Agrofort receive priority in comparison with the other land-use practices. Although the agricultural activities are considered to be important, most members give Agrofort the highest valuation and priority. Because of this progress the influences seem to function the other way around: the activities of Agrofort do not seem to suffer from attention given to other land-use practices, these practices on the contrary seem to be outshined by the competition with forest management activities.

In general the elaboration shows that factors, which principally might have obstructed the performance of Agrofort, now seem to solve internal problems and consequently reduce internal transaction costs. The group size and its homogeneity seem to have strengthened social capital, which furthermore improved the enterprise. The achieved successes of this CFE finally resulted in a high priority for Agrofort’s practices among other land-use practices. Now participation of members in decision-making and implementation hardly has any delays and though it needs some time and efforts to organise and resolve internal issues, the enterprise can develop without considerable internal transaction costs.
7 Comparing the CFEs

In the previous chapter the elaboration of each CFE gave insight in the internal transaction costs and factors influencing these costs. When comparing the different CFEs, which are in different stages of development, new insights might come up concerning the development and influence of internal transaction costs and the processes of change that take place. Therefore this chapter will deal with a comparison of the CFEs, in particular concerning internal transaction costs and the influencing factors and processes. They will be compared on the five different aspects: group size and heterogeneity, land-use valuation, social capital, participation and internal transaction costs, but firstly a general comparison of the CFEs will be given.

7.1 General comparison of the CFEs

These four CFEs are operating in different phases of development. El Carmen just recently started and is still engaged in the execution of their forest management plan, executing a global forest inventory, and determining the organisational structure, responsibilities, norms and rules etc. Harvest activities consequently have not been realised yet. Macahua (they started two years before this study) almost finished their forest management plan, and are already undertaking some preliminary and harvesting activities. Apiat and Agrofort started longer ago: five years before this study. Apiat however just had its forest management plan approved after three years, and they are working in the forest for three years. Since the beginning they were struggling with internal and external problems that strongly influenced the performance of Apiat. The situation now seems to improve and future perspectives are slightly more optimistic. Agrofort had a better course of development, whose forest management plan was approved after one year. They were already harvesting and selling wood for their fourth year, now expanding their activities through the construction of a sawmill. In the performance these CFEs were however differently assisted: Apiat and Agrofort were extensively assisted by BOLFOR (also financially). The other two CFEs that started a few years later, could not count anymore on financial assistance of NGOs. They had to pay their own establishment and had to elaborate the forest management plan and organisational structure themselves, with little assistance. CIPTA and other NGOs however offer(ed) them sometimes courses and workshops to help them in the establishment of their CFE. The different stages of development and a different start of the first and last two CFEs (i.e. with or without external assistance) do not always make it easy to compare the CFEs, but insights can be given in the processes that occur in different stages of development, and the existence or decline of internal transaction costs can be clarified.
7.2 Group size and heterogeneity

The CFEs are just slightly varying in numbers of members (see table 7.1). The effect of group size manifests itself particularly in the other characteristics. Table 7.1 shows some differences between the characteristics. Especially Agrofort has relatively young members, while Macahua has the highest average age. The cause for this difference has to do with the reason of participation: members of Agrofort participate because they are interested in this alternative and already have a background in forest exploitation, while the official members of Macahua are mainly family heads, giving their family (and other villagers) the possibility to participate in this group to gain an alternative living. The actual participating people of Macahua therefore might be as young as Agrofort-members, though the older people are still the participants in meetings. Nevertheless, neither of these groups mentioned problems because of varying ages or varying backgrounds, though it is remarkable that the former CFE-board of Apiat was replaced by much younger members. People’s ideas and preferences are considered to be the main cause of the extent of heterogeneity. Especially members of Apiat, El Carmen and Macahua mentioned that varying ideas have a negative effect on cooperating in a group. In Apiat this was one of the main reasons for internal problems: conflicts, delays in decision-making, and members leaving the group to form another CFE or to search for alternatives.

Table 7.1 Comparing group characteristics

<table>
<thead>
<tr>
<th></th>
<th>Members</th>
<th>Average age</th>
<th>Educational level</th>
</tr>
</thead>
<tbody>
<tr>
<td>El Carmen</td>
<td>15</td>
<td>35 (25 – 60+)</td>
<td>8 – 10 years</td>
</tr>
<tr>
<td>Macahua</td>
<td>25</td>
<td>45 (25 – 60+)</td>
<td>2 – 8 years</td>
</tr>
<tr>
<td>Apiat</td>
<td>25 (18 active)</td>
<td>42 (25 – 60)</td>
<td>2 – 12 years</td>
</tr>
<tr>
<td>Agrofort</td>
<td>16 (10 active)</td>
<td>35 (25 – 45)</td>
<td>8 years; 1 member college</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Level of heterogeneity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cultural background</td>
</tr>
<tr>
<td>El Carmen</td>
</tr>
<tr>
<td>Macahua</td>
</tr>
<tr>
<td>Apiat</td>
</tr>
<tr>
<td>Agrofort</td>
</tr>
</tbody>
</table>

Cooperating in a group thus has different advantages and disadvantages (see table 7.2). For all groups cooperation delivers more possibilities as there are many labour forces. Cooperating is further seen as financially benefiting, especially in Agrofort (that already had several profitable years). Consequently some people leave the group when no benefits are gained, as was the case in Apiat. Furthermore cooperation is considered advantageous because of a stronger position and a “financial blessing” for the village in many ways: providing jobs and financial assistance of communal services. Nevertheless all groups have to cope with negative effects: working together on productive activities is often a new way of cooperating, which needs to be learned and consequently does not always develop without...
Table 7.2 Stage of development and advantages & disadvantages of cooperation

<table>
<thead>
<tr>
<th>Stage of development</th>
<th>El Carmen</th>
<th>Macahu a</th>
<th>Apiat</th>
<th>Agrofort</th>
</tr>
</thead>
<tbody>
<tr>
<td>El Carmen</td>
<td>Just recently started, engaged in elaboration of forest management plan and organisational structure</td>
<td>Almost finished their forest management plan and organisational structure</td>
<td>First years many problems</td>
<td>Four years harvesting and selling wood</td>
</tr>
<tr>
<td></td>
<td>No harvest activities yet</td>
<td>Undertaking preliminary and harvesting activities for one year</td>
<td>Working in the forest for three years</td>
<td>Now construction of a sawmill</td>
</tr>
<tr>
<td>Collaboration</td>
<td>Provides labour forces</td>
<td>Provides labour forces</td>
<td>Provides labour forces</td>
<td>More possibilities</td>
</tr>
<tr>
<td>Bigger area</td>
<td>Job-opportunities for whole community</td>
<td>More knowledge and ideas</td>
<td>Provides labour forces</td>
<td>Provides labour forces</td>
</tr>
<tr>
<td>Improvement of whole community</td>
<td></td>
<td></td>
<td></td>
<td>Distribution of tasks</td>
</tr>
<tr>
<td>Hard to organise</td>
<td>Hard to manage</td>
<td>Hard to manage</td>
<td>Hard to manage</td>
<td>Hard to manage</td>
</tr>
<tr>
<td>Diverse ideas</td>
<td>Financially less attractive (higher costs, lower benefits)</td>
<td>Financially less attractive (lower benefits)</td>
<td>Financially less attractive (lower benefits)</td>
<td>Higher internal costs</td>
</tr>
<tr>
<td>High financial responsibility for board</td>
<td>Members feel less responsible</td>
<td>High responsibility for board</td>
<td>High responsibility for board</td>
<td>Administration needs to be effective</td>
</tr>
</tbody>
</table>

