

Changing Livelihoods

The case of small-scale mining in Northern Luzon, the Philippines



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Cover photos: These photographs are taken in Kusaran and Bashoy, Kabayan. In the upper picture: carrot fields and a rice paddy (picture taken by Anton Neefjes) . In the lower picture: entrance of a mining tunnel in Bashoy with some equipments in front (picture taken by Grytsje Kunst).

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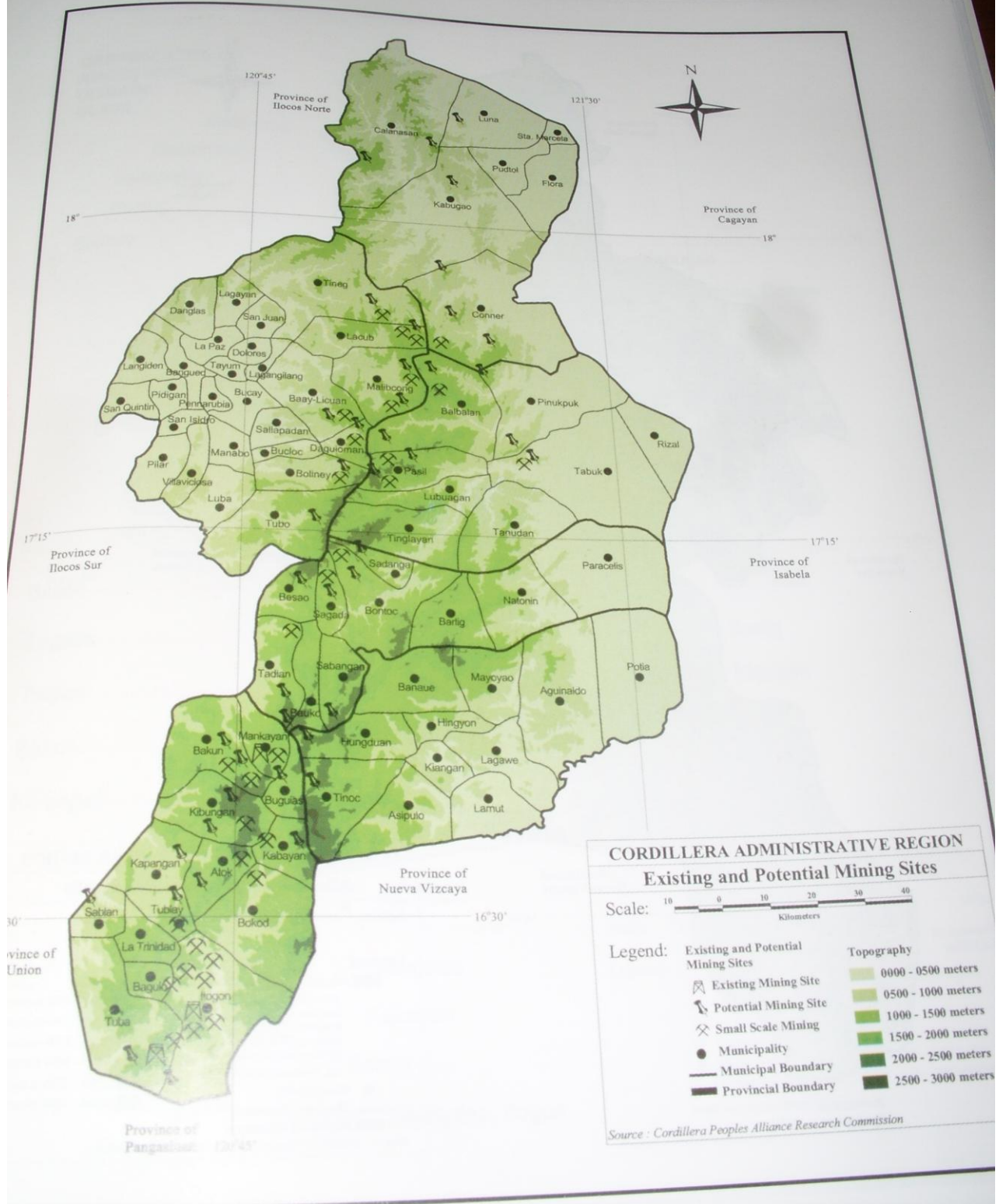
Map 1: Luzon. Source: Wikipedia.



