# From Men's Houses to Leader Courts

## Processes of Transformation in the Governance of Land Use in the Papua New Guinea Highlands

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**Abstract**

Land use systems in the central highlands of Papua New Guinea have been subject to accelerated change since their initial interrelation with state systems, missionaries and the monetary economy less than a century ago. This thesis explores the governance of land use in the area of Dirima in Simbu Province and discusses processes of transformation that the governance of land use is subject to between 1945 and present times. Emphasis is given to questions of how the governance of land use is socially organized, how land is accessed and managed for agricultural production, and how the governance of land use interrelates with, and draws on, institutions of government.

Results of this study are based on three months of ethnographic field work, with participant observation as sole method in the field, and complemented by the review of secondary sources.

The governance of land use in the area of Dirima is embedded in a social structure of hierarchically segmented groups, while the functions and significance of different group segments for the governance of land use have changed over the last decades. Strategies of land use are increasingly based on decisions taken within nuclear families, rather than coordinated within larger groups. In the past, men's houses have constituted a significant institution for the governance of land use, while nowadays adopted court systems play a greater role. While this thesis explores change specifically in relation to the governance and social organization of land use, it suggests that a more comprehensive understanding of changes in land use systems may be gained by analyzing social change in more inclusive terms.

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## Acknowledgements

# 1. Introduction

This thesis is an exploration of change in land use systems. More specifically this thesis seeks to explore and contribute to an understanding of processes of transformation in the governance of land use systems in the highlands of Papua New Guinea (PNG). The broad aim of seeking to understand how land use is governed is approached from three overlapping angles: (*i*) the social organization of the governance of land use; (*ii*) management and access to land for agricultural activities; and (*iii*) institutions of decision-making, coordination and dispute handling in the use of land resources. Processes of transformation refer to change that is taking place since the arrival of missionaries, government and other outside actors in the PNG highlands.

This exploratory study takes place in the area of Dirima in the Gumine District of PNG's Simbu Province. Field work was carried out for about three months while being a visiting student at the University of Goroka in the highlands of PNG. The locality of most field work has been Boman, a village settlement in the area of Dirima (see map 1 on page 10). However, field work also covered a wider area of Dirima in general and other parts of Gumine District among the Golin speaking people, in order to facilitate an improved understanding of different forms of governance in the context of larger social structures.

Processes of transformation are explored in relation to change in the governance of land use systems. The time frame of change I deal with in this thesis is between 1945 and present times. Only after World War II did the area of Gumine come into direct contact with actors of the state and missionaries[1], which arguably provided for accelerated change. The lack of written records and scarce informant's memories of earlier times give further reason for this time frame. Processes of transformation that are of interest to this study relate to changing governance arrangements of land use through processes of increased interrelation of the Golin societies with the state, missionaries and the monetary economy.

## *1.1 Motivation, Objective and Research Questions*

In the context of PNG there is no difficulty to empirically motivate a study on processes of transformation in the governance of land use. Particularly mentioned can be the debate on

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[1] According to Bouchard (1973), most parts of Gumine have been first contacted between 1945 and 1949. Catholic missionaries settled in Dirima around 1948/49.

land reform in PNG (see for example Fingleton, 2004; Lea, 2009; Weiner & Glaskin, 2007). The debate on land reform in PNG covers a broad array of issues from communal versus individual ownership arrangements, the identification and acknowledgement of landowner groups, and procedures of formal registration that allow for participation in formal economic activities, among others. This thesis study may be of general relevance for this national debate in PNG.

The overarching objective of this study is to contribute to an improved understanding of processes of transformation in the governance of land use in the PNG highlands. This objective entails three more specific research questions that are overlapping and geared towards the overarching objective.

1. *How is the governance of land socially organized?*

2. *How are land resources accessed and managed for the purpose of agricultural production?*

3. *What local and supra-local institutions are governing the control and management of land resources?*

How people organize around land play an important role in earlier studies about the PNG highlands, particularly in the Simbu highlands. Pioneering anthropological studies have been carried out by Brown (1972). This study analyzes societal change among Kuman speaking people of northern Simbu since their 'discovery' in the early 1930's. The Kuman speaking people of Simbu have considerable cultural similarities with the Golin speakers further south, where field work for this thesis took place. Brown (ibid:35-37) introduced a classificatory model of social segmentation of the societies of the Simbu highlands, based on tribes, clans, sub-clans and sub-clan sections that I will draw on. Further, Brookfield & Brown (1963) particularly looked at aspects of land use and territorial claims among the Kuman speakers. Their study provides an important reference and entry point for tracing more recent processes of change that have taken place in the last decades. Brookfield & Brown pay particular attention to the relationship between groups, for example inter-tribal land struggles. Central importance for inter-tribal relationships in the Simbu highlands has been assigned to cycles of ceremonial pig feasts[2] as manifestations of wealth and strength of the hosting tribe

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[2]   Brookfield & Brown (1963) estimated pig feast cycles of seven to ten years, corresponding to the time
     needed to build up pig numbers between pig feasts. They estimate that at least 90 per cent of grown pigs were

(Brookfield & Brown, 1963:8). Hide (1981) studied pig production in (today's) Sinasina District of Simbu Province and noted that "inter-group exchange and the large-scale [pig] festivals were [still] a dominant concern" of people in the early 1970's, not least in relation to production strategies (Hide, 1981:9). According to my informants, pig festivals have been of similar importance in the area of Dirima but are not practiced any more, as can be expected for many other parts of the Simbu highlands. Pig festivals and warfare over land played fundamental roles for inter-tribal relations and for the constitution of tribes as alliances and units of solidarity in different parts of, if not throughout, the Simbu highlands. The culmination of pig production cycles in large-scale festivals required considerable coordination between the clans that constitute a tribe. The significance of pig production cycles for the coordinated management of land resources and tribal alliances for warfare over land can be seen as forms of governance of land use. The fact that large-scale coordinated pig production apparently ceased to be practiced provides an entry point to explore processes of transformation in the governance of land use.

After PNG's Independence in 1975, several studies were carried out in Simbu to survey land use systems and to identify issues relevant for development policy and planning. This is well manifested in a comprehensive report on challenges for development in the Simbu Province (Howlett et al., 1976) and the research reports of the Simbu Land Use Project (for example Wohlt & Goie, 1986). Both studies make reference to the rate of population growth in the Simbu highlands and its implications for increasing pressure on the natural resource base. In most parts of the Simbu highlands there is little scope to expand the frontier of land use for meeting the increasing demands for subsistence agriculture. The area of Dirima and neighboring locations in Gumine District along the Maril river valley, to the north of the Maril divide mountain range, were identified as an exception in this regard, for having opportunities to expand the frontier of agricultural land use to the south of the Maril divide. The people of Dirima and Gumine in the Maril valley have access to extensive arable land areas on the southern side of the Maril divide that has the potential to relieve pressure on land (Wohlt & Goie, 1986:8). Between the late 1940's and the 1970's, however, no substantial increase of horticultural activity on the southern side of the Maril divide to offset population

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killed in a pig feast, roughly amounting to one pig per head of the tribal population hosting a pig feast. Two or three thousand pigs killed for a pig feast may have been consumed by as many as twenty thousand people.

pressure, with densities around 500 people/km$^2$ in Dirima, could be noted (Wohlt & Goie, 1986:141-42). The report recommends to further "investigate the degree of involvement by Gumine people" in the area south of the Maril divide range "and the potentials of that area to relieve land shortages in Gumine" (ibid.:221). My study intends to further illuminate the contemporary importance and potential of landholdings south of the Maril divide for relieving land shortage and population pressure on the northern side of the Maril divide where Dirima is located.

## 1.2 The Local Context

Field work has been centered in the village settlement of Boman. Boman is located in the area of Dirima in Gumine District, in Simbu Province in the highlands of PNG (see Map 1, page 10). Boman is the central settlement hub of the Ole-Wera, a kin based group. The village settlement of the Ole-Wera in Boman is in Tok Pisin[3] referred to as Ole-Wera or Boman *hauslain*[4]. The Boman *hauslain* stretches along a feeder road that connects Boman to the road between Gumine, the administrative center of the District, and Kundiawa, the provincial capital of Simbu. Boman is located about a kilometer to the west of the Dirima mission station and road market, the latter being a central spot where people from the surrounding interact.

The surroundings of Boman are characterized by rugged mountainous terrain. Boman *hauslain* is located on a thin stretch of plain fertile soils at an altitude of about 1800 meter above sea level, referred to as the Maril valley. To the north the Maril river flows eastwards into the Wahgi river and to the south ascends the Maril divide range to altitudes around 2500 meter above sea level. Through initial field work in Boman it became evident that the Ole-Wera of Boman are part of a larger group structure of the wider area of Dirima that expands beyond the Maril divide range to the south. In order to obtain a deeper understanding of governance arrangements of land use I thus conducted field work also in the adjacent areas of the Maril valley and further south of the Maril divide. The area to the north of the Maril divide has road access and has a considerably higher population density than the areas south of the Maril divide. The area to the north of the Maril divide is referred to as "*Kul*", while the

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[3]   Tok Pisin is the predominant lingua franca in PNG

[4]   The Tok Pisin term "*hauslain*" is used to refer to a settlement hub ("line" of "houses"), but usually entails reference to kinship (cluster of "houses" associated with a particular "family lineage")

area to the south of the Maril divide is called "*Bomai*"[5], translating as "bush". *Kul* is associated with access to road networks, services and markets. *Bomai* in turn expresses remoteness and lack of access to services and markets. In *Kul* population density is high and land for gardening is scarce, especially the plain and fertile stretch of the Maril valley, while in *Bomai* population density is relatively low in comparison. Bush land is abundant in Bomai, however, topographical characteristics make slopes a general feature. According to Hanson et al. (2010:139) population densities in the area north of the Maril divide (*Kul*) are between 101-600 persons/km$^2$, whereas south of the Maril divide (*Bomai*) they are estimated to 1-20 persons/km$^2$. The northern side of the Maril divide is regarded as the main zone of residence and subsistence gardening, while the higher parts of the Maril divide range are associated with the harvest of the seasonal pandanus nut *karuka*. The lower areas south of the Maril divide are associated with the cultivation of the pandanus fruit *marita*.
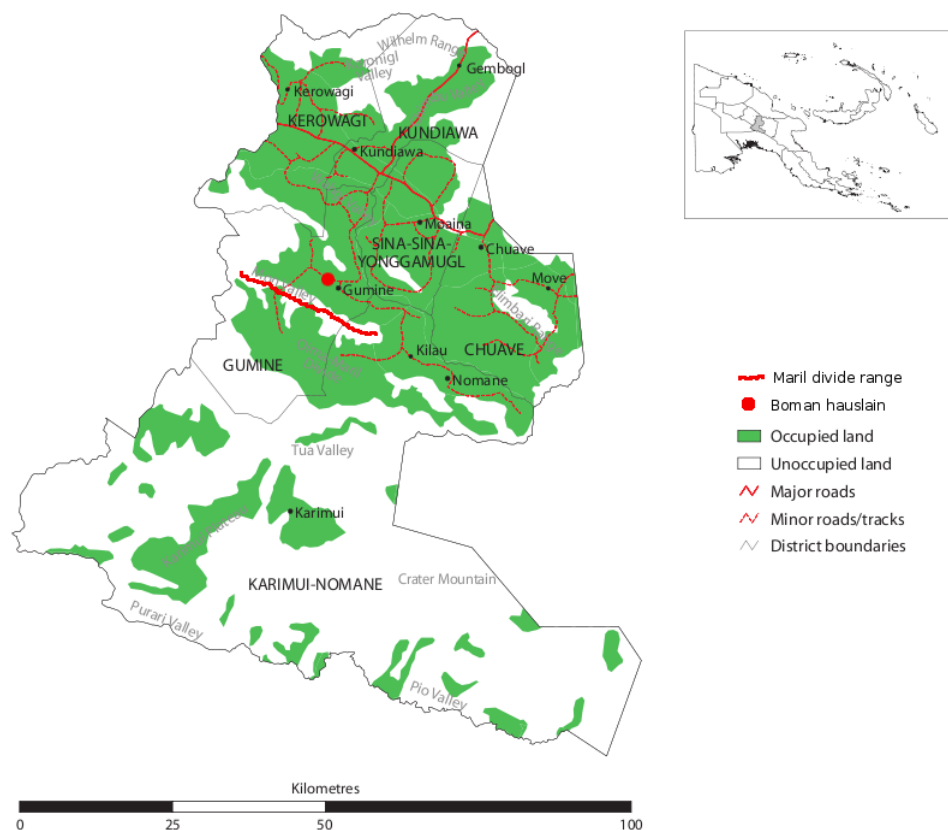
Map 1. Approximate location of Boman. "Occupied land" refers to land which is settled and/or used for agricultural production, "unoccupied land" is usually not (map based on Hanson et al., 2001).