Problems and difficulties. Especially in the first stages of development this seems to be difficult: *El Carmen* still has to cope with this problem (it is their first mentioned disadvantage) and the other CFEs had to cope with this problem in the past (especially in *Apiat*), though this is not yet fully improved. In the starting stage (*El Carmen*) especially the stronger position to start a CFE (the possibility to cooperate and a bigger area) is considered by board members to be an advantage, while lacking knowledge and experience, because of the new way of cooperating, are considered to be a disadvantage. In the next stage (*Macahu a* and *Apiat*, who undertake harvest activities without real benefits yet), especially joining together forces, experience and knowledge as well as the assistance for the rest of the community are mentioned as advantages. Both groups mentioned the low feelings of responsibility of members as a disadvantage as well as the distribution of benefits among members. After several years of harvesting and with benefits both for members and the community (*Agrofort*), other advantages are mentioned: the high feelings of responsibility, possibility to distribute tasks within the group and more possibilities in relation with other organisations. Disadvantages are also more specifically related to the activities: there are more
expenses for internal issues and administration needs to be effective. In each stage working together delivers advantages as well as disadvantages. However, mainly the future perspectives and willingness of members to reach that goal is a driving factor in the progress of the CFE. The situation of Agrofort and the recently improved situation of Apiat prove that disadvantages can be diminished and advantages be strengthened: they introduced organisational changes to reduce the low responsibility feelings of members, and to improve participation levels. These examples furthermore give hope for other recently started CFEs. Board-members of these recently started CFEs (Macabua and El Carmen) consulted often members of Agrofort and Apiat to prevent pitfalls and to know how to develop a well organised group.

7.3 Land-use valuation

Changes also take place in land-use practices and valuations. The four CFEs undertake their activities in the same region in separate forest areas. The surroundings of people’s settlements however are varying. Members of El Carmen live partly in a small village in the forest, and some of them are living in Tumupasa, which is one of the main urban centres in the region. Several sawmills are operating in Tumupasa and new economic activities are practiced. This village however is still surrounded by forests (though some parts are adjoined by agricultural fields). All members of Apiat and Agrofort are living in Tumupasa. The village Macahua is located in a different area (see appendix 2) and is surrounded by pampas (natural savannahs), forests, and a river passes by in the near vicinity. This village is almost as small as San Silvestre (where members of El Carmen are living). All respondents apply a system of integrated land-use practices. Combinations of land-use practices however vary between groups and members. Fishery for instance is almost only applied by members of Macabua, as they are the only respondents living near a big river. To compare the land-use valuations of the CFEs, the valuations (number of maize grains) given by members are used. The comparative valuations among CFEs for several land-use practices are presented in figure 7.1. Dots represent the average amount of maize grains given to this type of land-use practice.

When comparing these valuations, several main conclusions can be made.

Firstly, agricultural activities (mainly chaco) are important for all respondents, but members of Agrofort give it a slightly higher valuation than the others, while members of Macabua seem to valuate this type lower than other groups (see figure 7.1 a). It is however remarkable that Agrofort did not have big problems with low turn-outs during meetings due to other activities, while respondents of El Carmen (who give it a lower valuation) complained that members are sometimes absent because of activities in their chaco. Several reasons can be given for this contradiction. Firstly, regulations in the CFEs (as the sanction rule for absence and the contract system of Agrofort) force members to participate in meetings and activities. These regulations might have been resulted from problems in the past. Which is plausible as El
Figure 7.1 Comparing land-use valuations concerning (a) chaco, (b) monte alto (FM), (c) hunting, (d) monte alto (products), (e) pasto/pampa, and (f) cacao growing.
Comparing the CFEs

Carmen (that just recently started) has most problems with the competition with this land-use practice. Secondly, members are not yet acquainted to integrate this new land-use practice, which moreover does not yet provide them with any results to replace (part of) the income derived from their chaco. Agrofort however has more experience and organises the activities and meetings while reckoning with other activities of members. Though chaco isvaluated by Agrofort members higher than in other groups, this land-use practice is seen more as a secondary important land-use practice to count on.

When comparing the practices hunting and monte alto (products) (see figure 7.1 c and d), these practices seem to be more supplementary: the further and more successfully a CFE develops (in the figure from left to right) the lower the valuations for these practices. Only the valuation for monte alto (products) by members of Macahua forms an exception. This might be attributed to the place of living, as they are living in an area with less forest. These practices, which origin from the past, consequently seem to be out competed by the practices of the CFEs.

The figures of pasto / pampa and cacao growing are more complicated (see figure 7.1 e and f), the more because not all respondents practice these types. These practices are moreover not long established but also recently introduced. Half of the respondents of El Carmen and Macahua practice pasto / pampa, while most members of Apiat and just a few of Agrofort do. Especially Apiat members appreciate this practice. It is remarkable that Macahua members do not practice and valuate it more as they already have (communal) natural savannahs and do not need investments for site preparation. This figure however is slightly misleading as people were asked to valuate the practices that they really apply and not the practices that they want to apply. Many respondents told that they like to practice cattle breeding, but do not have the financial possibilities to buy cattle. This already became clear of the respondents of Apiat who had a pasture but not yet cattle. Especially for these members cattle breeding appeared to be an alternative land-use practice as forest harvesting was still disappointing. Others in this group sought an alternative in cacao growing, which however was more practiced and higher valuated by members of Macahua. Especially in this group cacao growing appeared to be an interesting alternative among the members, but as no products were harvested yet, it is hard to say in which way this practice will influence the performance of the CFEs. The possibility for women to participate in cacao growing might relieve the competition between this practice and the CFE’s practices (which is mainly elaborated by men).

The valuations of monte alto (FM) (see figure 7.1 b) seem to be correlated to the stage of development and successes gained so far (see also table 7.3 in which the main aspects of land-use valuations as described in this paragraph and chapter 6 are summarised). In contrast with figure 7.1 c and d, these valuations increase when the CFE is in a further stage (in the figure from left to right). Only the valuation of Apiat members forms an exception, which can be attributed to the exhausting and disappointing development of the CFE. The credibility of this CFE suffered from many problems in the past, which causes members to
be pessimistic and reserved in their valuation for *Apiat*. When things develop rather well, the CFE receives a higher valuation, as became clear from the figures of *Agrofort*. The other alternative practices are even outshined by the activities of *Agrofort*. It might be questioned however if this will also be the result for the other CFEs. When *Agrofort* started, hardly any alternatives were present, whereas nowadays people can choose among several alternatives: *cacao growing* forms an important practice, and more and more villagers want to start with cattle breeding (partly stimulated and assisted by NGOs).

In general it seems that especially in the starting stage and when a CFE develops difficultly, CFEs are suffering from members’ preferences for other land-use practices (see table 7.3). This becomes visible in problems concerning turnouts during meetings and especially forest activities. On the other hand the different land-use practices do not exclude other practices and are still combined in their livelihood strategies. The system of integrated land-use practices does not remain static, but is changing over time as new alternatives come up. So far, agricultural activities always remain important for respondents (except for one respondent), importance of forest products is declining and new alternatives (*cacao growing, cattle breeding and forestry*) receive varied attention, partly depending on expected and obtained (financial) successes. In this process of change in integrated land-use practices, mutual influence is thus present, though the practices of the CFEs are just marginally hindered by priorities for other practices, especially when positive results are achieved.