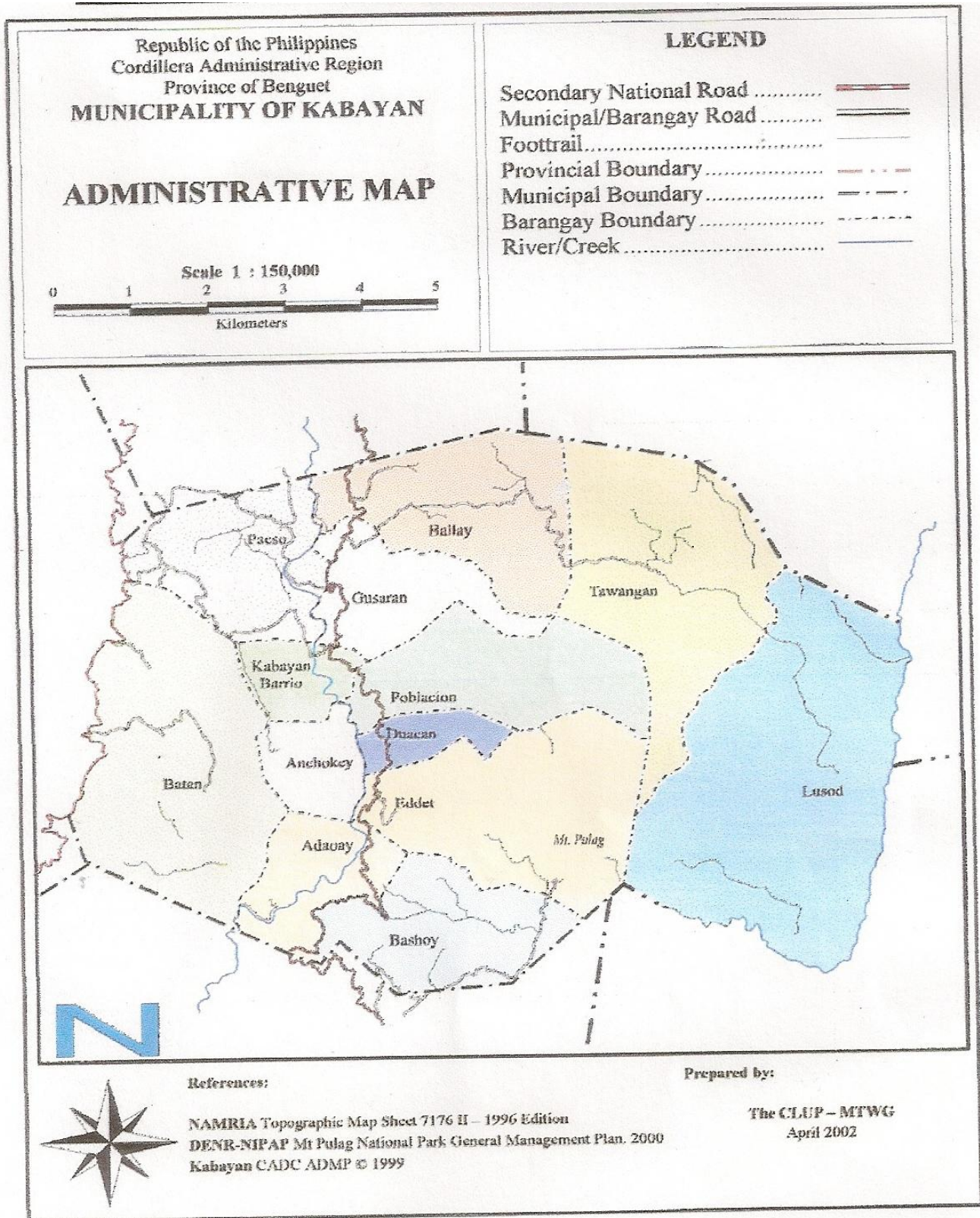
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Foreword