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[5] The area that is referred to as 'Bomai' in the area of my field work is not to be mistaken with Bomai-Kumai to the north and the Bomai area of the Karimui-Nomane District to the south

*1.3 Outline*

In the following chapter (chapter 2) I discuss central concepts that I draw on in this study. In chapter 3 I discuss the methodological approach and research process that inform this thesis.

The results are structured in three chapters. Content and concern of the three result chapters is partly overlapping, and each chapter is informed by different theoretical entry points and proceedings of data gathered from the field. Chapter 4 deals with discerning the levels of larger group structures that the people of Boman are a constituting part of. I particularly explore the role of different levels of group structures for the governance of land use and notions of land ownership. In chapter 5 I present four case studies from Boman that concern different aspects of land management. These case studies are used as an entry point to discuss principles of governance, management and people's access to productive land resources. In the third results chapter, chapter 6, I discuss some specific institutions with relevance for understanding processes of transformation in the governance of land use, with particular attention paid to the interplay between land governance based on social group structures and institutions of government.

In the concluding chapter of this thesis, chapter 7, the results are summarized and discussed in relation to processes of transformation in the governance of land use. The concluding chapter also entails a brief evaluation of theoretical aspects regarding the approach and terms used in this thesis for the study of land use systems change.

## 2. Guiding Concepts

In this thesis I draw on terms of anthropology and political science, with reference to the 'social organization' and 'governance' of land use, respectively. In this chapter I briefly discuss some guiding theorizations in order to clarify my use of the terms 'social organization' and 'governance'.

*2.1 Social Organization*

In regard to the social organization of land use I particularly draw on the concept of socio-territorial organization. The concept of socio-territorial organization is employed in anthropological and archaeological studies of tribal societies, principally hunter-gatherers, and in relation to the role of territoriality in hominid evolution in general (See for example Brandt, 1988; Helm, 1965; King, 1976; Usher et al., 1992). Socio-territorial organization is employed

in relation to societies, or the historical past of societies, that were, in terms of Usher et al., "[...]organized societies, with systems of tenure, access and resource management that amounted to ownership and governance" (1992:111).

Many contemporary tribal societies can be argued to represent elements of socio-territorial organization that still, to considerable extent, determine aspects of land ownership and governance. However, many contemporary tribal societies became increasingly integrated into bureaucratic state systems of government that have at least partially assumed importance for the governance of land use systems. Socio-territorial organization thus may, in the studied context, not amount to the governance of land use on its own. But, besides socio-territorial organization, the governance of land use also potentially relies on elements of the bureaucratic state systems of government for the contemporary governance of land use.

## *2.2 Governance*

Governance, in political science, is approached as based on bureaucratic systems of government, rather than social organization. Governance in political science is foremost a question of public administration (compare Sandström, 2008:59). It is increasingly acknowledged in political science, however, that institutions and actors of governance are as well drawn from beyond government (Stoker, 1998), which is expressed in the term 'new governance'. This realization, I would argue, represents the wider shift to decentralized resource management, particularly in relation to notions of nature conservation. The trajectory of conceptualizing 'governance' in political science seems departing from 'government' to government-based central governance, and further towards rather decentralized 'new' governance.

In this study I generally apply an anthropological perspective to the governance of land use and approach 'governance' primarily as a question of social organization rather than based on systems of government. However, I perceive it important to introduce the perspective towards 'governance' in political science, as the process of transformation I depict in this thesis may as well be perceived as a shift from the 'governance' of land use that is based on socio-territorial organization without elements of state government towards increasingly interrelating with systems of government.

## 3. Methodological Approach and Research Process

### 3.1 Methodological Approach

In general this thesis study has a qualitative approach. This in principle means the study is based rather on interpretative data than on measurable data, or, in the terms of Alvesson & Sköldberg, on "open, equivocal empirical material" (2009:7). Observations regarding the relation between people and land, and the social organization of the governance of land use are the primary focus.

The core of this study is ethnographic field work, being primarily oriented towards collecting data that allows for the description and interpretation of processes of transformation in the governance of land use. This study has been carried out through participant observation as the only method applied in and throughout field work. I began field work inductively for the aspiration to acquaint exposure to inside perspectives towards the governance and social organization of land use in the field. Beside ethnographic field work, I draw on a limited amount of secondary sources for tracing processes of change since 1945. The incorporation of secondary sources, however, is limited to academic references as I did not carry out comprehensive archival research for this thesis.

### 3.2 Research Process

Field work has been carried out alongside with studies at the University of Goroka in the highlands of PNG. Studies at the University of Goroka gave me valuable insights into debates and perspectives on land use and social change in PNG, and further allowed for the careful selection of a field site. Prior to arriving in PNG by February 2010, for the time span of one year, little had been specifically defined in regard to this thesis study. My general intention was to carry out research under the notion of processes of transformation in the governance of land use through an ethnographic approach. I further had the intention to build up the research process on an inductive start into field work and on perspectives gained through scholarly interaction and coursework at the University of Goroka. The University of Goroka provided a harbor for stepping out of the immediate field site and submitting my observations to reflection, research supervision and broader scholarly debate.

From February till June 2010, corresponding to the first of two semesters of studies at the University of Goroka, I was able to identify a field site and had the chance to discuss my

research ideas with scholars at the University of Goroka. By June 2010 I obtained the approval for my research endeavor from the University of Goroka and had a first round of field work throughout July 2010.

Several options were evaluated before the final selection of a field site. Exploratory visits to rural areas in the Eastern Highlands Province of PNG were carried out with support of the Research and Conservation Foundation (RCF) based in Goroka. I then turned my attention to Simbu Province with its rugged mountainous terrain that is commonly associated with providing particularly challenging conditions for commercial agricultural production and the subsistence of its growing population. The preference for the rugged mountains of Simbu is specifically motivated for the assumption that processes of transformation in the governance of land use may be less pronounced than in areas that are stronger oriented at commercial land use and resource exploitation. I then discussed the selection of a field site with students of the University of Goroka and expressed my interest to carry out research in Simbu. Students from Simbu facilitated exploratory visits to their communities over weekends, which finally resulted in the selection of Boman in the Gumine District of Simbu Province as field site.

Throughout field work I resided with the family that had hosted me on my initial visit. This meant living among and in daily interaction with the community of the Boman *hauslain*. Full time field work covered July and again the months of November and December of 2010. This was complemented by a number of extended weekends in the field and the meeting of community members in the towns of Goroka, Kundiawa and the national capital Port Moresby. I have usually been interacting with people belonging to the area of field work on a daily basis from July 2010 to January 2011. This has partly been due and facilitated by a characteristic of residential field work that I only realized throughout initial field work in the month of July 2010. The approach taken to select the field site actually meant to become 'member' of the community and part of its social network of kinship. Becoming 'member' in the community meant to find myself, for example, in the process of being allocated land for a dwelling and for potentially planting at least some bananas and sugar-cane as resources of symbolic importance. I was told stories of the history of the community and was learned its functioning at any possible instance.

I started to more systematically review literature only after systematizing obtained data of my first month of continuous field work in July 2010. This was done for the specific motivation

to align the research process to inside perspectives on issues of relevance gained in the field. I intended to avoid entering the field with strongly pre-framed conceptualizations about its reality and particular issues of relevance for research. Throughout field work in July 2010 I usually held back with very specific questions and did hardly make own schedules for spending my days. I have rather just been sticking around, following invitations to roadside chats and storytelling and letting myself be introduced to as many people as possible of the surrounding area of Dirima. A particular method of field work emerged as very fruitful in these times and as part of participant observation, being what Eggins (Eggins, Joys; personal communication, 07.05.2010) in Melanesian terms refers to as "sindaun na stori"[6]. Least of all this refers to literally sitting down, though it is often part of it. *Sindaun na stori* is an often spontaneous interaction that, however, can take anything between a few minutes and several hours. It ranges from storytelling around fireplaces at evenings and nights to communicative gatherings at the roadside, usually spontaneously entered into and often accompanied by the joint chewing of betel nut and smoking. The language of interaction throughout field work has usually been Tok Pisin, the lingua franca for most parts of PNG that I became familiar with in Goroka before starting field work, and in some instances English. Interaction in the field has not been restricted to informants of particular social positions, age groups or gender.

Throughout August and September 2010, while continuing with field work over weekends beside coursework, I transcribed and translated field notes (which I took mostly in German), clustered, analyzed and systematized obtained data. Following this, I spent two weeks in Port Moresby in October 2010 for accessing and reviewing literature of more specific relation to the field site. At the same time I interacted with an extended number of scholars based in PNG and elsewhere. Particularly the interaction with scholars of the University of Papua New Guinea (UPNG) and the National Research Institute (NRI) in PNG, and the Australian National University (ANU) provided valuable perspectives and literature resources for my further research process. I then started to compare my rather inductive conceptualizations more systematically with those of the existing scholarship. Based on the reflection on my own conceptualizations in comparison to a broader overview of the related scholarship, I intended to revise my approach for field work in November and December 2010.

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[6]  This expression in Tok Pisin could be literally translated as "to sit down and tell stories"

Looking back, this probably presented the most challenging part of the research process. In general I perceive my research process as a useful approach to obtain inside perspectives in some detail before stronger relating these to the issues and conceptualizations introduced in the academic scholarship. It became then rather a challenge of time for processes of reflection and the definition of more specific research questions and methods for subsequent field work in coordination with processes of research supervision. This phase could certainly have taken more time in an optimal scenario. Part of the reflection and the definition of more specific methods and research questions applied in further field work has then been taking place while already being in the field again.

Field work throughout November and December of 2010 was stronger structured than initial field work. I now more actively determined whom I was intending to interact with, in what context and about what topic or questions. Part of this has been a survey of ownership and management arrangements of cultivated gardens covering several families of Boman. Other more specific aspects that I paid particular attention to in field work were notions of land ownership in relation to social segmentation in the wider surrounding, and the role of local court and government systems for questions related to the governance of land use.