### Table 7.3 Comparing land-use valuations in general

<table>
<thead>
<tr>
<th>El Carmen</th>
<th>Macahua</th>
<th>Apiat</th>
<th>Agrofort</th>
</tr>
</thead>
<tbody>
<tr>
<td>High valuations for forest products collection and agricultural practices</td>
<td>Quite similar valuations for most practices</td>
<td>Quite similar average valuations for most practices, but diversity among members</td>
<td>Low valuations for most practices</td>
</tr>
<tr>
<td></td>
<td>Slightly higher valuations for agricultural practices and practice of <em>Macahua</em>, cacao growing for some more important; some competition between them</td>
<td>Slightly higher valuations for agricultural practices, forest product collection and cattle-breeding</td>
<td>Relatively high valuation for agricultural practices; but becoming less dependent on agriculture</td>
</tr>
<tr>
<td>Hesitant (awaiting) attitude regarding El Carmen</td>
<td>Dual attitude regarding <em>Macahua</em> legal and economic alternative, hardly any problems; but: still insecure, little positive effects yet</td>
<td>Very diverse valuations of <em>Apiat</em></td>
<td>Extremely high valuation for <em>Agrofort</em></td>
</tr>
<tr>
<td></td>
<td>General ideas regarding <em>Apiat</em>: recent internal improvements, finalization of regulations, established CFE; but: little positive effects yet, many deficiencies, poor internal communication</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>


7 Comparing the CFEs

7.4 Social capital

Though land-use valuations seem to have a reduced impact on the development of the CFEs, social capital seems to be much more determinative regarding the performance of a CFE, as already became clear in chapter 6. Table 7.4 gives an overview of social capital per CFE, elaborated in the four main aspects.

Table 7.4 Comparing social capital, summarised regarding the four aspects

<table>
<thead>
<tr>
<th></th>
<th>El Carmen</th>
<th>Macahua</th>
<th>Apiat</th>
<th>Agrofort</th>
</tr>
</thead>
<tbody>
<tr>
<td>Relations of trust</td>
<td>Poor relations of</td>
<td>To some extent</td>
<td>Both good and</td>
<td>Good relations of</td>
</tr>
<tr>
<td></td>
<td>trust</td>
<td>poor relations of</td>
<td>very poor relations</td>
<td>trust</td>
</tr>
<tr>
<td></td>
<td></td>
<td>trust</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Reciprocity and exchange</td>
<td>Little reciprocity</td>
<td>Sometimes failing</td>
<td>Reciprocity and</td>
<td>Reciprocity and</td>
</tr>
<tr>
<td></td>
<td>and exchange</td>
<td>reciprocity and</td>
<td>exchange very</td>
<td>exchange clearly</td>
</tr>
<tr>
<td></td>
<td></td>
<td>exchange</td>
<td>poor in the past,</td>
<td>expressed</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>now improving</td>
<td></td>
</tr>
<tr>
<td>Common norms, rules and</td>
<td>Self-autonomy</td>
<td>Communally</td>
<td>Self-autonomy</td>
<td>Rules and social</td>
</tr>
<tr>
<td>sanctions</td>
<td>norms seem to</td>
<td>organised</td>
<td>norms seem to</td>
<td>pressure, partly</td>
</tr>
<tr>
<td></td>
<td>dominate</td>
<td>community,</td>
<td>dominate, though</td>
<td>in company style,</td>
</tr>
<tr>
<td></td>
<td></td>
<td>though self-</td>
<td>board reforms the</td>
<td>are functioning</td>
</tr>
<tr>
<td></td>
<td></td>
<td>autonomy norms</td>
<td>CFE more as a</td>
<td>quite well, besides</td>
</tr>
<tr>
<td></td>
<td></td>
<td>are existing</td>
<td>company</td>
<td>self-autonomy</td>
</tr>
<tr>
<td>Networks and groups</td>
<td>Well developed</td>
<td>Well developed</td>
<td>Fragile networks</td>
<td>Well developed</td>
</tr>
<tr>
<td></td>
<td>networks, no</td>
<td>networks, no</td>
<td>now improving,</td>
<td>networks, no</td>
</tr>
<tr>
<td></td>
<td>internal groups</td>
<td>internal groups</td>
<td>internal group:</td>
<td>internal groups</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>former board</td>
<td></td>
</tr>
</tbody>
</table>

This table shows a remarkable differentiation in relations of trust among the CFEs. In general people in this region have a quite suspicious attitude towards other people, which easily deteriorates when people make mistakes or fail in taking their responsibilities. Although *El Carmen* does not yet have any internal financial problems, many members expect them in future and they expressed distrust towards fellow-members. A considerable amount of *Apiat* members and a few members of *Macahua* accused their board to lack transparency, especially regarding financial issues, which was considered the result of poor communication. It needs some efforts and according to one respondent especially a good management to improve mutual trust. It is however remarkable that in general relations of trust improve after a period of collaboration, except when they had to deal with internal problems and conflicts. The possibility of improvement is demonstrated by *Agrofort* whose members expressed their internal relationships as “very good”, “peaceful” and “without any secrets”. Hardly any suspicious comments were heard, and members do feel responsible for their enterprise.

The same development can be seen in the varying forms of reciprocity and exchange, as they depend partly on relations of trust. Most respondents expect their fellow-members to participate as much as possible and in the groups with participation problems (mainly *El Carmen* and *Apiat*) the low turnouts was an often heard complaint. On the other hand, in
Macahua it was perceivable that members do not want to impose each other with rules, but a strong mutual unity and control forces them to participate. This group was favoured by its strong internal social structure with apparent feelings of reciprocity, which resulted in the lowest participation problems of all four CFEs. In Agrofort the expectations among the members of real and serious participation and the fear to loose credibility when omitting their responsibilities, strongly influenced the strict participation of most members. Furthermore, successes of the CFEs seem to stimulate the forms of reciprocity and exchange, while disappointments are discouraging them.

The influence of specific norms, rules and sanctions depends on their nature, intensity and application. The non-written rule of self-autonomy is a strong underlying rule in all groups. This rule was mostly heard during interviews with members (and non-members) of El Carmen. This group had most participation problems because of the attitude of members to do what they want, without taking account of group interests. Also Apiat had to deal with members who gave the CFE a low priority, though this can be attributed to disappointments. Other groups are not deprived of this attitude, though the effect is diminished. The attractive economic perspective of forestry partly convinced members to give their CFE a higher priority, though several arrangements were needed pushing members to give the CFE a higher importance in their daily life. All four CFEs do have a sanctioning rule for absence during meetings, although Apiat did not apply this rule for a long time (and had to cope with the lowest turnouts during meetings). In general people are more motivated to attend meetings because of this rule. Various reasons of absence however can release members of this sanction, which weakens the effect of this rule. In forest activity matters Agrofort introduced a more effective system with contracts, to reduce absence during activities or at least to improve the stability in working schedules.

Internal relationships are in general well developed. Agrofort members describe their group as a unity, without any informal internal groups. Also El Carmen is deprived of internal groups, though they just recently started, and such groups could hardly have formed yet. On the other hand, this group is not yet considered to be a group with a strong unity, mainly because of failures in the participation patterns of members. In comparison to the other CFEs Apiat has a weak internal relationship, members often do not feel very responsible for the progress of their CFE and representatives are (or were) hardly able to change this. After several years of failures and bad luck, members’ motivations are almost only driven by successes of the enterprise. The replacement of the board results sometimes in conflicts between the former and present board. Also during forest activities, mutual frictions sometimes occur, as some members do not want to cooperate with other members. In contrast, Macahua shows a much stronger unity, already embedded in the village structure, which is communally organised.