It took us about one year to carry out the research and to produce this thesis as an end product of our four year course anthropology, whereof eleven weeks of fieldwork in the Philippines. It started in June 2012 with a meeting in college designed to find a research partner. It became apparent that we both were interested in developmental issues related to agriculture and mining. The team was composed soon after, which was followed by a visit to a lecture organized by three students who conducted research in the Philippines last year. They were telling very enthusiastically about Philippine culture and their research experiences in the Philippines. By means of the presentation, our already existing interest in the Philippines was further aroused. We want to thank them for doing this, and also for providing information previous to and during our research. During this meeting there were also speakers from the Cordillera Peoples Alliance (CPA), which is the organization who facilitated the three aforementioned students, and who would also facilitate our stay and research in Kabayan, the Philippines. In particular, we want to offer our gratitude to Bestang Sarah Dekdeken, Lulu Gimenez (Apit Tako) and Ampy and Sonny (CPA Kabayan). We came in contact the CPA thanks to Theo Droog from the NFS, the Dutch-Philippine Solidarity Movement. We want to thank him and his wife for sharing their knowledge with us, during a Filipino meal at their home and for his assistance during the preparation of our research design. In the Philippines we met a diversity of people, having at least one thing in common, which is their hospitality. Great thanks goes out to our host families, for sharing their houses, stories, knowledge, food and drinks. This also goes for the many different informants we have spoken to, who invited us to their homes and to different occasions like weddings and house blessings and who provided us insight in their lives in Kabayan. We want to thank the municipal officials, *barangay* captains and *barangay* officials for giving us access to the area, introducing us to the people and inviting us to different meetings. We would like to express our gratitude to our translators. Without them this thesis would not be here. Special tribute is paid to Marc Simon Thomas, our supervisor who provided us with the essential feedback needed for improving our thesis and supporting us throughout the project, from beginning to end.

Introduction

Peasants are not what they used to be. No longer are peasants seen as rural people who are solely or primarily engaged in farming. Scholars involved in a range of disciplines like economy, sociology, social geography, development studies and anthropology have come to the realization that for peasants farming is just one economic activity among many (Ellis 2000b; Rigg 2005a; Rigg 2005b; Schüren 2003; Start and Johnson 2004). While it has now been widely acknowledged that today peasants are active in a broad spectrum of work activities besides farming, this has also been the case in earlier periods (Schüren 2003). Today however, scholars witness that the involvement of peasants in agricultural activities is actually declining and peasants are more often involved in so called 'non-farm activities' than before (see Eder 1993; Hayami and Kikuchi 2000; Molle et al. 2001 for cases in South-East Asia). This realization has led to the livelihood approach which comes to terms with how rural people actually make a living. Even if farming still plays a central role in the lives of rural dwellers, it is just one of the different ways by which they make a living (Yaro 2006:126-127). The broadening of livelihood activities, called 'livelihood diversification', is a way for rural people to increase their standard of living or to secure their economic position (Ellis 2000b). While the reasons for people to branch out from farming have been extensively discussed in the literature on rural livelihoods, the non-farm activities to which they turn to and the reasons to turn to these non-farm activities have not been thoroughly examined (Banchirigah and Hilson 2010:159). One activity that has been particularly overlooked is small-scale mining. Small-scale mining has become a central topic in the development literature, spurred by a major increase in mining activities in rural Sub-Saharan Africa. However, outside Africa and in the livelihoods literature it has remained a fairly unexplored topic (Banchirigah and Hilson 2010:158-159,175).

The aim of this study is to contribute in bridging the gap in the livelihoods literature concerning non-farm activities by looking at small-scale mining in the discourse of livelihoods. It will not only pay attention to the factors that make peasants turn away from farming, but also to the reasons of peasants to turn to other activities, in this case small-scale mining. Both the effects of the structural processes of globalization, liberalization and modernization on rural livelihoods are considered, as well as the livelihood strategies that the people adopt in the face of the changes that these processes bring about. The usefulness of the strategy of diversification into small-scale mining will be assessed.

The research has been conducted in the Philippines, in the rural municipality of Kabayan located in the Cordillera region. Here farming as well as mining has been part of the people's lives for centuries, dating back to the 16th century (Caballero 2006:146-149; Wiber 1993). Recently however,

the number of small-scale gold mine activities has seen a dramatic increase.¹ In this ethnographic study, this sudden increase in gold mine activities is explained. The motives of the people to turn to these mining activities and the relation to the farm activities is the focus of this study and will be studied through the livelihood approach. The central question that follows on this is: which livelihoods and livelihood strategies are present in Kabayan and what is the role of farming and mining herein?

To answer this question, fieldwork has been conducted in Kabayan for eleven weeks in the months of February to April. The research has been conducted with the help of the Cordillera Peoples Alliance (CPA). The insights gained during the fieldwork and written down in this thesis will be shared with the CPA so they can better comprehend the situation of the people of Kabayan and may be better able to help them improve their living conditions.