It could be argued, especially giving the relative short time of field work, that an approach of doing a detailed literature review and designing surveys prior to field work may be more appropriate for gathering more detailed empirical data. I do agree that the quantity of rather specific data may be expectedly more comprehensive when entering a stronger coherently structured field work from the beginning. However, my process of field work also suggests that the quality and depth of data I obtained throughout field work increased considerably when having prior knowledge of inside perspectives regarding issues that were part of interaction. I felt that differentiated notions of issues and perceptions were only increasingly conveyed to me, the more people I interacted with felt my prior knowledge of aspects talked about. In this way, I perceive to have obtained more detailed data about the complexity of specific notions of land ownership, use rights and management arrangements than an otherwise obtained survey of land use systems could provide.

After my initial field work I also considered more formal and recorded interviews as complementary method to participant observation for the collection of data and thus carried a audio recorder with me throughout subsequent field work. The dynamics of field work,

however, kept being characterized by certain unpredictability of the contexts of interaction, which made me stick to exclude rather formal and recorded interviews. While in some interview situations and other instances of interaction I was taking notes directly, especially in the surveys of gardens and interaction with key informants, the major account of field notes was written from head notes, usually several times per day.

### *3.3 Limitations of this Study*

Though in this thesis I deal with "processes of transformation" and thus "change", certain limitations apply to how I depict change in the governance of land use in this thesis. The difficulty of depicting change is two-fold. On one hand does field work over a limited period of time not allow for the ethnographic observation of change taking place over time. On the other hand did the research process for this thesis not entail detailed archival research, while prior ethnographic research about the location of field work is scarce. Change is thus traced in a very limited way, principally through interaction with my informants about the past and by the incorporation of literature sources that refer to adjacent locations in the Simbu highlands that are regarded as culturally similar.

But there is also another limitation to how I deal with processes of transformation and change in this thesis. It may not be much of a claim to suggest that the PNG highlands societies have undergone profound changes since coming into contact and interrelating with a state system, missionaries, the monetary economy, etc. Changes in the governance of land use in the PNG highlands are, arguably, deeply embedded in broader processes of social change, including changes in values and worldviews. In this thesis, however, I focus on depicting change more specifically in relation to certain aspects of the governance of land use like social group structures, access and management of land and particular institutions of governance and government. While I would generally agree that a stronger analytical engagement with social change *per se* is desirable when studying change in the governance of land use, the limited scope of a master thesis made me decide otherwise in this case.

## 4. Social Organization of Land Governance

In this chapter I first discuss in more depth the social group that comprises the Boman *hauslain* and the larger group structures that Boman constitutes an integral part of, based on the empirical material obtained throughout field work. In a subsequent step I discuss the

larger group structures in relation to Brown's model of social segmentation. In the third section of this chapter I discuss notions of land ownership in relation to social segmentation.

I analyze group structures in terms of social segmentation (Brown, 1972). The segmentation of group structures characteristic for Simbu societies is the foundation for the formation of groups and alliances that shape the interrelationship between individuals and groups. In the Simbu highlands, social segmentation is based on a notion of patrilineal descent, the largest inclusive segment of groups being described as having had a common founder (Brown, 1972:35). In this patrilineal descent construct, subgroups are constituted by the sons of the respective founder. Several levels of subgroups can then be distinguished that are organized in hierarchical segments through links of father/son between levels of segmentation and reference to brothers among parallel segments (Brown, 1972; Podolefsky, 1978). Podolefsky (1978:85) and my own field work support this characteristic social segmentation for the Golin people of Gumine District. It has to be noted, however, that patrilineality in the descent construct that underlies social segmentation rather corresponds to a patrilineal ideology than a strictly patrilineal reality. Standish (1992:31 citing Barnes, 1971:100) points out that the "[h]ighlands area as a whole 'appears to be characterized by cumulative patrifiliation rather than by agnatic [patrilineal] descent'".

Different segments of hierarchical descent constructs in the Simbu highlands have been distinguished through the classificatory terminology of phratry, tribe, clan, subclan and subclan sections (Brookfield & Brown, 1963; Brown, 1972; Podolefsky, 1978). Each of these segmental levels can be assigned certain functional characteristics. However, as both Brown and Podolefsky point out, this definition of segmental levels are scholarly conceptualizations that are not always of immediate concern to individuals and not always completely agreed upon by all informants. Importantly, groups mainly interact in opposition to each other and at the same time combine as larger units in opposition to other segments at higher levels of social segmentation (Brookfield & Brown, 1963; Podolefsky, 1978). I do, however, perceive the model of social segmentation introduced by Brown helpful as an entry point to discuss the interrelation of different levels of group structures. In the second section of this chapter I discuss my empirical findings in relation to the model of social segmentation introduced by Brown. The abstract classificatory terminology of phratry, tribe and clan should thereby not be understood as static attributes to group segments, but are rather idealized abstractions of a

more messy reality, which is moreover subject to change since these models have been first introduced.

## *4.1 Levels of Social Segmentation – Empirical Findings*

At continuation I discuss the social group of Boman and the levels of segmented group structures it constitutes a part of. While I thus do reference to a broader social and spatial context, I discuss levels of social segmentation from a perspective of Boman, without intending to provide a detailed structure of all groups and parallel segments that identify with the larger group structures discussed. I start with Boman and proceed to ascending levels of social segmentation, which the social group that comprises Boman is embedded in. The material presented in this section has been obtained through interaction with informants throughout field work.

*Boman*

Boman *hauslain* is the location of the main settlement hub of the group that its members refer to as Ole-Wera. The Ole-Wera group is made up of two extended family lineages, Olebiagaulin and Werabiagaulin, and their recruited affines. The extended family lineages of Olebia- and Werabiagaulin are constituted by brother-brother lineages. The Olebiagaulin, for example, correspond to the Irai-Bomai brother-brother lineage, Irai and Bomai referring to the brothers that are regarded founders of the brother-brother lineage. The Werabiagaulin comprise two brother-brother lineages, the Dingi-Koma and Kiruai-Aiwa. The genealogies of the brother-brother lineages that comprise the Ole-Wera are traced back to their name-giving founders and have a depth of three to four generations. But only some members of the Ole-Wera and their respective brother-brother lineages appear in the patrilineal genealogies that my informants reconstructed. Further, members to these lineages are also recruited by other mechanisms than patrilineal descent. A relatively prominent mechanism of recruitment other than patrilineal descent is men who come to live in their wives patrilineal groups and eventually become members of the group. Also adoptions play a role for being associated with particular brother-brother lineages and thus to become member of the Ole-Wera.

The Ole-Wera identified with a common men's house in the past, in Tok Pisin referred to as *hausman*, in which all adult male members of the Ole-Wera co-resided. The *hausman* was abandoned as result of the missionary activities that started in the area after World War II, promoting the co-residence of married men with their wives and families. Though the men's

house does not exist anymore, this past still informs the contemporary identification of the Ole-Wera. According to elder informants, the men's house of Boman had been divided into two parts with two doors and fire-places. One entry and fire-place corresponded to the Olebia- and the other to the Werabiagaulin. While the Boman *hauslain* is located along the road, the men's house of the Ole-Wera has been located in proximity to Boman, a little up the range. The Ole-Wera is a solidary group, which is expressed in joint activities. Bride prices, for example, are raised commonly among the group when one of its male members becomes married.

Male members of the Ole-Wera claim individual ownership to plots of land in the wider area, both on the northern (*Kul*) and southern side of the Maril divide (*Bomai*). Boman is the main residential hub for the Ole-Wera, but does not correspond to a contiguous extension of land. Residential huts and houses are built on individually owned land. Not counting any more with a men's house and a related ceremonial ground, there is no common land in Boman that belongs commonly to the Ole-Wera.

*The Milinkane*

The Ole-Wera, corresponding to Boman, form part of a larger group that is referred to as Milinkane. The major part of the Milinkane is living westwards, a little further up the Maril valley. The Ole-Wera (or their ancestors) have settled further down the Maril valley in Boman only a few generations before. They settled on land that previously belonged predominantly to people of another group, the Bomaigaulin. Still today, much land in the immediate proximity of the Boman *hauslain* belongs to people of the Bomaigaulin, however, hardly used by them. As Boman is the major settlement hub for the Ole-Wera of the Milinkane, people from the Bomaigaulin would almost be seen as intruders if cultivating gardens on their lands in Boman. People in Boman point out that the Bomaigaulin are usually willing to sell their land in Boman to people of the Ole-Wera when approached in this regard.

The Milinkane, as social group, hold common ownership of contiguous bush land in the higher parts of the Maril divide. These lands at altitudes around 2500 meters above sea level are of little attraction for gardening purposes, and rather associated with the seasonal harvesting of the pandanus nut *karuka* and other bush material. Members of the Milinkane subclan may, however, clear the area around wild *karuka* groves or plant their own *karuka* groves and thereby individually claim patches of land through their activity. In the higher

altitudes of the Maril range a particular stretch of bush land is regarded as the common property of the Milinkane subclan, while other stretches respectively belong to other groups. Informants mentioned the rule of common access to the bush land up the Maril range as bestowed by tradition, being learned by their elders that these bush lands are meant to be for all of the group. Land in lower parts to both sides of the Maril divide range that is used for gardening purposes is subject to individual ownership claims.

The Milinkane also correspond to a 'council ward', the electorate of a councilor that represents the group in the Local Level Government (LLG) of Gumine (see chapter 6). Significance of the Milinkane group was often conveyed to me in relation to the political organization of government. The political organization of government with an elected member that represents the group in the Gumine LLG, constitutes an often evoked reference to the Milinkane.

*The Nikigaulin*

The group of the Milinkane, as the group of the Bomaigaulin, constitute part of the yet larger Nikigaulin group. The Nikigaulin is by informants defined as group that does not intermarry internally, meaning that there are no marriages between members of the Milinkane and Bomaigaulin for example. The Nikigaulin most significantly constitute an exogamous kin group. The most common elements of explanations I received in interaction with my informants made reference to the notion that all members of the Nikigaulin are brothers and sisters that do not intermarry and that the Nikigaulin comprise three council wards of the Gumine LLG. The Nikigaulin constitutes one of the three exogamous kin groups living in the immediate surrounding of Dirima, the others being Aleku and Kipaku (see also Donohoe, 1987). As an ideologically patrilineal exogamous unit, the group depends on the recruitment of brides from other groups. The Nikigaulin often recruit brides from the Aleku and Kipaku, which is done vice-versa between these three groups in the immediate vicinity of Dirima.

*Dirima*

Dirima, with its mission station, road market and nearby junction that provides road access to the provincial capital Kundiawa and the District administrative center of Gumine, constitutes a central gathering place for people of the Nikigaulin, Aleku and Kipaku. Dirima is the social epicenter for the Nikigaulin, Aleku and Kipaku groups, their areas of settlement extending from Dirima to different directions. Dirima did not always constitute the social epicenter for these groups, but rather emerged in this way with the increasing centrality of Dirima after

World War II, when a catholic mission was established in Dirima. The Aleku, according to my informants, have been initially granted lands in the proximity of Dirima on a temporary basis for participating in road constructions some decades back[7]. However, the temporary settlement of people from the Aleku adjacent to the mission station became permanent.