In general, social capital seems to have a considerable influence on the performance of a CFE. These cases show the importance of strong social capital to streamline the development of a CFE and to reduce internal conflicts and problems. The internal coherence
Although several things already have been said concerning nature and level of participation, and problems that consequently arise, several things still need to be compared to show the differences and consequences between the CFEs. Table 7.5 gives an overview of participation aspects per CFE, divided in participation in decision-making and implementation. As can be seen in this table, all CFEs do have an established interactive participation level for all members, the highest level in the subdivision of Agarwal (2001). Only *Agrofort* had principally another participation level for members. In practice however this difference was less visible than might be thought: all CFEs are assisted by a forest engineer, *Agrofort* and *Apiat* were moreover assisted by an NGO at the start of their CFE. Thus in practice members of all CFEs hardly participated in the elaboration of the forest

#### 7.5 Participation

<table>
<thead>
<tr>
<th>Decision-making</th>
<th>El Carmen</th>
<th>Macahua</th>
<th>Apiat</th>
<th>Agrofort</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Established interactive participation</td>
<td>Established interactive participation</td>
<td>Established interactive participation</td>
<td>First: passive participation of members Now: established interactive participation</td>
</tr>
<tr>
<td></td>
<td>In practice: members with more knowledge and experience dominate</td>
<td>In practice: sometimes board lacks transparency and makes decisions itself</td>
<td>In practice: board does not often consult members, board has stronger voice</td>
<td>In practice: board leads mostly, has stronger voice</td>
</tr>
<tr>
<td></td>
<td>One meeting per month, turnouts 70-90%</td>
<td>Two to three meetings per week, turnouts 95-100%</td>
<td>Two to three meetings per year, extraordinary meetings: once per two weeks, turnouts 60-80% or less</td>
<td>One to two meetings per month, extraordinary meetings: each weekend, turnouts 90-100%</td>
</tr>
<tr>
<td>Implementation</td>
<td>Hardly undertaken yet, almost all members participated</td>
<td>Almost all members participated, but in different frequencies</td>
<td>Seven members always, six now and then, different frequencies</td>
<td>Eight with a contract, four now and then For the rest: 10 contracted workers</td>
</tr>
</tbody>
</table>


management plan and proposals for the organisational structure were mostly written by board-members in collaboration with the forest engineer. The main reason for the passive participation of members was their lack of knowledge and experience. Nevertheless the board still has a strong voice and often makes decisions without consulting the members, but this is often accepted and agreed by the members. With regard to the level of participation in decision-making hardly any differences exist between the CFEs.

The implication of this level in terms of meetings however shows some remarkable differences. Official meetings are held once a week (Macabna), once or twice per month (El Carmen and Agrofort) or once in a few months (Apiat). The aims of these meetings are however varying. Meetings of El Carmen are mostly needed to discuss the progress of the forest management, to discuss related issues and to make decisions with the whole group. Meetings of the other CFEs are also needed to talk about future perspectives, to organise working schedules and to present achieved results. Extraordinary meetings, mostly needed to discuss issues related to the forest activities, are less varying: between twice a week and once in two weeks. As a result each CFE has a different amount of meetings per year. Macabna has the highest number of meetings while Apiat has the lowest number (not taking account of El Carmen as this group is still in their starting phase). Only some members of Macabna complained about the amount of meetings, though most members of these four CFEs (regardless of the amount of meetings) stated that they do not have too many or too little meetings, “we have as much meetings as necessary”. As information about the duration of meetings and specific issues discussed in the meetings is missing, little can be concluded regarding the amount of meetings.

Concerning turnouts during meetings however, clearer conclusions can be made. Turnouts seem to be correlated with social capital, though successes and failures of the CFEs also determine to a large extent the turnouts during meetings. Macabna for instance had a high level of reciprocity concerning meetings, and consequently the lowest absence during meetings. Though social capital in Agrofort is stronger, it has a slightly lower level of participation during meetings, mainly because several members are looking for alternatives. El Carmen has much lower turnouts during meetings, as its social capital is yet developing and many members still have an awaiting attitude while giving other land-use practices a higher priority. In Apiat social capital is too weak to compensate the disappointing results achieved so far, and consequently they have to cope with the severest turnouts. This shows both the importance of strong social capital as well as the dependency on successes to strengthen the participation levels of members. Social capital on the other hand can also function as a factor that diminishes the dependency on successes and failures.

The same might be true for the participation in forest activities. Though board-members expect the others to participate at least in the preliminary and additional activities, in all groups many members fail in their participation and differences in frequencies of participation are the result. This complicates the making of working schedules and can cause
serious problems with external actors because of delays. Therefore the longest running CFEs (Apiat and Agrofort) sought for adjustments to cope with this problem. As a consequence Apiat planned and Agrofort actually introduced a system of contracts with members to simplify the working schedules and to ascertain the availability of workers.

In general these cases show a variation in participation levels, though natures of participation are quite similar. And although successes and failures determine to a large extent the turnouts during meetings and activities, especially social capital seems to be the decisive factor that can diminish problems concerning low turnouts.

### 7.6 Internal transaction costs

As described in chapter 6, all CFEs have to cope with internal transaction costs, which can generally be divided in delays and time and efforts to resolve internal problems. The reasons of their existence are summarised in table 7.6. With this information it is hard to indicate the level of internal transaction costs per CFE and to compare these levels. Nevertheless general tendencies can be clarified and the causes of internal transaction costs can be compared.

<table>
<thead>
<tr>
<th>Delays because of:</th>
<th>El Carmen</th>
<th>Macahua</th>
<th>Apiat</th>
<th>Agrofort</th>
</tr>
</thead>
<tbody>
<tr>
<td>Too low turnouts during meetings and activities</td>
<td>Difficulties in reaching consensus and developing statutes</td>
<td>Difficulties due to misunderstanding and failing board</td>
<td>Lacking equipment and problems with bad or lacking food at forest camp</td>
<td>Lacking capacity, facilities and equipment</td>
</tr>
<tr>
<td>Lacking knowledge and experience</td>
<td>Postponed activities due to lacking knowledge and experience</td>
<td>Lacking equipment and problems with bad or lacking food at forest camp</td>
<td>Too low turnouts during meetings and activities</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Time and efforts needed to:</th>
<th>El Carmen</th>
<th>Macahua</th>
<th>Apiat</th>
<th>Agrofort</th>
</tr>
</thead>
<tbody>
<tr>
<td>Resolve (expected) financial conflicts</td>
<td>Resolve financial conflicts</td>
<td>Resolve financial conflicts</td>
<td>Resolve financial conflicts</td>
<td>Resolve financial conflicts</td>
</tr>
<tr>
<td>Build up mutual trust</td>
<td>Organise activities clearly</td>
<td>Organise working schedules, difficult due to inconsequent participation</td>
<td>Organise working schedules, difficult due to inconsequent participation</td>
<td>Organise working schedules, difficult due to inconsequent participation</td>
</tr>
<tr>
<td>Resolve ‘damage’ caused by wrong decisions</td>
<td>Restore deficiencies in forest management plan</td>
<td>Restore internal relationships</td>
<td>(strongly diminished after introduction of contracts)</td>
<td></td>
</tr>
</tbody>
</table>
In general especially the new way of collaboration, which is yet unknown to the members, causes difficulties and problems. As a consequence mistakes are made, internal situations get worse and conflicts arise hindering the progress of the CFE as time is needed to resolve these problems. This creates furthermore feelings of incomprehension, disappointment and distrust, which decreases members’ motivation for their CFE, which is mainly visible in *Apiat*, whose board has difficulties (and worries) in keeping the group together, implementing improvements and to keep going.