The study has been conducted by two researchers. This made it possible to study small-scale mining in relation to farming. This method has provided an understanding of why some rural people engage in mining activities while others do not. One of the researchers has focused on mining: examining the work and the reasons for the miners to partake in small-scale mining. The other researcher has focused on farming: looking at the work activities of farmers and their decision to mine or not to mine. The findings are pooled together in this thesis. As small-scale mining is foremost a male activity, it turned out to be a wise decision to let the male researcher study this. As expected, being a man facilitates the access to the mine community. The female researcher had the opportunity to focus more on the livelihoods of women. By including both the livelihoods of men and women, the research provides a comprehensive description of the livelihoods of the people in Kabayan. In addition, the teamwork also resulted in researcher triangulation, enhancing the reliability of the data. Even though each of the two researchers were carrying out the research in a different part of the municipality, they were able to meet each other twice a month to discuss and reflect on the data, methods and research progress.

For the research different methods have been used to improve the reliability of the data. The main method has been the interviewing of people. At least eighty different people have been interviewed. These interviews range from informal interviews to semi-structured interviews. Interviewing is a useful way to get insight in the views of people concerning their livelihoods. To the informants the opportunity was given to formulate their own thoughts on the matter. This has enhanced the internal validity of the data. In addition to the interviews the researchers had many

¹ Information gained by mail correspondence with Lulu Gimenez of Alliance of Peasants in the Cordilleran Homelands and confirmed during our research in Kabayan.

informal conversations with the people, resulting in a list of more than one hundred informants. In gathering the data through interviews and conversations, the researchers have been aided by local translators. This has facilitated access to the informants as the translators were able to explain the presence and purpose of the researchers. The interviews have been complemented by observing the livelihood practices and participating in it. This has been done in order to get a better understanding of the different activities carried out. It also served as a check to the information given in the interviews. Showing sincere interest in the work helped the researchers in building rapport with the informants. The true names of the informants are not used in this thesis for reasons of privacy. Instead of these, pseudonyms have been used.

Besides gathering primary data, secondary sources like government documents, newspaper articles and additional scientific literature have been examined. Together with mapping the research location, this has helped the researchers to see the broader context in which people make their living. The methodological triangulation together with the researcher triangulation has improved the reliability of the data.

The data have been analyzed by coding the field notes and discussing the notes and codes with the fellow researcher. After the jot notes have been worked out in field notes, the field notes have been analyzed by using a coding system. This has provided a clear overview of the data by which research gaps could be detected. One of the researcher has used the coding program Nvivo to code the field notes, while the other one had developed an own coding system using Word. The outline of the thesis is as follows: in chapter 1 the theoretical framework of this study will be presented. Changing rural livelihoods in 'developing countries' will be linked to theories on globalization and development to show how structural forces are altering local livelihoods. A closer look will be taken at these changing rural livelihoods: the increasing importance of non-farm work activities for the livelihoods of rural dwellers will be discussed. The discussion moves on to mining as rural non-farm work. A brief overview will be given on the existing literature on mining as part of rural livelihoods. It will be made clear how, on the one hand, rural people use small-scale mining for their own benefit as part of their livelihood strategies, while on the other hand mining, and in particular large-scale mining, can negatively affect the livelihoods of rural people. After having discussed the general theory on the matter, an examination will be given of the specific conditions of the research location. In chapter 2, the livelihoods of Kabayan will be seen in its geographical context and put in historical perspective. The context chapter will provide important background information for the two chapters that follow: chapters 3 and 4. These chapters constitute the empirical section of the research in which the findings of the fieldwork will be presented. In chapter 3 a description of the various livelihoods of the people in Kabayan will be given, with the focus on farming and mining. The

difficulties the residents face with farming will be discussed, the practice of small-scale mining will be described, and the rationale for partaking in small-scale mining will be explained. In chapter 4, the different and resourceful ways by which the people cope with low returns of farming will be discussed. It will be made clear that turning to small-scale mining is only one of the several livelihood strategies, but that it is an important one. In the conclusion the research question, 'which livelihoods and livelihood strategies are present in Kabayan and what is the role of farming and mining herein?', will be answered. The authors will argue that in the face of uncertainty and low prices of agriculture, rural livelihood diversification is indeed a widespread livelihood strategy for the people of Kabayan. This is not limited to small-scale mining, but it applies to a range of other work and services. Small-scale mining is, however, one of the most lucrative work activities one can diversify to and in the absence of mining opportunities local diversification may not be enough to offset the low income of farming and people may have to migrate to other places.