Apart from constituting a social epicenter, Dirima is also used as reference for a wider area that entails the settlement areas of the Nikigaulin, Aleku and Kipaku groups, among others, that covers areas of the Maril valley (*Kul*) to the north of the Maril divide range and extends over the range to the south (*Bomai*). Dirima, apart from a specific location, thus makes reference to a wider social entity and its corresponding territory. The notion of Dirima as referring to a wider area than the specific location of Dirima, however, is mostly employed when being outside of the wider area that is associated with Dirima. The notion of Dirima as referring to a wider area than Dirima proper has been most significantly conveyed to me through remarks of people pointing out to be "in Dirima" again, after crossing territories that were apparently not associated with Dirima. In one instance, for example, I followed a political campaign team throughout areas south of the Maril divide for several consecutive days of trekking and campaigning. At one point members of our trek pointed out to me that we would be back "in Dirima", while in fact being an estimated 15 kilometers away from Dirima on the southern side of the Maril divide range. This remark would not be voiced when being elsewhere than Dirima proper while moving within the settlement areas of groups that are associated with Dirima. But at this moment the remark expressed to have entered again the area that is, rather subtly, associated with Dirima and its corresponding social groups. We had reached 'home' territory, after crossing areas of other groups that are associated with Gumine, which was worth a remark. Informants of our trek pointed out to me that our trek had crossed the 'boundaries' between territories associated with Gumine and Dirima.

*The Golin*

The Nikigaulin, Aleku and Kipaku groups of Dirima refer to themselves as Golin, and the people of Gumine as Mian. The reference to Golin, however, incorporates also groups further to the east beyond Gumine, associated with Mul. The group of Golin corresponds to a larger group that collectively associates with a common myth of origin. According to several

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[7]   According to Bouchard (1973), pressure was exerted on villagers after 1956 to work on the road between Gumine and Kundiawa

informants the vaguely agreed upon myth locates the origin of the Golin people in Yani, to the west of Dirima, where the original brothers that founded the different groups of the Golin are said to have resided (see also Podolefsky, 1978).

## *4.2 Anthropological Models of Social Segmentation versus Change*

In Figure 1 below I translate my findings into a simplified version of earlier anthropological models and terminology of social segmentation. It needs to be stressed again that the group structure depicted in Figure 1 is an idealized external abstraction that does not necessarily neatly correspond to reality. At continuation I discuss this model in more detail in relation to my empirical material and processes of change.

| PHRATRY | TRIBE | CLAN | SUBCLAN | SUBCLAN SECTION |
|---------|-------|------|---------|-----------------|
| | | Aleku | Bomaigaulin | |
| | Golin (Dirima) | Nikigaulin | Milinkane | Ole-Wera (Boman) |
| Golin | | Kipaku | | |
| | Golin-Kobulaku (Mul) (See Podolefsky, 1978; Wohlt & Goie, 1986) | | | |
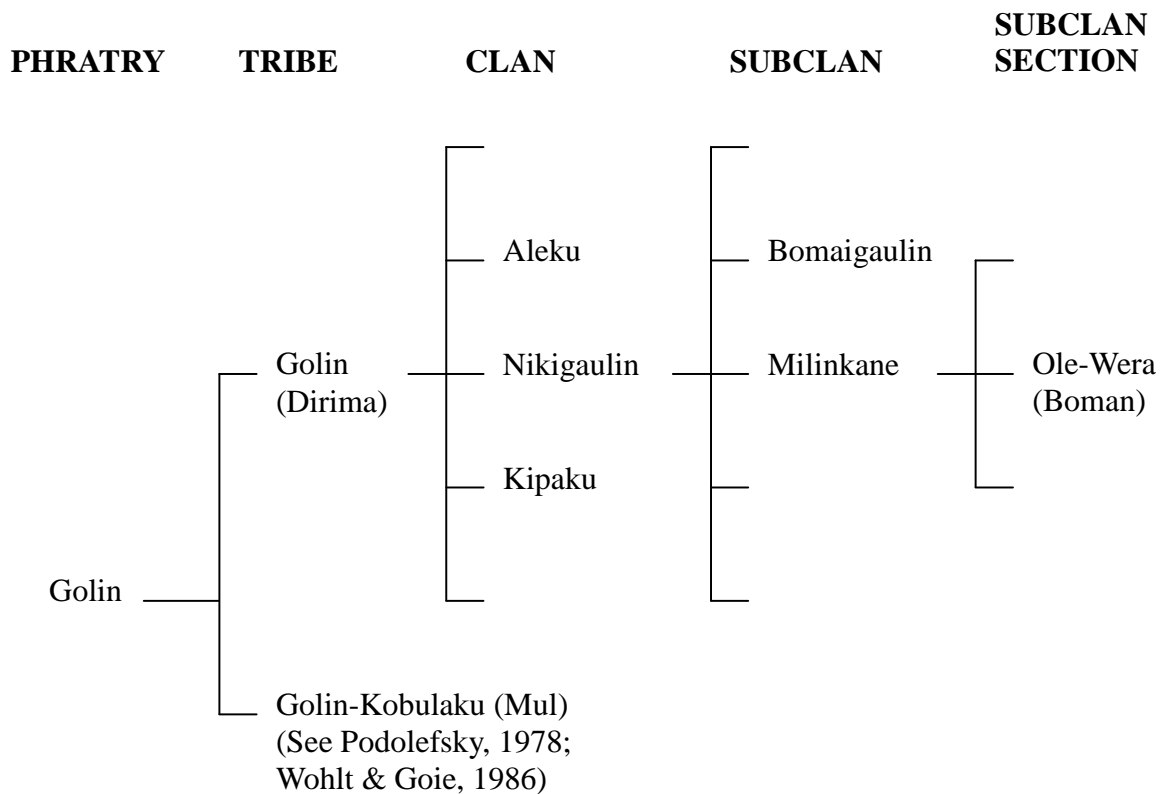
Figure 1. Group structure that links Boman to higher levels of social segmentation.

Following Brown (1972), Brookfield & Brown (1963) and Podolefsky (1978) certain characteristics can be assigned to different levels of social segmentation in the Simbu highlands, which are expressed in the anthropological terminology of clan, tribe and phratry, for example. In most simplified terms, a 'clan' is characterized as unit of exogamous marriage,

'tribe' describes a unit of alliance for the control of a rather contiguous block of territory, while 'phratry' refers to the highest inclusive level of common descent. I use 'subclan' and 'subclan section' without referring to specific attributes inherent to the terminology beyond constituting subgroups of larger groups.

The integration of the Ole-Wera of Boman into the larger groups of the Milinkane and Nikigaulin correspond rather well with the abstracted ideal of a clearly structured social segmentation. My empirical material obtained throughout field work also leaves no doubt about the characterization of the Nikigaulin as a 'clan', for constituting an exogamous social group. Also the level of 'phratry' is rather clearly expressed through a generally agreed upon myth of origin of the Golin people. Much more vague, however, are the indications I obtained to justify the attribute of 'tribe' to the notion of identification with Dirima as reference for a social alliance of groups that is corresponding to a contiguous block of territory. I have not been able to receive differentiated explanations on the specific attributes of referring to Dirima as a wider social and territorial entity, beyond the spontaneous expression of notions that conveyed the use of Dirima as reference to a wider social alliance with territorial attributes. Most significantly has the notion of the 'Golin of Dirima' as tribal alliance been conveyed to me while being on the southern side of the Maril divide range, where the notion of a social and territorial boundary between the Mian of Gumine and the Golin of Dirima has been mentioned by informants.

According to Brookfield & Brown (1963), at the time of their study, tribes were units for territorial control and joint activities. A tribe was most significantly expressed by ceremonial pig feasts and as alliance in warfare (ibid). Pig feasts were held in cycles based on coordinated pig production among the subgroups of a tribe. In my field work, many middle aged informants still remembered the attendance to pig feasts in the area of Dirima and one informant showed me a previous ceremonial ground in proximity of Boman, recounting stories of earlier held pig feasts. Informants mentioned the earlier practice of traversing the Maril divide range to the less densely populated southern side (*Bomai*) to establish gardens for raising pigs that were destined for pig feasts. Also Podolefsky (1978:87) makes reference to the practice of pig feasts in the area of Dirima for his time of field work.

The abandoning of pig feasts over the last three decades is difficult to trace. But the fact that pig feasts have ceased to be practiced points to significant changes in land management

strategies. Land management strategies in contemporary Dirima are based on decisions within nuclear families and may be coordinated with close kin, predominantly within the same brother-brother lineage. Families in Boman contribute pigs to ceremonies that are held within the Ole-Wera group, for example marriages, but pig production is not coordinated among the Ole-Wera as group. While pig production assumed some importance for monetary income, as pointed out by many of my informants, coffee cultivation[8] is often the preferred land use based activity for gaining monetary income. Pigs are mainly destined to ceremonial occasions of social and symbolical importance, while coffee cultivation is less labor intensive for gaining monetary income.

Both functional attributes to tribes that Brookfield & Brown (1963) discuss, warfare over land and large-scale pig feasts, have ceased to be practiced in Dirima. This may explain why in contemporary Dirima a social segment that could be characterized as 'tribe' is not made reference to by my informants. Tribal alliance as expressed through warfare over land and pig feasts became history, and so did the alliance of a tribe in social organization. Notions of "Dirima" as wider social and territorial entity may make reference to historical tribal alliance, but this is, as far as my field work allows this conclusion, not of concern or significance in contemporary social life and land use strategies. Though warfare between groups may still take place, warfare in the last decades occurred between clans and is associated with national elections and alliances of political candidates (see also Standish, 1992).

### 4.3 Social Segmentation and Land Ownership

Although ownership of most land is individual, particularly land used for gardening activities, the effective control and access to land is embedded in multiple layers of social segmentation. Clan territories in the area of Dirima cover rather contiguous areas of land. Intermarriages between the Nikigaulin, Aleku and Kipaku strengthen personal and group ties among these clans, and, according to my informants, plots of land may even be given to in-laws of another clan, leading to the interdigitation of landholdings between different clan areas. The clans of Nikigaulin, Aleku and Kipaku are strongly interrelated both in social terms, as recruiting brides primarily from each other, and in territorial terms, as landholdings of respective clan members may partly be located in settlement areas of the other clans.

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[8]  According to Podolefsky (1978), in Mul, to the east of Gumine, coffee was introduced in 1959. This time coincides with the completion of road construction between Gumine and Kundiawa (Bouchard, 1973).

The settlement areas of the Nikigaulin, Aleku and Kipaku clans extend from Dirima into different directions. Dirima, as social epicenter for these clans, marks a certain 'social' boundary between the settlement areas of these different clans. Traversing Dirima from one side to another means to cross 'social' clan boundaries, expressing certain control by the respective clans to determine access to these areas. Access to individually owned plots of a member of one clan in the area of another clan depends on the state of affairs between the respective clans. For example, many members of the Kipaku clan own plots of gardening land to the west of Dirima in the area settled by the Nikigaulin clan. These lands, however, are not made use of by the Kipaku since warfare in the 1990's between the Nikigaulin and Kipaku, as the Kipaku still fear retaliation from the Nikigaulin in relation to their fights in the 1990's. The Nikigaulin usually respect the ownership of these lands by the Kipaku, occasionally plots in this area being bought by members of the Nikigaulin from the Kipaku, but members of the Kipaku abstain from cultivating them. On the other hand members of the Nikigaulin also own plots in the area settled by the Kipaku. The access to land owned by the Nikigaulin in the area of the Kipaku, however, is not restricted. The fact that access to land between areas of two clans is restricted in one direction but not in the other, is related to the balance of casualties in the warfare of the 1990's between the Nikigaulin and Kipaku clans. Also the relationship of the Nikigaulin and Aleku clans remains slightly tense since warfare between these clans in 2007. In fact, many informants mentioned that warfare between the Nikigaulin and Aleku clans has been a recurrent phenomenon throughout the last decades with interchanging periods of war and peace. The relationship of the three clans of Dirima is thus characterized by an ambivalent state of interdependence and hostility. As exogamous units, clan groups depend on other clans and the maintenance of conducive relationships with other clans that allow for intermarriages. Several informants pointed out that in times of warfare between the clans of Dirima, no intermarriages take place between the groups involved in warfare. The clans of Dirima are thus bound to return to relative levels of peace for the recruitment of brides. And although members of one clan may claim ownership of plots of land in the area of another clan, access to these plots of land is mediated by the current state of affairs between the respective clans.