The CFE with a minimum of internal transaction costs seems to be *Agrofort*. They do have to cope with internal limitations, but almost only because of a lack of capacity, facilities and equipment. This capacity however is mainly related to administrative issues and has to do with specific tasks concerning their expansion. It is thus slightly different from lack of knowledge and experience which causes delays and mistakes in *El Carmen* and *Macahua*. Due to this lack they need more time to elaborate required issues for their forest management plan, moreover mistakes during decision-making and implementation need to be restored. *Apiat* and *Agrofort* are hardly suffering from a lack of knowledge and experience, partly because they were initially assisted by NGOs and already followed many workshops. Besides, most members of these CFEs are already practicing forestry for a long time and only needed to learn how to fulfil the requirements. In general lack of knowledge and experience thus occurs in the starting phase, but is diminishing in the following years. This can furthermore be stimulated by rotating tasks (as with the ‘four plus four system’ in *Apiat*) and giving members a specific task (as in *Agrofort*), which will result in an increase of total knowledge of a CFE.

It is striking that every group has to cope with conflicts concerning financial issues or are expecting such conflicts and problems. To a large extent this has to do with mutual distrust and causes (or caused) in the CFEs frictions and discussions. Nevertheless these relations of distrust do not have such a limiting effect that members are not willing anymore to collaborate, although it stays a weak point in the collaboration. On the other hand some people decided not to participate in the CFE, or not anymore, partly because of distrust regarding financial issues.

Besides, every CFE that already is functioning has problems concerning the making of working schedules because of inconsequent and unclear participation patterns of members. Previous paragraphs already clarified this problem, which is mainly caused by the self-autonomy norm and land-use preferences, while strengthened by disappointments and hesitant (awaiting) attitudes regarding their CFE. It is attempted to overcome these problems by introducing a contract system and organising the CFE more as a company with stronger rules of reciprocity and exchange. Evaluations of *Agrofort* indicate that these changes are becoming successful in decreasing the disorder and improving the availability of workers.
8 Discussion

In this chapter, a reflection will be given on the research described. In paragraph 8.1 results and experiences of other studies will be elaborated and compared with empirical information acquired through this study. In paragraph 8.2 the conceptual framework will be discussed, using the results of this study. A reflection on the methods used to gather the information necessary for this research will be given in paragraph 8.3.

8.1 Comparing the results with other studies

This research was carried out to explore the internal transactions costs of CFEs and to explain the processes that influence the performance of a CFE. Comparing these results with findings of other studies worldwide will deliver similarities and differences, as specific situations (like culture, type of cooperation, institutional atmosphere etc.) vary. It will show the importance of some costs and influencing factors, while it illuminates other costs and factors that are location specific.

8.1.1 Other CFE experiences in Bolivia

Concerning the performance and development of CFEs in Bolivia and especially regarding internal processes and problems, hardly anything has been published. The few studies on specific CFEs (McDaniel 2003a and 2003b, Benneker et al. forthcoming) and Bolivia’s CFEs in general (Nebel et al. 2003, Cronkleton & Albornoz 2004, Benneker 2005) show a variety of situations and successes. In general smaller groups seem to function relatively better, presumably because the process of decision-making, the distribution of responsibilities and benefits are less complicated and such groups are supposed to have a transparent form of organisation (Cronkleton & Albornoz 2004, see also Klooster 2000). This can not be concluded from this study, because the two most successful groups were respectively the smallest and biggest group (though they are not varying much in numbers of members).

Problems however are never absent in CFEs. In Urubichá for instance fewer people participated because of frequent and long meetings in which only better informed persons (mostly leaders) participated in the discussions and no short term results were reached (Benneker et al. forthcoming). In Lomerio the fundamental problem (that made the whole enterprise a failure) is considered to be cultural rather than fiscal or administrative. Many of the problems that the Lomerio project experienced in labour relations, administrative capacity building, and production efficiency can be traced back to fundamental conflicts between the Chiquitano culture and the values that necessarily accompany market-based development efforts such as community forestry (McDaniel 2003a). Indigenous people are trained in agriculture and natural resource management, but knowledge and capabilities of modern forest management are low, as it is a new production system. This complicates the
communication with forest engineers and limits their contributions to discussions on management systems. Also in TCO Tacana people participated less actively in decision-making, because of a lack of knowledge and experience. As a consequence, members with more knowledge and experience in modern forest management have a stronger voice, and became important actors in the progress of their CFE. In many CFEs however, there is an on-going capacity-building taking place (Nebel et al. 2003, Cronkleton & Albornoz 2004, Benneker 2005, Benneker et al. forthcoming).

8.1.2 Experiences from Mexico

More in depth studies are available from CFEs in Mexico. Though the relative success of several CFEs in Mexico has resulted from a unique combination of advantages which may not be repeated en masse elsewhere (Richards 1992), general lessons learned from these CFEs may give more insight in the processes that take place in the CFEs of this study, the more because Mexico’s situation is quite comparable with the situation in Bolivia. As in TCO Tacana, integrated land-use systems are common in Mexico’s CFEs, combining agriculture, cattle-breeding and forestry (Klooster 2000). A new forest law (of 1986) provided the framework for communities to make decisions and obtain the benefits from managing their timber resources (Walters et al. 2005). Forest ownership clearly resides with communities that influence and implement logging plans, but the government sets the management framework. It is thus comparable with the institutional situation in Bolivia. Wealth increased at community level because of community forestry, which is visible in public works, capital equipment, and employment possibilities, especially when a sawmill was purchased. However, also in Mexico varying successes and failures are present, some CFEs even coping with severe problems. In some cases for instance, forestry generates sporadic earnings for a great number of people in the community, but substantial ones for only a select few. In addition to employment, the forestry elite also finds more direct ways to divert forestry revenues toward their own pockets (Klooster 2000). In contrast to these examples and other examples in Bolivia (for instance the CFE of Urubichá, see Benneker et al. forthcoming), the investigated CFEs in TCO Tacana do not have considerable problems concerning elite capture and corruption. Several board-members do use their position to push their ideas through, but it rather favours the performance of their CFE.

It is interesting to have a look on the successful CFEs and determine the processes and factors that determined their success. Klooster (2000) compared a bad-developing CFE with several successful CFEs. His investigations showed that these (successful) communities have common property management rules, institutional characteristics, and indigenous, university-trained professionals who returned to the community to administer the CFE. Moreover they have vigorous, regular, and well-attended community meetings, share accounting and report practices that provide members with information, and apply sanctions for those who do not show up. They face low information, transformation, and enforcement costs, partly because they share norms of reciprocity and trust. Quite the same conclusion can be drawn from the experiences of Agrofort that also developed rather successful. Other CFEs in TCO Tacana
clarify that an absence of (some of) these features obstructs the performance and induces internal transaction costs.

The communities of Klooster’s study are small and, due to cultural homogeneity and settlement patterns, they share strong initial social capital, reducing costs of collective action. Larger communities do have higher costs of collective action, but these have higher potential benefits. Some of these communities showed an ethnically homogenous population, which kept costs of collective action low. The results of his study suggest that community and social norms do more than provide cheap sanctions and discourage free-riding. They motivate group members to cooperate rather than free-ride, but they also motivate them to apply sanctions and to struggle over institutional change. They have a social and cultural condition in which it is morally right to avoid free-riding, to participate in reforestation, and to forgo the short term benefits of high-grading (Klooster 2000, see also Richards 1992, Antinori & Bray 2004). A basic principle of success in these CFEs thus seems to be social capital, which functions as glue among members, and reveals itself as a motivating factor for collective action. The same can be concluded from the investigated CFEs of TCO Tacana. Consequently a healthy organisational structure develops with strong institutional characteristics. In this process also homogeneity of a group seems to play a considerable role, though less in the CFEs of this study.