1 Theoretical Framework

1.1 Development discourses: linking local development with global processes

The term 'development' is often seen from a Western point of view. Western development as modernization is then taken as a prototype for development in 'third world countries' and 'development' is used interchangeable with 'modernization' as discussed in modernization theory (Greig et al. 2007:74). However, this prototype is often not suitable for these countries. This 'development' can be viewed as a dependency-creating mechanism and a tool of imperialism (Greig et al. 2007:83-92). This is displayed in dependency theory, which states that developing countries are being exploited by developed countries. According to dependency theory, developing countries are made dependent on loans of the International Monetary Fund and the World Bank, which draft laws and policies in favor of free markets. However most developing countries are not able to participate as equally as Western countries in these markets. In brief, dependency theory states that neoliberal ideology can result in greater inequality, with profits for rich countries, but in losses for poorer, 'third world countries' (Greig et al. 2007:125). In contrast, in the neoliberal view people are rational actors and are able to make choices which benefit them economically (Greig et al. 2007:24).

The way development is approached in this study is through the modes of production approach, also known as the articulation school. A mode of production is a way of organizing production. It is 'a set of social relations through which labor is deployed to wrest energy from nature by means of tools, skills, organization, and knowledge' (Wolf 1982:75). The modes of production approach states that different modes of production can exist next to each other. This is in contrast to Marx' view which predicted that traditional modes of production would be replaced by capitalist ones due to the expansion of capitalist markets. The articulation school does not assume that western-style capitalism destroys every non-capitalist domestic economy (Margold 1989:38). We use this approach because it is shown that today non-capitalist modes of production can exist next to capitalist modes of production (Margold 1989).

Approaches of development are closely linked with processes of globalization. Globalization has existed since the internationalization of commerce, it is accelerated by new transport and communication technologies and has resulted in the widespread movement of capital, labour and services (Nicoletopoulos 2008:2). On the one hand are scholars who see it as the driving force behind the growth of the world economy. On the other hand are scholars who argue that globalization is causing rising inequalities between rich and poor and is destructing the environment (Nicoletopoulos 2008:1). Mittelman's view of the effects of globalization will serve as the background for this research of changing livelihoods. According to Mittelman '[...] the dominant form of globalization means a historical transformation: in the economy, of livelihoods and modes of existence; in politics,

a loss in the degree of control exercised locally and in culture, a devaluation of a collectivity's achievements' (Mittelman 2000 in Al-Rodhan and Stoudmann 2006:14).

Globalization processes are changing traditional livelihoods, which are mainly located in rural areas. Therefore, the debate on development linked to globalization has much to do with the concept of livelihood strategies and changing modes of production.

1.2. Rural transformation and livelihood diversification

Traditional views see rural people in developing countries as peasants, tied up to the land (Rigg 2005b:174). For the largest part of history this is probably true. Recently however there seems to be a de-linking of land from rural livelihoods. Rural households now increasingly gain a living through a diverse set of activities that is not limited to agriculture (Rigg 2005b:174-175). Bryceson (2002) speaks of this phenomenon as 'de-agrarianisation'. She defines this as 'the long-term process of occupational adjustment, income-earning reorientation, social identification and spatial relocation of rural dwellers away from strictly agricultural-based modes of livelihood (Bryceson 2002:726). One of the main causes for the move away from farming can paradoxically be found in agricultural intensification (Davis 2003:14-15; Lanjouw and Stern 1998 in Start and Johnson 2004:40). Initially, to meet the rising population, ways of intensifying agricultural methods were sought after. This was done partly by increasing labour activities and partly by technical improvements. So as the population grew, work activities increased and agricultural work was shared and spread among the rural village population 'to guarantee its members some basic livelihood within the confines of the community' (Popkin 1979:12-13). However, with the introduction of new technological innovations as seed fertilizers, pesticides, and agricultural machinery, the agricultural sector became more capital-intensive and less labour intensive. Labour was now increasingly exchanged for machinery and local peasants were replaced by hired workers (Kerkvliet 1990:34-30; Rigg 2005a:192). This resulted in a redistribution of land. A small portion of rural dwellers now owned the largest part of the land and the 'traditional peasant' began to move away from the land. In some cases environmental degradation and decreasing incomes of farmers also forced farmers to look for alternative forms of work (Rigg 2005a: 185).