Within lower group segments land areas associated with particular groups are more fragmented, and do not constitute rather contiguous areas of land like clan territories. For example, areas of land associated with ownership of members of the Milinkane are

fragmented throughout the rather contiguous area of land that comprises the area of the Nikigaulin. And the land areas associated with the Milinkane are fragmented among its constituting groups, like the Ole-Wera for example. Most members of the Ole-Wera that I interacted with claim ownership to plots of land both on the northern and southern side of the Maril divide range, covering different ecological zones that the territories of the Nikigaulin clan comprises.

The individual ownership of plots of land is thereby embedded in segmentary group structures. The identification of an individual with a particular group also entails the notion of common ownership of the land that corresponds to members of the particular group of reference. A member of the Ole-Wera is able to point out areas of land as "land that belongs to us" with reference to the land of any group segment that he identifies with. This notion of common ownership does not entail the right to make productive use of the land of other members of the larger group that an individual identifies with, but it is rather a symbolic notion that expresses solidarity to defend this land as member of the group that the individual is part of[9]. The smaller the group segment that an individual is member of, the stronger is the notion of common ownership with reference to the group. The notion of common ownership of land was conveyed to me the strongest within the brother-brother lineages of the Ole-Wera. In the next chapter I will discuss the notion of common ownership among the brother-brother lineages of the Ole-Wera more in detail, after introducing family case studies of Boman.

*4.3 Conclusion*

In the present chapter I have discussed the larger group structures that Boman constitutes a part of and the function of these group structures in the governance of land use. My observations point to a process of transformation in which the governance of land use increasingly loses its connotation of coordinated collective action based on the alliance of a tribe, but became relocated at decisions of land use strategies taken within nuclear families.

While this chapter clarified that ownership of gardening land is individual, access to land, however, is mediated by several layers of larger group structures. The effective control and access to individually owned plots of land is nested in relationships between group segments. In the following chapter I turn my attention to the governance of land use as expressed

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[9]   An individual may collect certain materials from the land of other group members that are not classified as particularly valuable or scarce. Trees and *Kunai* (*Imperata cylindrica*; used for roofing) are taboo.

through the management and access to land by members of the Ole-Wera of Boman. For this purpose I draw on four family case studies regarding their management and access to land for gardening activities, which are embedded in the context of the larger group structures discussed in the present chapter.

## 5. Access to Land and Management of Agricultural Production

In this chapter I introduce four family case studies with specific reference to the governance of access and management of land for agricultural production. The four case studies relate to families of Boman, and provide an entry point to discuss the access and management of land more in general and as embedded in institutions of the governance of land use. In the first section of this chapter I present the case studies, while in the second and third section I summarize and discuss principles of access to land and management of land for agricultural production based on the empirical material presented and in relation to institutions of the governance of land use.

### 5.1 Family Case Studies

The concern of this section is to introduce case studies of how families access and manage land for agricultural production. The introduced case studies are based on surveys of cultivated gardens of four respective families at the time of field work. The case studies give a picture of how land is accessed and managed for gardening purposes. The case studies do not provide a survey of all landholdings that the families subject to these case studies claim to own. I deal particularly with gardens that are destined to horticultural production.

### Family Case Study 1

The husband in my first family case study grew up on the southern side of the Maril divide range. The Ole-Wera of Boman are the descent group of his mother and not his father. He and his family had therefore no claim on land though inheritance from the ideologically patrilineal descent group of the Ole-Wera in Boman, as land is mostly passed on through sons. His father earned his subsistence with the procurement of coffee and purchased land for his four sons to settle in Boman, the descent group of his wife (and mother of the 'husband' of my case study), where all four sons reside now as members of the Ole-Wera. One of these four sons is the founder of the family that this case study is concerned with. His wife is from the Aleku clan. As nuclear family they have two adult daughters and two sons of adolescent and adult age.

The land that the family resides on in the Boman *hauslain* does not provide a meaningful extension for gardening purposes or coffee cultivation and in general the family is more oriented towards monetary income through formal work outside Boman than subsistence based on gardening and coffee cultivation. Family members admit a firm orientation towards obtaining monetary income from formal work that also derives from the fact that the family does not count with inherited land in the proximity of Boman. However, gardening activities are an integral part to the family's activities and subsistence. The family has bought several plots of gardening land in the proximity of Boman. Further, the family has access to land on the southern side of the Maril divide range. The claims of ownership or access to land in *Bomai*, on the southern side of the Maril divide range, however, are vague, and none of the family members has been to *Bomai* in recent years. Particularly vague are claims to land in the area where the husband grew up. Less vague is the access to land that the wife's relatives, of the Aleku clan, have granted to her sons. She has been looking after gardens and pigs in *Bomai*, on land of her paternal clan Aleku, in earlier years. Their children were visiting *Bomai* in school holidays, where the sons were granted coffee plots and gardens by their uncles of the Aleku clan. Even when not visiting these lands, relatives of the Aleku clan may bring coffee harvested from these lands as gift to Boman, although this is less frequent or may have ceased since the warfare between the Aleku and Nikigaulin clans in 2007.

At the time of this survey, the family had two gardens under cultivation. One of these gardens is located within the immediate *hauslain* of Boman and had been recently established. The land is owned by another member of the Ole-Wera. The owner of the plot had himself obtained this plot through purchase and now granted access to this land to the family of this case study to establish a food garden. As I was told, the family of this case study had at some point contributed to school fees for the owner of the land or one of his family members, which may be linked to being granting access to this land for gardening purposes.

Another garden cultivated is located in the proximity of Boman. The land of this garden has been bought by the family for their younger son. In fact they would say that it had been bought by himself. Their adolescent son for whom the land is destined has been involved in the process of purchase and is kept involved in the management of the land, such as clearing patches for gardening and digging drains. In this way he develops a relationship with the land and fosters his claim on it, not leaving doubt for anyone that he is the land's owner. This does not mean that he would not be the land's owner if he did not work it, but by involving in the

management of the land he strengthens his claim to the land, especially against his brother who could also be a potential inheritor of this plot.

There are several other plots of land in the surrounding of Boman that the family has obtained through purchase, but none of them was under cultivation at the time of this survey. To mention is especially one of these plots of gardening land that is located in proximity to the garden associated with their younger son, which has been purchased for their elder son.

*Family Case Study 2*

The family of my second case study is the family of one of the brothers of my previous case study. This family also does not count with land inherited in Boman, and the husband is also oriented towards monetary resources obtained through work outside the community. His wife is from the Kipaku clan. The family has one daughter, who is working outside the community. This family has not purchased gardening land in the proximity of Boman. A particular reason for this is that they do not have sons, which they would have to provide with land.

Also this family had two plots of land under cultivation at the time of this survey. One of these plots is located within Boman on the way towards Dirima. The land belongs to his wife's relatives from the Kipaku clan, said to be owned by her brothers. Since warfare between the Nikigaulin and Kipaku clans in the 1990's, however, land of the Kipaku in this area is not used by them, for fear of retaliation from the Nikigaulin, which the Ole-Wera form part of. She maintains that her brothers are the rightful owners, who inherited this land from their father. Her husband suggests that this plot of land could now be regarded to be his own. As the owners of this land from the Kipaku clan do not enter these areas any more, he would have the strongest claim to it for being the husband of the previous owners daughter. This plot of land is said to be cultivated for many consecutive cycles without fallow period, since the family does not count with alternative land access for cultivation.

The other garden cultivated by the family is located adjacent to Dirima within the area settled by the Kipaku clan. Also the land of this garden is owned by the wife's brothers. However, as her brother who owns the land resides outside the community since about 30 years, she is looking after a part of this land for the last 30 years and cultivates it continuously throughout this period of time. She mentions that she is only allowed to use this land for her family as she does not have a son. In case she had a son, her son would get used to this land and think of it as his own, which will lead to conflict.

*Family Case Study 3*

This third case study is about the family of a respected leader of the Ole-Wera of Boman. His wife is from the Kipaku clan. They have three sons and a daughter, who maintain residence in Boman. Although the family has diversified income sources, land use plays a more significant role to them in comparison to the previously discussed families. This is also linked to the fact that the husband owns numerous plots of land in the proximity of Boman.

At the time of this survey two main gardens were under cultivation. The bigger and main garden is located in the proximity of Boman. Although they count on many plots of land through inheritance from the husbands elders of the Ole-Wera, this garden is established on land that has been purchased by the family. Entering the garden, the first thing I was explained is the division of the land among their three sons. Which part of land is assigned to whom is also related to their sons own involvements in managing parts of the land, being assigned those parts for inheritance that have a particular history of their involvement. She points out that there has to be always clarity of how parents' lands are distributed among their sons, otherwise arguments are likely to arise later. The land is too extensive to cultivate all at the same time, but this allows to rotate gardens and leave parts fallow in between. Earlier they had also granted access to parts of the land to others for establishing temporary gardens.

Another garden cultivated is located just behind the main *hauslain* of Boman. The land of this garden has been inherited by the family's husband from his father. It is half of a more extensive piece of land that the husband's father divided between him and his brother. As soon as the founders of this case family became married, the husband's father handed over this land to be managed by them. This garden has been under continuous cultivation for a long time and it is mentioned that crops would only grow when they apply chicken manure or urea.

There is another small garden that is worth mentioning here. For its insignificant size it had not been mentioned to me as a separate garden, however, it is located on the way to the previously discussed garden and was shown to me when passing by. It is said to also have been inherited by the husband from his father. A grandmother of the husband had been buried on the edge of this land and I was told that she had died of an illness with symptoms that by custom prohibited the cultivation of the land where she was buried close-by. According to my informant, they just took up cultivation of this land recently again, after the father of the

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husband passed away. It appears that the custom to not cultivate this land was upheld by the elders, but that the younger generation does not fear to cultivate this land again. At the same instance I was pointed out another piece of adjacent land they own, which they granted other members of the Ole-Wera to use for gardens.

The family also has a coffee plantation, as families usually have when they count with inherited land or otherwise obtained sufficient land resources under their proper ownership. It is located just behind their house, where they also cultivate some horticultural crops. The wife also mentions to have access to land through her relatives in her native clan, the Kipaku, beside them owning various plots of land through her husband in different areas. She adds, however, that they are not cultivating lands beyond the proximity of Boman any more as stealing of garden produce in more distant gardens increasingly became an issue.

*Family Case Study 4*

For my last family case study I have less contextual information about the family. However, some particular characteristics that are under-represented in the previous case studies inform my choice to incorporate the survey of their horticultural gardens here. The family cultivated three horticultural gardens at the time of this survey, land of which was all inherited from the father of the husband. The family also counts with four differently sized coffee plantations, however, I have not obtained information how ownership of the land with coffee plantations has been obtained. But in contrast to the other families surveyed, this family stronger relies on land use for subsistence and monetary income. The higher amount of coffee plantations, which is the major cash crop for people in the area, is an indication for stronger relying on income from coffee than obtained through outside work. The plots of land used for gardens are said to be passed on through sons over several generations, with the exception of one piece of land in the proximity of Dirima that the husband's father, or an earlier generation, was said to have obtained through fight.