8.1.3 Findings from other studies
Also Varughese and Ostrom (2001) investigated the role of heterogeneity (in community forestry in Nepal), but conclude that “heterogeneity is not a strong predictor of the level of collective activity” (Varughese & Ostrom 2001:1). Rather it is a challenge that can be overcome by good institutional design. Successful groups overcome stressful heterogeneities by crafting innovative institutional arrangements that match local circumstances. In Agrofort for instance a contract system was introduced, which delivered an attractive full-time job for members and provided the CFE with a steady participation of members. Also according to Richards (1992), the organisational strength is of importance, but he adds more factors of which social solidarity is considered an important one.

Many other studies showed that social capital has a considerable influence. Trust, for instance, is seen as an important component of social capital (Sobels et al. 2001, Weinberger & Jütting 2001) and a psychological study showed that trust in the fairness of others is strongly positively correlated with cooperative behaviour (Gächter et al. 2004). An organisation that is perceived to be trustworthy facilitates increased participation, reduces transaction costs and enables efficient cooperative behaviour in solving collective action problems (Sobels et al. 2001). Empirical studies support the idea that trust comes from sanctions (including loss of future benefits, damage to reputations, and social pressure) as well as information and norms. Norms define what actions are considered acceptable or unacceptable and include customs of cooperation, reciprocity, avoiding deception, keeping verbal contracts and deciding on acceptable sanctions (Lyon 2000).
Social capital however does not remain static and a distinction is made between social capital as a cause and as a consequence. There is the existing social capital of relationships that is called on to form the organisation, which can enhance the community’s ability to manage resources. Then there is social capital as an outcome of the activity of the organisation, as it develops during collective action such as resolving a local conflict, (Allen 2001, Sobels et al. 2001, see also Antinori & Bray 2004). The examples of this study confirm this process: El Carmen still had low social capital to count on, while more advanced CFEs could count on social capital that developed in time. However, social capital can also decrease, for instance when results are disappointing or when conflicts and problems arise. It breaks social capital down as reliability of (board-) members or the CFE in general is damaged. All CFEs however did have enough capacity and skills to overcome internal struggles by institutional changes, though it cost them time to deal with conflicts and restore the enterprise, whereas several members did not have confidence anymore to participate.

Concerning the land-use preferences and its influence on forestry practices little has been published. Though a case in Mexico clarified that use values attributed to agricultural and forestry products became subordinate to use and exchange values attributed to commercially interesting land-use practices (in this case cattle-breeding). These peasants change their practice towards such commercially practices, mainly because they become more incorporated into markets, have relations with institutions and have a higher level of commoditisation than peasants, who produce almost entirely for subsistence. A change was visible in land-use practices that people applied, moving towards the practices that gain higher incomes (Gerritsen 1995). Data of this study show a similar tendency. Practices that provide people with cash income receive positive attention, as cattle-breeding, cacao growing and forestry, though it depends on real benefits achieved so far. CFEs that would have had benefits but still fall short in achieving considerable revenues, receive less priority, and triggers members to look for other and economically more interesting ways of income.

This study focussed on internal transaction costs concerning participation of members in decision-making and implementation. A broader distinction is elaborated by Imperial and Yandle (2005) who distinguish three types of transaction costs associated with developing and implementing policy: (1) information costs, (2) coordination costs, and (3) strategic costs. Information costs are those associated with searching for and organising information, and the errors resulting from an ineffective blend of different kinds of information. Coordination costs are those invested in negotiating, monitoring, and enforcing agreements. In a community-based system, coordination costs are associated with the social processes used to develop social capital, which often takes a long time and requires considerable effort. Strategic costs result from asymmetries in information, power, or other resources such that some obtain benefits at the expense of others. Common strategic costs include free riding, rent seeking, corruption and collusion. These different types of transaction costs can be found in the CFEs of this study. Especially the CFEs with little experience in forestry do

21 This article was published when finalising the report.
have high information costs, as they made mistakes and were not yet acquainted with the new way of cooperating in a new institutional setting with many state imposed requirements. This new way of cooperating moreover delivered for all groups high coordination costs, though these were decreasing as the process of learning continued. Strategic costs are more difficult to indicate, though all CFEs have to cope with the free-rider problem: not all members are participating but share in the benefits, or wait for better times to get involved, whereas others have to struggle in getting the CFE started.

The findings of the other studies in Bolivia, Mexico and other places in the world show several similarities with the findings of this study in TCO Tacana. It is striking that social capital (or aspects of social capital as relations of trust) plays a crucial role in the success of cooperative behaviour, as became clear both from this and other studies. The effect of group size and heterogeneity is quite disputable, as it does not have an unambiguous effect but depends more on the specific features of heterogeneity and the existence of other facilitating or limiting factors. Willingness to participate depends furthermore on the history of the group (Sobels et al. 2001), and the initial phases of group formation are often sensitive phases (Weinberger & Jütting 2001), usually complicated because of a lack of required technical knowledge, though this can change over time (Walters et al. 2005). Poor training moreover can also lead to poor bookkeeping and money management, creating confusion and suspicion even where corruption has not occurred (Antinori & Bray 2004), resulting again in lower social capital.

8.2 Reflection on the results and conceptual framework

The conceptual framework (see figure 2.1) was elaborated to reflect the assumed influence of several factors on the participation of members in the CFE, generating internal transaction costs. This framework proved to be a good approach to describe the problem field of this research. The three factors (indicated at the left side of the figure) indeed influenced both participation and cooperation, resulting in several internal transaction costs. However, the extent of each factor and the process of change proved to be different than expected previously.

As said before, the influence of group size and heterogeneity is quite variable, as most often it has both a facilitating and a limiting influence on the willingness to participate and cooperate in a CFE. The actual influence of size and heterogeneity therefore is to a large extent group specific. Social capital however is clearly positively correlated with cooperation and is one of the most important internal influences in CFEs. High social capital seems to be the (internal) prerequisite for successful development of a CFE, reducing internal transaction costs. On the other hand, land-use valuations can have a negative effect on participation levels, although especially the role that members attribute to specific land-use practices (partly based on its economic benefits), will define how it influences the performance of a
CFE. Preferences for other land-use practices might cause some members to stay away from CFE activities, whereas others will give the CFE high priority.

Both social capital and land-use valuation change over time, sometimes even influencing each other, as social capital can result in a stronger unity, diminishing the negative effect of some heterogeneity that might have caused problems in the past. On the other hand, these factors do not only influence the performance of a CFE, participation and cooperation does also build up social capital and can change a diversity of opinions among members. A successful performance of a CFE moreover influences the land-use valuations, diminishing its negative effects. Especially these processes of change in factors influences cooperation, participation patterns and internal transaction costs, and have proven to be of a great importance in the performance of a CFE, and of a great importance to understand why things go as they go.