However, this is one side of the story. Another narrative tells about farmers who are able to continue farming due to the diversification of their livelihoods. Ellis(2000b:15) defines rural livelihood diversification as 'the process by which rural households construct an increasingly diverse portfolio of activities and assets in order to survive and to improve their standard of living'. In this definition the household is the unit of analysis and livelihood diversification points to the multiple livelihoods that coexist within a household. This could mean that in a rural family the husband works

solely on the family farm, his wife sells the crops on the market and their children send remittances back to home. In this example an *individual* does not necessarily has a diversified livelihood. As Ellis(2000b) notes: ‘an individual has a diversified livelihood where s/he has multiple jobs or incomes, but a household can have multiple livelihoods, even though each member is in fact specializing in one activity.’

Another important thing to note is that there are different reasons why households, or individuals for that matter, engage in livelihood diversification. A broad distinction can be made between thriving mechanisms and coping mechanisms (Start and Johnson 2004:10). Thriving mechanisms are usually associated with increasing opportunities, while coping mechanisms are associated with constraints, increasing risks and hazards. In the latter case livelihood diversification is not so much a choice as it is an enforced response to unanticipated changes. Ellis(2000b:294,297-298) speaks in this regard of coping behaviour. People proceed to coping behaviour after crises, when damage has been done and people diversify their livelihoods as a means to regain the losses they face (Ellis 2000b:297; Start and Johnson 2004:25,30). The likelihood that a household resorts to coping behaviour will depend on the vulnerability of a household to shocks and negative trends (Ellis 2000b:298; Start and Johnson 2004:28,31-32). This degree of vulnerability is determined by the relative livelihood security of a household. A livelihood is deemed secure when a household has sufficient access to resources and income earning activities to offset risks and meet unexpected costs (Ellis 2000b:298; Frankenberger and McCaston 1998:31). Besides coping behaviour, diversification can be used by rural people to spread out *anticipated* risks and to minimize possible losses. It is then used as a risk strategy (Ellis 2000b:294; Start and Johnson 2004:25).

One specific way for rural people to reduce income insecurity and enhance livelihood security is through non-farm diversification. This is not a new phenomenon (Ellis 2000a: ix). As Francks (2005) shows for industrializing Japan, farmers have been doing industrial work besides agricultural work as early as the 19th century. What is new is not rural livelihood diversification *an sich*, but the awareness of rural development scholars that people on the countryside in low-income countries oftentimes have a diversified livelihood and that this forms a major part of their income. In recent years, rural dwellers all over the world including South-East Asia have increasingly been engaged in non-agricultural work next to their agricultural work (Davis et. al.:2009; Rigg 2005b:175). This non-farm work takes up 40 to 60 per cent of the income of rural dwellers in developing countries, a significant amount (Davis et. al.:2009). The realization of the importance of non-farm work have led scholars to see peasants not just as farmers. It made them aware that it is better to analyze economic rural situations in terms of livelihoods instead of adopting a sectoral approach by focusing, for example, only on farming (Ellis 2000a:ix; Ellis 2000b:289-290; Rigg 2005b:174).

What is important to note is that a 'livelihood' is not just limited to income generating activities. Social institutions, social relations, material and immaterial assets also form part of an individual or household's livelihood (Carney 1998; Ellis 1998 in De Haas 2010). To give one example: remittances sent by migrated family members can be part of a household's livelihood portfolio. Families of migrated persons often expect that the migrants will send remittances back home. In this way labour migration can be seen as diversification of the household (De Haan 1999:13,29). Non-farm diversification at the place of origin is oftentimes combined with migration, which is basically diversification outside the place of origin (De Haas 2010:244-246).

1.3 Agriculture as part of rural livelihoods

In relation to rural livelihoods a distinction can be made between farming and non-farm work activities (Start and Johnson 2004:2). A peasant can be doing both, enabling peasants to continue farming while relying on additional sources of income gained by non-farm activities.² There is now a debate going on whether small-scale farming practices will remain part of rural livelihoods due to diversification or whether it will be replaced all together by non-farm livelihoods. At the one side are authors who argue that small peasant farms will continue to exist. Brookfield (2007; 2008:110), for example, points to the West, where to the present day the great majority of farms are still peasant farms. He reasons that scale-neutral technological improvements enables small-scale farms to coexist with large industrial farms (Brookfield 2008:117,120-121). Technological improvements, like labour-saving machinery, give farmers the opportunity to engage in non-farm activities and earn additional incomes. In this way small peasant families can continue farming (Francks 2005:471).