Of particular concern here is a garden that was recently taken into cultivation in times of my field work. When I started field work in Boman, the land of this garden was covered by thick bush. The bush covered stretches of land owned by three different persons of Boman. The land has been said to be fallow for about three decades, which resulted in the thick bush cover. The three owners of this stretches of land joined together to clear the bush for establishing gardens on the land. For this purpose they called on their relatives to help,

meaning all families of the their brother-brother lineage. In return to the work provided, all the families that helped clearing the land were granted a small plot of the cleared land to establish a garden for themselves. Plots granted in this way are usually planted for one or two cultivation cycles, before the owner of the land may destine the land to his exclusive use. Exclusive use by the owner may entail to rotate gardens and fallow patches or to destine land to plantations of coffee or marita. Further, members of this case family pointed out to me that, most importantly, plots of land have to be offered for temporary access to other members of their brother-brother lineage anyway when a larger tract of fallow land is cleared for cultivation, regardless of the fact if they helped clearing the land or not. An important aspect of reciprocity in the kinship group of the brother-brother lineage is the offering of access to fallow gardening land, which is a scarce resource in *Kul*, towards other members of the brother-brother lineage. Members of the brother-brother lineage that did not help in clearing the land, may decline the offer to establish a temporary garden on the land, but, as my informants pointed out, they have to be offered a plot to establish a garden on the land as well.

The way of establishing a garden from long-fallow bush land through collective labor is the usual way of starting a garden in *Bomai*, on the other side of the Maril divide, where land is more abundant in relation to population density. In *Kul*, the northern side of the Maril divide where Boman is located, little land is allowed long fallow periods and landholdings are often of considerably smaller size. In *Bomai*, according to my informants, the labor of clearing fallow land for cultivation may also be compensated by an abundant meal provided by the owner of the land for those who help clearing the land. It is a particularity in *Kul* that all families of the brother-brother lineage of the owner are offered gardening plots in a relatively large piece of land that is taken back into cultivation after long fallow. As reason for this practice in *Kul*, the general scarcity of land in *Kul* is mentioned. It is expected among the group of a brother-brother lineage, often referred to as an extended family, that solidarity is shown when comparatively large tracts of fallow land are brought under cultivation again. This practice is more pronounced in *Kul* than in *Bomai*, long-fallow gardening land being abundant in the latter.

The present family case study demonstrates another phenomenon of interest for the social organization of land use that I mentioned already earlier. A daughter of the family is married to a member of the Aleku, who was earlier residing adjacent to the Catholic mission in Dirima. In the warfare between the Aleku and Nikigaulin clans, however, his house was burnt

down. Since then he resides in Boman, the community of his wife, and is granted access to land for his family by her father, for example in the garden discussed in this case study.

## 5.2 Principles of Access to Land

The introduced case studies demonstrate different ways to access land, both in terms of being acknowledged to 'own' land and accessing land for temporary use. Both the claim to ownership like other forms of access to land are embedded in social relationships between individuals and larger group structures. In this section I discern ownership of land and other forms of access to land, based on above introduced case studies and my observations throughout field work in general.

### Land Ownership

To obtain ownership of land may result from different processes, for example through inheritance, fight and, as a new form to obtain land, through purchase. Most claims to ownership are based on inheritance through patrilineal descent. Though land has individual owners, members of a brother-brother lineage also share a sense of commonly holding and looking after the integrity of the land of their common founders. This notion of 'common' ownership of the ancestor's land becomes expressed in the practice, and expectation, by members of a brother-brother lineage to be granted access to plots for gardening activities when a larger tract of land gets cleared to be cultivated again after a long fallow period, for example. Also, should land become 'vacant', for example when the owner passed away and has no sons, the land is claimed by his brothers sons or other kin of the brother-brother lineage.

Land may also be passed on or granted to others that are not part of the group. On one hand this may be done to recruit individuals as members into the group. On the other hand, land may be granted to sons in their mother's group. To be granted land in one's mothers group may result in an effective claim to ownership, but stronger depends on actively affirming this claim through activity on the land. The practice of granting ownership of land to sons by their maternal relatives depends on the abundance or scarcity of land in their mother's paternal clan. In *Bomai*, the southern side of the Maril divide, land is more abundant and population pressure is low. In *Kul*, on the northern side of the Maril divide, where Boman is located, however, gardening land is scarce and land is usually not given to the sons that are affiliated

to the patrilineal lineages of other clans. The sons of my first family case study, for example, have been granted land in *Bomai* from their maternal relatives of the Aleku clan.

A more recent form to obtain ownership of land is its purchase. Land has always been part of exchange relationships, but the purchase of land as rather isolated transaction of land against money, or pigs, appears to be a new phenomenon of the last decades. This is not to suggest, however, that transactions of purchase and sale would not equally be embedded in broader social and symbolical considerations, which they certainly are. To purchase land needs to be carefully considered in its social context. Purchasing land in an area that is predominantly settled by another social group, effective access to the land may be hindered by the otherwise patrilineal inheritors of the land or the changing state of affairs between groups. The decision to sell land needs also to be considered in terms of its sanctioning by kin that would have a claim to the land as potential inheritors and by the brother-brother lineage in general for its symbolical attachment to the 'commonly' protected land of their founding ancestors. In this way, many land transactions reflect the fact that sold land is not in an area of immediate influence of one's group, while land purchased is mostly located in an area where one's group is able to exercise functions of territorial control. Transactions of land are thus following changes in settlement patterns. The Ole-Wera of Boman, for example, are predominantly purchasing land in the immediate proximity of Boman that is claimed by members of other groups and which these are willing to sell, as it is more difficult for them to maintain effective control or use of these lands. In general, effective access to individual land is mediated by social relations, there is no formal authority that enforces the effective access to land claimed by an individual.

Fights, as a way to obtain ownership of land, are of decreasing importance throughout the decades after World War II. Without having data that could depict change, fights over land are at least not of contemporary importance. Fights over land are more linked to warfare between larger group segments than fights between individuals or groups within the same clan. Warfare of the last decades first of all impacted the effective control in a temporary and possibly permanent way, rather than the claim to ownership itself by members of the group that lost in warfare. This is reflected in the effects of warfare between the Nikigaulin and Kipaku clans in the 1990's, which affects effective control, but does not change the general acknowledgement of ownership of land by the Kipaku in settlement areas of the Nikigaulin. Change of land ownership through warfare between different tribes is not of contemporary

relevance to the area of Dirima. Warfare is also curbed by state interference, as my informant's pointed out in relation to the occurrence of warfare in the 1990's and 2007.

*Other Forms of Access to Land*

The family case studies discussed point to several forms of access to land that do not entail ownership of the land accessed. Access to land without ownership is granted temporarily and embedded in social relations. Temporary access to land for gardening activities is usually only granted to members of the more immediate group segments, for example within the Ole-Wera and particularly among the brother-brother lineages of the Ole-Wera. Examples for this are the offering of temporary garden plots to members of the brother-brother lineage when a relatively large tract of fallow land is brought under cultivation again. Likewise, there are personal arrangements that allow members of the same brother-brother lineage or among the Ole-Wera to cultivate a plot of land that the owner is not making use of at the particular time. These mechanisms reflect solidarity among the members of brother-brother lineages, and the group associated with a previous men's house, and are embedded in personal reciprocal relations between individuals and families within group segments. One example for this has been discussed in regard to my first family case study that was granted temporary access to land, which they linked to earlier financial support towards the owner of the land.

Another form of having temporary access to land owned by someone else is to look after it when the owner himself is not in the community. Also this mechanism is usually limited to close kin of the owner. It may also be sisters of the owner that are allowed to look after land instead of brothers, as is the case in my second family case study, however, being linked to the fact that the sister of the owner does not have sons that could put a claim to the land after the owner's long absence from the community. In general, to grant temporary access to land is based both on kinship categories and the personal relationships of the involved parties.

### 5.3 Inter-zonal Management of Land

While members of the Ole-Wera of Boman regularly make reference to their claims to land in *Bomai*, the southern side of the Maril divide, none of my case study families actively engage in land use in *Bomai*. Many residents of Boman recall growing up between *Kul* and *Bomai*, and that they used to demonstrate more seasonal mobility between the northern and southern side of the Maril divide. In present times, however, most residents of Boman have more permanently settled in Boman and do not engage any more in regular land use or even visits

to the other side of the Maril divide. This appears as a trend that became increasingly consolidated in the decades since the establishment of the catholic mission in Dirima after World War II and is linked to several motivations voiced by my informants.

For many people of Boman, *Bomai* is strongly associated with the seasonal harvest of the pandanus fruit marita. A broad number of informants suggest that all members of Boman do have access to land in *Bomai*, particularly marita gardens. However, hardly a resident of Boman admits to actively look after marita gardens in *Bomai* or seasonally visit *Bomai* for the harvest of the marita fruit. Nowadays marita plantations are established in *Kul*, which according to my informants has only started some decades ago, allowing people to harvest marita without crossing the Maril divide range. Another reason for people to cultivate gardens in *Bomai* were the large-scale pig festivals. The scarcity and comparatively intensive use of land in *Kul* made people traverse to the southern side of the Maril divide to establish gardens on fallow land for raising pigs destined at the large-scale pig festivals.

The catholic mission with its school and the road access that became established after World War II brought new opportunities that attracted people to become more permanently established in *Kul*, the northern side of the Maril divide range, which enjoys road access. The road access allows for a stronger interrelation with the monetary economy and markets, and services like school education. To reside in *Kul* enables a diversified livelihood and better service access. *Bomai*, in contrast, is lacking this infrastructure.

Many elder and middle aged informants that reside in Boman mentioned to have grown up between *Kul* and *Bomai*. A respected leader of Boman, the husband of my third case study, for example, came to stay with his grandparents in *Kul* for attending the mission school in the late 1950's, while his parents at that time maintained residence in *Bomai*. The story of him being the first person to wear western clothes in the mission school in Dirima, given to him by missionaries, is often recited. From the mission school in Dirima he was promoted to attend a technical college in Goroka and became teacher. He now resides in Boman after retiring as teacher. His early and successful interrelation with the new opportunities that arose through school education and road access appear to constitute an important factor for being regarded a respected leader of Boman. A number of informants, like the husbands of my first two family case studies, followed similar life trajectories. For these informants, gardening activities constitute only a partial contribution to their livelihood, complemented by formal work

outside the community or small businesses, like operating small stores in Boman. Their life takes place between the northern side of the Maril divide range and other places in the country, especially the urban centers that are accessible by road, while *Bomai* does not play a role any more in their personal movements. This also lead to a partial change in consumer habits, stronger incorporating rice, tinned fish and other modern purchased foods. People that stronger rely on gardening activities shared their perception with me that these informants would be used to rely in greater extent on "store food" than on "garden food".

The motivation of other informants that do not engage in formal work outside Boman to reside in *Kul* rather than *Bomai* also relates to the increased interrelation with the monetary economy, particularly in relation to monetary resources brought into the community by their wider kinship networks. People residing in *Kul* refer to the cash flow in general along the road as motivation to reside in *Kul* rather than *Bomai*. To stay in proximity of the road allows for the sale of some excess garden produce along the road or in the roadside market of Dirima. On the other hand people are able to obtain monetary resources from kinship networks when in need, also from people that reside and work in urban centers and present their social networks with gifts of money or goods when visiting the community. Also most of my informants that do not engage in formal work outside the community admitted to not look after gardens on the southern side of the Maril divide range.