The distinction between CFE-members and the CFE-board does also clarify the existence of internal transaction costs. Though initially all members are equal participants (in most groups), board-members become more incorporated in the performance of the CFE as they are held responsible for the CFE and actively operate to get the CFE started. They are moreover the members that attend workshop offered by NGOs, resulting in a discrepancy in information. The results of this study show that board-members are the ones who enthusiastically and actively try to get the CFE started, whereas many other members do have an awaiting and more passive attitude. It is for instance remarkable that Agrofort and Apiat need to contract external workers, while not all members participate. Consequently, almost all interviewed board-members mentioned that it is hard to manage the group, which partly resulted from the awaiting attitude of many members.

8.3 Reflection on methods

The methods used for this research were suitable to obtain information concerning the problem field. The number of interviews per group seemed to be sufficient, though it was hard to have a representative part of the group, because especially those members who were working in the forest were hard to find for an interview in the villages, whereas the others, who did not participate in the activities, where more easily found for an interview. It was attempted to prevent this problem by searching at least several participating members. When already many non-active members were interviewed, and a new respondent told not to be active (anymore) in his CFE, the interview was cancelled. The selection of four CFEs in different stages and regions (though all in TCO Tacana) gave interesting and varied information. It moreover delivered insights in the processes that take place in the different phases, providing a clearer total image of CFE development.

However, the valuation method caused some problems and was sometimes less reliable, as respondents did not always understand clearly what to do. The analyses of these results would have been more suitable and reliable if all members were asked to valuate a list of
practices that are applied in the region, instead of asking them to valuate only those practices they really apply. Their explanations consequently could have shown if they are heading for other practices (not yet applied) or keep focussing on current practices. Besides, other off-farm activities were not involved in the valuation method, while several members had other jobs. The influence of these activities therefore could have been underestimated.

Another problem arose with the mark-system. Respondents were asked to give a mark for their CFE, but after a while it became clear that two mark-systems exist in Bolivia: a scale from 1 to 10 and a scale from 1 to 7. It was not really clear which scale each respondent used to give a mark, though they were asked to give a mark between 1 and 10. This problem was resolved by giving the respondent a list of marks and explanations: 10 = excellent, 9 = very good, etc (see also appendix 3). This turned out to be a successful tool.

Because of a poor initial knowledge of Spanish of the researcher, it was difficult to interview. Probing was difficult, which made it hard to come to the core of reasons, ideas and motivations that explained the respondent's behaviour. Consequently many gaps remained. Information concerning influencing factors therefore was mainly indirectly derived from small comments or attitudes towards other members.
9 Conclusion and recommendations

The specific objective of this study was to identify and clarify the internal transaction costs, and the factors and processes that induce internal transaction costs, as these costs affect the performance of the indigenous CFEs. This contributed to the division in research questions as described in chapter 3. In paragraph 9.1 these research questions will be answered. Afterwards several recommendations will be made concerning further research (paragraph 9.2) and practical application of this research (paragraph 9.3).

9.1 Conclusion

The four investigated CFEs with 15 to 25 members are varying in level of heterogeneity. Though many aspects are quite homogenous, members are often especially diverse in opinions and ideas. This can change over time, as disadvantages of cooperation can be diminished and advantages be strengthened. Whereas joining forces delivers in each stage of development advantages, especially in the starting phase the new way of cooperating does give difficulties, because of a lack of knowledge and experience. For CFEs in later phases cooperation is seen as an advantage as one can build on supplementary knowledge and experience. The distribution of benefits and low feelings of responsibility among members are experienced as disadvantages. When a CFE is really operating and cooperation delivers benefits for all members, hardly any disadvantages are experienced; though managing such a group is considered a difficult task. Important are the relations of trust among members. Social capital does have a considerable influence on the performance of a CFE: CFEs with relative high social capital (relations of trust, reciprocity and exchange, common norms, rules and sanctions, and internal networks and groups) develop quite well because they have an internal strength to overcome collective action problems, whereas CFEs with lower social capital are coping with internal problems and conflicts.

The activities of the CFEs are integrated with other land-use practices: agricultural activities, hunting and gathering, and some recently introduced activities as cattle breeding and cacao growing. The application and valuations of these practices are however quite diverse, both between CFEs and among members of the same group. Although the practices do not exclude each other, members’ preferences for other practices do sometimes have a negative effect the performance of the CFE, especially in the starting phase and when a CFE develops difficulty. From a member’s viewpoint this is logic: they have to survive and as long as the CFE does not demonstrate its value for people’s live, they keep busy with their other land-use practices. As people are heading for economic interesting practices, little problems in competition with other land-use practices are experienced in well developing CFEs, whereas low economic benefits of the CFE causes members to give other practices a higher priority, resulting in less attention for the CFE.
Although well-developing CFEs have little problems in competition with other land-use practices, all CFEs do have members that are not (or sporadically) participating in decision-making as well as implementation. Although this is often attributed to preferences for other land-use practices, also the short term benefits and the way a CFE develops (also in the past) seem to be triggering factors. To cope with these features, one CFE introduced a system of contracts, to secure themselves with a steady supply of workers, offering these members a full-time job. This system works quite well. While all CFEs have an established interactive participation level of all members, in practice board-members do have a stronger voice. However, in none of the CFEs it resulted in big internal problems and conflicts. It sometimes even seems to be more practical as decisions are sooner made and innovations more easily applied, which streamlined the performance of a CFE.

Because of all these internal characteristics and processes, internal transaction costs arise. Two categories of internal transaction costs can be distinguished: (1) delays in the progress of a CFE, and (2) time and efforts needed to resolve internal problems. Many causes result in these costs, but especially the new way of cooperation and the new way of forestry with specific requirements seems to be of great importance. This new way of cooperation asks of members to overcome their mutual relations of distrust, especially regarding financial issues. Besides they need to build up knowledge and experience in cooperating in commercial activities and forest activities (to comply with specific requirements), as this is often lacking. Meetings moreover are required to become acquainted with CFE issues, to discuss procedures and to resolve internal problems and conflicts.

This study shows that the performance of a CFE is a new way of cooperation and does not develop easily. Internal transaction costs are to be expected when considering the different factors that induce these costs. Social capital is an important factor to keep internal transaction costs low, but it is no prerequisite as it can develop due to the process of learning. Group size and heterogeneity are less important in their influence on the performance, as the success of a CFE's progress depends more on the ability to react adequately on these features. Whether members really participate, depends to a certain extent on the competitive position of the CFE among the other land-use practices (especially in economic terms). When a CFE is successful, this success stimulates the motivating factors. So processes are not one-way but do influence each other. Consequently one might conclude that all these factors are not independently influencing the performance of a CFE, rather they are interconnected. Precisely the totality of the factors and their interconnectedness determine to a large extent the success of a CFE, more than the influence of a single factor.

9.2 Scientific recommendations

As said before, this research focussed mainly on farm- and forest-related activities when investigating the influence of other practices. However, in several places also other economic
activities, as retail business or employment in the service and industry sector, are present which importance was hardly investigated in this research. It might be interesting to have a look at the attractiveness of these activities compared to the relatively tough forestry activities. Besides it might be interesting to study in depth the motivations of people to apply a specific practice (also off-farm activities). What do they want to achieve with the combination of their land-use practices? What role does forestry play in their integrated land-use system, will it finally replace all the other activities, or are people more interested to use the benefits of their CFE as an investment in other activities? Investigating their livelihood strategies might also unravel the sustainability of the CFEs, and their chance of success in the long term.

A more anthropological recommendation for further research concerns the relations between people, especially regarding their mutual trust. This study demonstrated remarkable relations of distrust. It might be questioned where these feelings of distrust originate from. Do they arise because of the new way of cooperating? And why do people often suspect others concerning financial issues? Investigating the reasons why people have feelings of distrust and investigating the ways people are reacting to their and others feelings of distrust (both officially and unofficially through common norms, rules and sanctions) might give people, involved in relations of distrust, insight and tools to react to such situations.