In contrast, other authors hold that the small peasant farm will lose ground to large scale farming enterprises and may eventually cease to exist (Rigg 2005b:179-181; Adams and Hobsbawm+ in Brookfield 2008:108). One version of this view is that there first will be a diversifying of livelihoods in which the place of farming will decrease over time. Diversification will then proceed to full occupational shifts to non-farm livelihoods. Rigg (2005b:180) argues that this will be the case. He sees two indicators for this. The first is that farms have increasingly been commercialized. He expects this will go on in the future with farms growing in size. He argues that an increasing portion of the rural people active in the agricultural sector will be making a living out of farming alone (Rigg 2005b:180). The second is that the people who are still engaged in small-scale farming today, at least in Asia, are for the most part elderly people, while young people are leaving the farm fields (Rigg 2005a:185; Viswanathan 2010:202). This is a result of decreasing opportunities to work in the

² Here, by *non-farm activities* we mean all those income generating activities (including income in-kind) that are not agricultural but located in rural areas. 'Agriculture' is here taken to mean all primary production of food (growing crops and rearing livestock) (Davis and Bezemer 2003: 5).

agricultural sector. Additionally, it seems that the status of farming has decreased (Rigg 2005b:178). Besides these push-factors, several pull factors can explain the gentrification of farming. Increasing opportunities through education and better mobility accompanied by disclosing media images has attracted rural youth to other forms of work (Brookfield 2008:118; Rigg 2005a:189-191; Viswanathan 2010:200-201). As Rigg (2005a:194) notes in the case for South-East Asia, youth are making conscious livelihood choices, of which life as a peasant is just one among many. In addition to this, parents also encourages their children to work outside the farming sector.

However, the decision to work outside the farming sector is a constrained choice. The range of opportunities for non-farm diversification depends on the availability and accessibility of non-farm work. This is differentiated by gender, ethnicity, social capital, financial capital, education and skills (De Haan and Zomers 2005:41; Davis 2003:11; Ellis 2000b:294-295; Start and Johnson 2004:9). In turn, individual and household access to non-farm activities depends on structural factors such as physical infrastructure, economic infrastructure and the presence of natural resources (Davis 2003:14). Mining, as a rural non-farm activity, will serve as an illuminating example of how the presence of natural resources and the nature of an economic infrastructure can influence the livelihoods of peasants. In the next section we will set out how at the one hand mining can affect the livelihoods of rural people and at the other hand how rural people can use mining in their advantage for their livelihoods.

1.4 Informal small-scale mining and international large-scale mining:

mining as part of rural livelihoods

One of the multiple forms of rural non-farm activity in developing countries is mining. A distinction can be made between small-scale mining and large-scale mining. Small-scale mining is characterized by 'low tech, labour-intensive activities with few barriers to entry' often in the informal sector of the market (Banchirigah and Hilson 2010:158; Hentschel et al. 2002:4). Large-scale mining, on the other hand, is more capital intensive, highly mechanized and operations are done by mining companies, mostly on a legal base (Chaloping-March 2006:201; Tujan and Guzman 2002:42).

Many developing countries, including the Philippines, have rewritten their mineral codes in recent years in order to attract more foreign investments (Banchirigah and Hilson 2010:172; Holden et al. 2011:142,145-146). Because mining companies see profits in expanding their mining operations, the number of foreign mining operations in developing countries has vastly increased in recent years (Hilson 2009:2). For local families and communities the coming of mining corporations often brings great changes in their way of life, mostly in a negative way. Holden and Jacobsen (2012) apply the term development aggression to large-scale mining projects. Development aggression can

be defined as the 'process of displacing people from their land and homes to make way for development schemes that are being imposed from above without consent or public debate' (Nadeau in Holden and Jacobsen 2012:221). This term is closely related to what Harvey calls accumulation by dispossession. This occurs 'when long standing indigenous modes of production [...] are replaced by new capitalist modes' (Holden et al. 2011:142). As capitalist countries are always in search for new sources of raw materials and new markets, they try to gain access to land. When operating on land of indigenous people this possesses risks for the peoples' traditional ways of making a living. Indeed, in many cases local people have come in conflict with mining companies because of (the threat of) land loss, displacement, loss of work, environmental damage and violence of mining security forces (Bury 2002; Hilson 2009:2; Holden et al. 2011:141-143).