Another particular reason for people to reside in *Kul* that I already touched upon is to provide school education for their children. One of my informants of the Bomaigaulin resided in *Bomai* until recently, but moved to *Kul* with his family for sending his children to school in Dirima. He is one of the few persons I met who admitted continuing to visit *Bomai* regularly and I was able to accompany him to *Bomai*. While some of my elder informants mentioned to stay with relatives in *Kul* while attending school in Dirima, he mentioned that his kin expected him to shift residence to *Kul* with his children.

As the large-scale pig festivals have ceased and the planting of marita was started in *Kul* itself, and for the infrastructure associated with Kul, people diminish their activities of land use in *Bomai*. On the other hand, people frequently discuss the potential of engaging in land use in *Bomai*, for the potential of its land resources. Though the rugged slopes of the southern side of the Maril divide, descending from approximately 2500 to 1000 meters above sea level, limit the agricultural potential of *Bomai*, land resources are rather abundant and may allow for

commercial agricultural activity to some extent. However, only few have started to commercially cultivate crops, beside coffee, on the southern side of the Maril divide, and people link the scope for commercial land use in *Bomai* to the hope of road construction projects that would improve access to *Bomai* for the transportation of crops. Till date, people carry products from *Bomai* personally over the range, which limits the scope to make commercial use of land resources in *Bomai*.

A trend observed is rather the consolidation of production and landholdings in proximity of permanent residence. This is visible in Boman, where people buy land from members of other groups that hold land in the proximity of Boman. Further, people of Boman admit to make less frequent use of land that is not in the immediate proximity of Boman. While the proximity of cultivated gardens is convenient from a logistical perspective, people further stress that the stealing of garden produce became a growing concern with increasing distance of gardens from Boman.

### 5.4 Conclusion

In this chapter I have discussed forms of access and management of land in relation to the governance of land use. While in the previous chapter I introduced a general understanding of the larger group structures relevant for the governance of land use, in this chapter attention was given to the governance, access and management of land that manifest in data obtained through family case studies of the Ole-Wera in Boman. By drawing on additional observations from field work, I expanded the discussion to the inter-zonal management of land between the northern and southern side of the Maril divide.

Ownership of land is mostly passed on through patrilineal inheritance and increasingly through purchase. Two of the family case studies introduced relate to families that do not count with inherited land in Boman, but were able to access land for subsistence gardens through purchase and other arrangements of being granted temporary access to land. Access to land is mediated by social relations embedded in kinship. The symbolical importance that brother-brother lineages give to the integrity of the land resources that they were passed on from their common founders constitutes an important element for the governance of land use. The sense of common responsibility to maintain the integrity of their founders land resources and the alliance of solidarity that brother-brother lineages express based on this common bond

are a determining principle that governs land access and management strategies of land resources.

Processes of transformation in the governance of land use that this chapter referred to is the increasing role of land purchases in Boman that lead to a consolidation of land ownership in proximity of Boman. Inter-zonal management of land, between the northern and southern side of the Maril divide range, played a more important role in the past, and members of Boman cultivated land in a wider area, which entailed greater spatial mobility. I argue that a shift takes place in land management strategies, based on permanent residence in Boman and a stronger consolidation of landholdings in the immediate proximity of Boman and less emphasis on land use activities in the wider area. Land resources on the southern side of the Maril divide range may in principle have the potential to relieve land pressures in the densely populated northern side of the Maril divide range. Yet, many people are stronger oriented towards diversified income sources enabled by road access in the densely populated areas with road access that people enjoy on the northern side of the Maril divide range. I would suggest that pressure on land on the northern side of the Maril divide may not have decreased since Wohlt & Goie's (1986) report on land use that identified potential to relieve pressure on the northern side of the Maril divide range by the land resources on the southern side of the Maril divide range. But based on my observations in the area, many families seem to have rather reduced than increased their activities of land use on the southern side of the Maril divide range. People are aware of the potentials that land resources on the southern side of the Maril divide range may offer, but rather look at these potentials in relation to awaited infrastructure developments.

## 6. Institutions of Governance and Government

In this chapter I look at particular institutions of governance and government that play a role in processes of transformation in the governance of land use. Particular institutions of government that local actors draw upon for the governance of land use are a local court system and the Local Level Government (LLG), a legislative level of government. Institutions of government have been initially introduced to the PNG highlands by the Australian colonial administration, laying the foundation for current government institutions under the independent state of PNG since 1975. The increasing importance of institutions of government in the governance of land use is paralleled by the decreasing importance of the

men's house as institution of the governance of land use that has been abandoned throughout the last decades.

## 6.1 The Men's House

The men's house, in Tok Pisin *hausman*, has been a social institution of central importance in PNG highland societies that does not exist anymore in the area of Dirima. The men's house, as previous co-residence of the male members of the Ole-Wera subclan section of Boman, constituted a central institution for the coordination of land use. As Podolefsky (1978:106) stated for the Golin of Mul, to the east of Dirima: "During the evenings men sit in the men's house telling stories of past events and recounting the day's activities. Plans are discussed for initiating new garden sites or exchange activities."

Men's houses constituted social institutions not only for the coordination of land use activities, but for debate and decision-making in general. The men's house of the Ole-Wera of Boman does not exist anymore, which is linked to the co-residence of men with their wives and children as having been promoted by missionaries. The Ole-Wera, as social group, thus do not count any more with a central institution of decision-making and coordination in relation to activities of land use. Strategies and decision-making in relation to land use became stronger relocated at immediate family units and less at the level of the Ole-Wera or its constituting family lineages of Olebiagaulin and Werabiagaulin. Certain functions of the men's house, like the negotiation and decision-making in relation to disputes, have been assumed by an informal "leaders court", comprised of respected members of the Ole-Wera with leadership qualities. Strategies of land use, however, are increasingly taken within nuclear families and only coordinated personally between individuals, instead of being discussed and coordinated at group level. From a more reflective perspective, some informants pointed out that the abandoning of the men's houses was a central concern of missionary activity for strengthening the influence of churches by weakening social institutions of collective action and leadership. Men's houses also become rebuilt on land of individuals or existing ones continued to be used as campaign houses for candidates in national elections. Also youths may built a common house for gatherings and the hosting of guests in the community, but these modern "men's houses" do not have the functions for the governance of land use that earlier men's houses had.

### 6.2 Local Courts and the Land Mediator

Disputes around land, like other conflicts in general, are dealt with through a local court system. Dirima has a "village court" that counts with a magistrate, a peace and a land mediator, all of them members of the clans of Dirima, trained and funded to perform these roles by the state. The village court deals with disputes between individuals and groups of the different clans of Dirima. The village court constitutes the second instance for disputes within lower group segments. For example if a dispute between two parties of Boman cannot be solved within Boman, it might enter the village court of Dirima. Disputes within Boman are in the first instance dealt with through "leader courts", as my informants referred to it, an informal court procedure carried out through respected leaders of Boman.

The local court system has a two-fold relevance for the governance of land use. On one hand, land is regarded a value that may be used for compensation payments ruled by a court. In the case that a party that is asked to pay compensation to another party does not count with monetary resources or pigs to do the compensation payment, it is asked to hand over a plot of land as compensation payment or sell some land to meet the sum of compensation through money or pigs. On the other hand, the local courts deal with disputes around land.

A particular role in disputes around land has the land mediator, both within and outside court procedures. Apart from the handling of disputes, the land mediator also records land transactions. Generally there is no national legislative framework in relation to the formal acknowledgement of individual land claims. The land mediator records only transactions of land, and not land claims in general. He pointed out to me that the transference of land ownership from one individual to another is, most significantly, to be witnessed by community members to become effective. Recording a transaction of land is a complementary process that is referred to in the case that the transference of land is disputed later. Documents that record transactions of land are then referred to in the case that disputes arise later in relation to particular land transactions.

According to the land mediator of Dirima there are three principal scenarios of cases that he is approached with. The first scenario is of boundary disputes between adjacent plots of land. If there is a dispute in relation to land boundaries, the land mediator has two principal ways to handle the dispute by defining the actual boundary in dispute. The first way is through the identification of boundary markers, especially the *tanget* plant (*Cordyline* spp.) that is mostly

used for this purpose. In case *tanget* boundary markers are visible, a boundary line is drawn between the existing *tanget* plants and marked as boundary, for example by planting *tanget* along this line. In case boundary markers are not sufficiently present for conclusions on the boundary line, elders are asked for advise to clarify the boundary line based on their memory.

A second scenario is that an individual had not been in the community for an extended period of time and claims back his land that is meanwhile used by others. Disputes of this nature are usually handled by handing back the land to the original owner that returns to the community. However, if the more recent user had for example established a coffee plantation on the land, the original owner may be asked to compensate the loss of the coffee plantation that the more recent user experiences. In other cases a man may return to the community and claim lands of his father that are, at the time of his return, entirely used by his brothers. In such case according to the land mediator, the land in dispute may be divided among the brothers in dispute of their inherited land.

A third scenario is disputes that arise when land that has been sold or otherwise changed ownership is claimed back by individuals that would otherwise have a claim to patrilineal inheritance to the land in dispute. When the land mediator counts with documentation that prove that the land had been sold or otherwise changed ownership, the case is decided in favor of the owner according to existing records that are approved by the land mediator. In case no documentation of a change in ownership of disputed land is existing, the handling of the dispute is based on questions that regard the nature of the transaction and an evaluation of the claims by witnesses of the questioned transaction of land.

The handling of disputes about land, and especially those about ownership of land, is, according to various informants including the land mediator, not only based on judicial principles, but sensitive to the negotiation power of involved parties. With negotiation power I refer to the ability to enforce claims through, for example, notions of leadership or the number of adolescent sons that are able to pose threat to a less numerous party in dispute. If a dispute enters the local court systems or is presented to the land mediator, and how the dispute is then dealt with, depends on factors beyond judicial principles. The way a local court decides on a disputed issue, is always aimed at a ruling that carefully negotiates the interests and negotiation power of involved parties. Depending on the status and numbers of involved parties, court decisions aim at negotiating outcomes that are most acceptable to involved

parties in the context of extra-judicial negotiation practices. An example that the land mediator mentioned is that a man without sons, who has spent an extended period of time outside the community, may refrain to claim back his land from others that started using it. Without having sons, and thus no inheritors of his land, a man knows that the claim to his land that he temporarily abandoned may be futile and thus refrain from claiming it back from other individuals that started using his land.

### 6.3 The Local Level Government (LLG)

The Gumine District comprises three LLG's, Mt. Digine LLG, Bomai-Kumai LLG and Gumine LLG. The area of field work is part of the Gumine LLG. The LLG is, besides the national and provincial governments, a legislative government body. The Gumine LLG is composed of 21 elected ward councilors, 5 ward councilors corresponding to the clans of Dirima. The Nikigaulin, as a comparatively large clan, comprise three wards, for example one ward each corresponding to the Milinkane and Bomaigaulin. The Kipaku and Aleku clans comprise one ward each. Each ward in the area of Dirima, and their corresponding councilors, represent about a thousand people in the Gumine LLG.

The LLG council, comprising the 21 councilors, is supposed to meet four times a year, though public servants of the District Administration admit that this does not always happen due to lack of attendance by elected councilors. The councilors of each ward are further supposed to appoint ward development committees to work out legislative proposals and prioritize issues to be discussed in LLG meetings. However, ward development committees often exist only on paper. While the LLG as institution of government may thus be seen to be of limited functionality, examples of the passing of legislation and its implementation are existing. An example of a 'council law' passed recently is the stipulation of the sum of compensation to be paid for stealing garden produce, which I witnessed to be applied in a local court case when a person was caught while stealing garden produce from another family's garden.