9.3 Development recommendations

It might be questioned if the implementation of community forestry projects should require interactive participation of all members. When every member needs to be informed and consulted for each decision, a lot of time is needed to reach consensus and to continue with the performance. Although there are worldwide lots of examples of local elite attempting to strengthen their political and economic situation by means of community forestry projects while harming other community members (see for instance Platteau & Gaspart 2003, Platteau 2004, Benneker et al. forthcoming), this study showed the positive effects if some members do have a stronger voice (as in case of Agrofor), which resulted in a (now) successful CFE. On the other hand, the situation of Macabua showed the possibility to run a CFE rather collectively. Organising a CFE thus does not require a strict equal participation level (neither the opposite), rather it needs to be organised in a way that fits with the local situation.

Because social capital is considered to be of great importance for a successful internal performance of the CFE, it is important to take into account and discuss this subject during (especially) the starting phase. Though in a natural way people already take this into account, extra attention to this subject might prevent internal problems and conflicts. However, the importance of social capital should not be overestimated, especially not when there is a low level of social capital, as it can change in the course of time. More attention should be
attributed to the process of learning as the CFEs of this study show the ability of such groups to build up social capital and to react on situation that initially look quite difficult to cope with. Through periods of problems and conflicts, groups (or actually: individuals) learn from mistakes and difficulties, and build up social capital, also in terms of institutional arrangements, that keep their CFE going.
Bibliography


Appendix 1 CFEs in Bolivia

Appendix table 1.1 All present CFEs in the different departments of Bolivia (based on a study of Benneker). A PGMF (Planes Generales de Manejo Forestal) is a (sustainable) forest management plan.

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### Appendix 1 CFEs in Bolivia

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### Appendix table 1.2 Findings of the author on CFEs in TCO Tacana.

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Appendix 2 Location of research area

Appendix figure 2.1 Map of Bolivia (ALADI s.a.). The dotted line (added by author) is the research area, which is enlarged in appendix figure 2.2.
Appendix figure 2.2 Research area with locations of the four investigated CFEs (Expedia.com s.a.). The different grey colours represent the altitudes: the lighter the colour, the higher the altitude. The meandering line with dots represents the Beni River. Marks with numbers (inserted by author): 1 is the village San Silvestre, where most members of Ed Carmen live. 2 is the village Macabua, where all members of this CFE are living. 3 and 4 represent the CFEs Apiat and Agrofort, whose members are living in the village Tumupasa.
Appendix 3 Topic lists used during interviews

Topic list used during interviews with CFE-members

General
1. Number of interview, sex of respondent
2. How old are you?
3. From where are you? Are you Tacana or other?
4. What is your educational level?

Land-use
5. Which land-use practices do you apply?
6. How important are these types for you? Can you give a valuation of each land-use practice? (Subsequently the valuation method with maize grains was explained.) Can you explain your valuation?

CFE in general
7. Which impacts, both positive and negative, does the CFE have with regard to your household, family, relations with others, the village in general etc.?
8. Can you give a number between 1 and 10 to valuate your CFE? (From a certain moment, respondents were given a list with numbers and meanings: 10 = excellent, 9 = very good, 8 = good, 7 = fairly good, 6 = acceptable, 5 = just insufficient, 4 = insufficient, 3 = fairly bad, 2 = bad, 1 = very bad.) Why not higher and/or why not lower?

CFE and participation
9. How do you obtain information about what is going on in the CFE and what is going to happen? How is the communication? How is the relation between you and the CFE-board?
10. How many times are there meetings?
11. How many times did / do you attend a meeting? Why?
12. Did / do you participate in the elaboration and approving of the forest management plan? Do you participate in decision-making? How? How often? In which decisions? In which not?
13. How are decisions made? By which persons?
14. Do you participate in the forest activities of the CFE? Which? How often? How many days / weeks / months during the last year?
15. Are there internal conflicts? About which subjects? And in the past? How are these conflicts resolved?
16. Are there internal problems? About which subjects? And in the past? How are these conflicts resolved?
17. How much does it cost to participate in the CFE in respect of time, energy, effort, money etc.?
18. Are there internal groups in the CFE?
Topic list used during interviews with non CFE-members

When non-member and no direct relation to the CFE:

General
1. Number of interview, sex of respondent
2. How old are you?
3. From where are you? Are you Tacana or other?
4. What is your educational level?

Land-use
5. Which land-use practices do you apply?
6. How important are these types for you? Can you give a valuation of each land-use practice? (Subsequently the valuation method with maize grains was explained.) Can you explain your valuation?

CFE
7. Do you know about a communal forestry group in this village?
8. Did they ask you to participate?
9. What are / were your reasons not to participate?
10. Does the CFE have impacts with regard to your household, family, relations with others, the village in general etc.?
11. Do you know if they have internal conflicts and / or problems? Which? Why?

When non-member is a wife of a member: same topic list as for members, as far as applicable, complemented with:

1. Is there any possibility to participate in the CFE?
2. Would you like to participate in the CFE? Why (not)?

Topic list used during interviews with members of CFE-board

General
1. Number of interview, sex of respondent
2. How old are you?
3. From where are you? Are you Tacana or other?
4. What is your educational level?
5. Which is your function in the CFE?

Land-use
6. Which land-use practices do you apply?
7. How important are these types for you? Can you give a valuation of each land-use practice? (Subsequently the valuation method with maize grains was explained.) Can you explain your valuation?

CFE in general
8. How is the CFE organised (board – functions)? When and why was it started, what happened?
Appendix 3 Topic lists used during interviews

9. How many members does the CFE have? Male / female? The whole community?
10. Which impacts, both positive and negative, does the CFE have with regard to your household, family, relations with others, the village in general etc.?
11. Can you give a number between 1 and 10 to valuate your CFE? (Marking list used as explained in question 8 of the first topic list) Why not higher and/or why not lower?

CFE and participation
12. To cooperate with this amount of members is different in respect to enterprise with few or much more members. Which are the impacts (positive and negative) of this amount of members in relation to participation?
13. Which are the three (or more) biggest impacts?
14. Is this group homogenous or heterogeneous in respect to their ideas?
15. How do the members obtain information about what is going on in the CFE and what is going to happen? How is the communication? How is the relation between you and the CFE-members?
16. How many times are there meetings?
17. With which persons or groups?
18. How many members show up for the meetings?
19. How many times did / do you attend a meeting? Why?
20. How many and which persons / members participate(d) in the elaboration and approving of the forest management plan? And in decision-making? How? How often? In which decisions? In which not?
21. How are decisions made? By which persons?
22. How many and which persons do participate in the forest activities of the CFE? Which? How often? How many days / weeks / months during the last year?
23. Are there internal conflicts? About which subjects? And in the past? How are these conflicts resolved?
24. Are there internal problems? About which subjects? And in the past? How are these conflicts resolved?
25. How much does it cost to participate in the CFE in respect of time, energy, effort, money etc.?
26. Are there internal groups in the CFE?
27. What has to change to improve the internal relations and to overcome internal problems / conflicts / limitations?

Topic list used during interview with key-informant

1. Which land-use practices do the people apply?
2. How many people / families are living in this village / the villages?
3. Are there differences in organisational structure between the different CFEs?
4. How did they start? What happened next?
5. Which are their general problems / conflicts?
6. Which are the advantages and disadvantages of working in such a communal group?