Another example of successful legislation by the LLG, with specific relevance for the governance of land use, is the law that pigs have to be tethered in *Kul*, the densely populated area north of the Maril divide range. This law is said to have been passed in the 1990's and is well accepted. Prior to this law, and still the case in *Bomai*, pigs were roaming freely, while gardens were fenced to avoid damage by pigs. Several reasons are stated for the adoption of the law that pigs have to be tethered in *Kul*. When a garden is established on land after long

fallow, the trees that have grown on the land are used to build fences. But as most garden land in *Kul* does not experience long fallow periods, the building of fences has increasingly become a constraint for lack of nearby building material. The lack of trees on garden land to build a fence is said to have increasingly constituted a factor that discouraged the establishment of gardens. The law that pigs have to be tethered in *Kul*, is said to have aimed at alleviating the constraints of establishing gardens and to encourage gardening activities. In 1978, Podolefsky (1978:100) stated that "[b]ecause of the lack of wood for fence building, a number of men will frequently enclose their individual garden plots within a single fence". Podolefsky (1978:100-1) further noted that "observed dispute cases reveal that the owner of a pig which damages garden crops is held responsible for the damage regardless of the condition of the fence". That pigs are to be tethered in Kul since the 1990's, thus provides a solution to two related problems. First, that wood material to build fences is scarce on linuxconsecutively cultivated gardens. And secondly, the difficulty of pig owners to avoid their pigs damaging gardens.

The LLG has assumed a role in the governance of land use by passing the law that pigs have to be tethered in *Kul*. The legislative government institution of the LLG thereby functions as a institution for collective action in the management of land that provides an example for processes of transformation in the governance of land use.

## 6.4 Conclusion

In this chapter I discussed central institutions of governance and government that people of Boman, Dirima and wider area of the Gumine LLG draw on for the governance of land use. Institutions of government were only introduced to the area after 1945. The governance of land use was exclusively based on local social institutions, like men's houses, until the effective arrival of a state system after 1945. Since then, however, people of Boman, Dirima and the wider area, have adopted institutions of government for the governance of land use. As institution of government, the local court system has introduced mechanisms to peacefully settle disputes over land. The LLG, as element of legislative government, provides a means for successful collective action in land management, as the law to tether pigs on the northern side of the Maril divide in the Gumine LLG has demonstrated. The adoption of a local court system and the LLG for the governance of land use as new forms of institutions of government give evidence of a process of transformation in the governance of land use.

## 7. Concluding Discussion

In this thesis I dealt with processes of transformation in the governance of land use in the PNG highlands. Emphasis of this thesis has been to provide an understanding of the governance of land use in area of Dirima in the PNG highlands and the processes of transformation the governance of land use has been subject to since 1945. Governance of land use has been approached through three overlapping angles, namely: The social organization of the governance of land use in terms of group structures and social segmentation; the governance of land use as expressed through arrangements of access and management of land; and, the discussion of particular historical and contemporary institutions with relevance for the governance of land use.

The segmentary structure of social groups constitutes an important element of social organization in relation to the governance of land use. Ownership and access to land is significantly governed by an hierarchical structure of social segmentation. However, strategies for the management of land are increasingly individual and to a diminishing extent based on the coordination of land management at overarching levels or social segmentation, like for example the alliance of groups with characteristics of a tribe. The decreasing relevance of larger alliances with social and territorial attributes for the coordination of land use strategies is further manifested through the abandoning of large-scale pig feasts and territorial warfare.

Ownership of land is predominantly obtained through inheritance. While the acquisition of land through warfare has been of diminishing importance since 1945, purchase of land constitutes a new form to obtain land ownership that became increasingly important. Land management strategies of nuclear families show an increasing tendency to consolidate agricultural production in proximity to residence, while residence is preferably chosen along the road network that connects Dirima to other parts of the country and providing access to a range of services, like school education for example. At the same time, families decreased mobility for the management of land in different ecological zones, which constituted a more important characteristic of land use strategies in the past.

The men's house played a significant role for the governance of land use in the past, constituting an institution for debate, decision-making and collective action for coordinated strategies of land management. The tendency towards more individual strategies of land

management, based on decisions taken within the nuclear family, is paralleled by the abandoning of the men's house as institution of coordinated collective action of land use. Instead, the local court system, particularly the informal "leader courts", superseded the men's house as institution of debate and decision-making in the handling of disputes in relation to the group's members land use strategies. On a level of larger group structures, land use is no longer significantly governed by alliances for the coordination of ceremonial pig feasts and territorial warfare, but increasingly by adopted legislative and juridical institutions of government, in form of the LLG's and village courts.

The contemporary governance of land use draws on both, elements of government and informal social institutions. The adoption of elements of government for the governance of land use constitutes a major process of transformation in the social organization of land use since 1945. Since the interrelation with state systems, missionaries and the monetary economy from 1945 onwards, the governance of land use is to decreasing extent based on territorial reference by larger alliances of groups that have been given tribal attributes in earlier anthropological work. Social segmentation does play a significant role in the social organization of land use, in terms of ownership, access and management of land. But since 1945, the governance of land use is not as exclusively based on segmentary group structures with territorial reference as to analyze governance as amounting from socio-territorial organization itself. The contemporary governance of land use combines elements of local social organization and adopted institutions of government.

And while this thesis primarily presents an anthropological perspective on the governance of land use, it is equally a case of interest for theorizations in political science. 'Governance' in political science is conceptualized as primarily based on government and increasingly towards including actors beyond government. The present study in contrast depicts a process in which governance, exclusively based on informal institutions and social organization of land use without government, is increasingly incorporating and drawing on elements of government.

The processes of transformation observed in this study, from governance based on socio-territorial organization to governance drawing on both, social organization and elements of government, are correlated with more individual strategies of land use. While in the past, strategies of land use were stronger based on collective coordination through debate and decision-making in the men's house, the adopted institution of the "leader court" is oriented at

debate and decision-making in relation to actions of individual members of the group rather than collective coordination among the group as unit.

The tendency of "individualization" that becomes apparent in land use strategies discussed in this thesis, like the processes of transformation in the governance of land use in general, are manifestations of broader processes of social change that the societies of the PNG highlands are subject to since having been contacted by colonial administration, missionaries and others. It needs to be stressed that the process of transformation since 1945, which this thesis touches upon, is much broader than the aspects of social organization and governance discussed here. There are several aspects of social change that can equally be taken into consideration when dealing with social change in general and processes of transformation in the governance of land use in particular. Aspect that I have either not incorporated in this thesis or that could be considerably extended on are, for example, changing gender relations, worldviews, cosmologies and values, the achievement of social status and roles of authority, to name just a few. These are fundamental aspects of social change with relevance for processes of transformation in the governance of land use, which I, however, did not feel able to deal with in sufficient depth within the scope of a master thesis.

The limited range of issues this thesis dealt with in relation to processes of transformation in the governance of land use, however, make apparent the challenges of formal legislation for land reforms in PNG. The definition and identification of land ownership for formal registration of landholdings towards facilitating formal economic activities that involve investment in land and formal agreements of land use are particularly challenging in the context of multiple layers of group structures that mediate ownership and access to land. While the governance of land use as discussed in this thesis points to institutional arrangements that increasingly enable and respond to more individual strategies of land use, the vague nature of individual ownership claims with increasing distance from residence and decreasing intensity of activity, do, for example, not present a favorable context for a general formalization of individual ownership claims. Formalization of individual ownership claims also includes the danger of interfering with the numerous ways of obtaining temporary access to land for subsistence purposes that could potentially have negative repercussions on many families's subsistence.

# References

Alvesson, M. & Sköldberg, K. 2009. *Reflexive Methodology: New Vistas for Qualitative Research*. Sage Publications. London.

Barnes, J.A. 1971. *African Models in the New Guinea Highlands*. In L.L. Langness and J.C. Weschler (eds): *Melanesia: Readings on a Culture Area.* pp. 97-107. Chandler Publishing Company. Scranton.

Bouchard, J.F. 1973. *The Impact of Roads in the Gumine Region of Papua New Guinea*. Occasional Paper No 5. Department of Geography. University of Papua New Guinea. Port Moresby.

Brandt, S.A. 1988. *Early Holocene Mortuary Practices and Hunter-Gatherer Adaptations in Southern Somalia*. World Archaeology Vol 20(1) pp. 40-56.

Brookfield, H.C. & Brown, P. 1963. *Struggle for Land. Agriculture and Group Territories among the Chimbu of the New Guinea Highlands.* Oxford University Press. Melbourne.

Brown, P. 1972. *The Chimbu: A Study of Change in the New Guinea Highlands.* Schenkman. Cambridge.

Donohoe, P. M. 1987. *Breath of Dirima: A Research Project*. Thesis. University of New South Wales.

Fingleton, J. 2004. *Is PNG viable without Customary Groups?*. Pacific Economic Bulletin Vol 19(2) pp. 96-103. Asia Pacific Press. Canberra.

Hanson, L.W., Allen, B.J., Bourke, R.M. & McCarthy, T.J. 2001. *Papua New Guinea Rural Development Handbook*. The Australian National University. Canberra.

Helm, J. 1965. *Bilaterality in the Socio-Territorial Organization of the Arctic Drainage Dene.* Ethnology Vol 4(4) pp. 361-385.

Hide, R.L. 1981. *Aspects of Pig Production and Use in Colonial Sinasina, Papua New Guinea.* PhD Thesis. Columbia University.

Howlett, D., Hide, R.L., Young, E., Arba, J., Bi, H. & Kaman, B. 1976. C*himbu: Issues in Development (A Report to the Central Planning Office, Papua New Guinea)*. Development Studies Centre. The Australian National University. Canberra.

King, G.E. 1976. *Society and Territory in Human Evolution*. Journal of Human Evolution Vol 5 pp. 323-332.

Lea, D. 2009. *New Initiatives in the Development of Customary Land: Group versus Individual Interests*. Pacific Economic Bulletin Vol 24(1) pp. 49-64. Asia Pacific Press. Canberra.

Podolefsky, A.M. 1978. *Pattern, Process, and Decision-Making in New Guinea Highlands Dispute Handling.* PhD Thesis. State University of New York. Stony Brook.

Sandström, E. 2008. *Reinventing the Commons: Exploring the Emergence of Local Natural Resource Management Arrangements.* Acta Universitatis Agriculturae Sueciae. Doctoral Thesis No. 2008:48. Uppsala.

Standish, W.A. 1992. *Simbu Paths to Power: Political Change and Continuity in the Papua New Guinea Highlands*. PhD Thesis. Australian National University. Canberra.

Stoker, G. 1998. *Governance as theory: Five Propositions*. UNESCO. Blackwell Publishers. Oxford.

Usher, P.J., Tough, F.J. & Galois, R.M. 1992. *Reclaiming the Land: Aboriginal Title, Treaty Rights and Land Claims in Canada*. Applied Geography Vol. 12 p. 109-32.

Weiner, J & Glaskin, K. 2007 (eds.). *Customary Land Tenure and Registration in Australia and Papua New Guinea: Anthropological Perspectives*. Australian National University E Press. Canberra.

Wohlt, P.B. & Goie, A. 1986. *North Simbu Land Use. Research Report of the Simbu Land Use Project. Volume V*. Institute of Applied Social and Economic Research. Port Moresby.