Small-scale mining

Banchirigah and Hilson (2010) state that artisanal and small-scale mining has become an important topic in the literature of international development in general, but that as a non-farm activity, it has been particularly overlooked in the discourse of rural livelihood diversification. Nevertheless, some relevant insights has been gained.

The reasons why people engage in small-scale mining can be brought under two general explanations. One of these explanations is that people turn to mining in the hope to get rich quickly. In this view small-scale mining is seen as a 'rush-type industry'. This means that people are lured to mining in hopes to find rich deposits of valuable minerals to get a better income than they currently have (Banchirigah and Hilson 2010:160; Hilson 2009:3). However, according to this explanation, sometimes the chances of attaining riches are exaggerated and the risks involved in mining activities are downplayed (Heemskerk 2002:328).

The other explanation, the one that applies for most cases, is that people are turning to mining activities to make ends meet (Banchirigah and Hilson 2010:160). This view sees small-scale mining as poverty driven. Against the backdrop of de-agrarianisation people cannot earn money from agriculture all year long, they need to supplement their income by working in the mining industry (Banchirigah and Hilson 2010:161). The seasonality of agricultural work is one reason why people are temporarily turning to small-scale mining. For example, in rural Zimbabwe the selling of gold enables farmer to buy capital for the farm and in East-Sierra Leone small-scale farming has been complemented by mining since the 1970's (Maponga and Ngorima 2003; Maconachie and Binns 2007:375). However as Banchirigah and Hilson (2010:162) show for sub-Saharan Africa, whereas small-scale mining activities were initially seen as a result of diversification, being one part of a rural livelihoods, now mining has become the principal source of livelihood for the majority of these rural

dwellers. So here, a shift is taking place from small-scale mining as a diversified occupation to a full-time occupation (Banchirigah and Hilson 2010:161; Bryceson and Jønsson 2010:384; Hilson 2009:3).

Small-scale mining is often cited as an environment-friendly activity (CPA 2007:12). However, some small-scale miners also use toxic chemicals like mercury and cyanide (Heemskerk 2002:340).³ This can contaminate water and land used by local farmers, and can thus negatively affect the livelihood of farmers. This is why small-scale mining is not necessarily an 'effective weapon against rural poverty' as the United Nations has stated (United Nations in Heemskerk 2002:340). Other than environmental problems, small-scale mining can also be the cause for disputes between local people. Problems may arise if too many new miners and people from other places will come to a mining site. Land claims can become a cause for disputes and organizational problems of mining cooperatives can hinder mining operations (Hentschel et. al. 2003:27-29).

If one compares small-scale mining to large-scale mining, small-scale mining is more beneficial for local people, while large-scale mining is more harmful. Mining companies in their search for viable ore deposits may want to acquire land that is traditionally inhabited by indigenous people and if they do so, displacement may occur. If local people are engaged in small-scale mining, land claims by mining companies may cause them to be driven away from their small-scale mining activities or otherwise makes it harder for them to secure a mining site (Hilson 2009:2; Holden et. al. 2011:143). In addition, the job opportunities in mining companies are usually limited, so it does not provide much employment for local people. The availability of jobs in the mining sector are actually declining as new technologies, multi-skilled workers and team approaches are causing a decline in mine-workers (Dansereau 2006:3). On top of this, the mining sector is in search for flexible mine workers, people who are mobile, who are able to migrate and can be forced to sign a less stable, temporary contract. Even if local people are able to work as miners, they face difficulties because of low wages, poor working conditions and the inability of creating a labour union to stand up for their own rights (CPA 2011; Godoy 1985:205-207).

It is clear that, for rural dwellers, small-scale mining is preferred over large-scale mining. Even so, small-scale mining can have some negative environmental and social consequences and the economic advantages of small-scale mining to rural livelihoods are also far from clear. What is the exact role of small-scale mining in the livelihoods of rural people and how does it relate to farming? Why do the people in Kabayan turn *en masse* to small-scale mining, while it has been practiced for ages? To answer these questions, a brief historical context is given in the next chapter and new empirical data is presented in the following ones.

³ In Kabayan cyanide is being used. Mail correspondence with Lulu Gimenez from APIT tako, a branch organization of the Cordillera Peoples Alliance (CPA).

2 Context

The Cordillera region, Northern Luzon: agriculture and mining as livelihoods

When you think about the Philippines, it is likely that the first thing that comes to mind are a group of islands with white beaches and palm trees and the clear blue sea with typical looking boats. It is true that the Philippines consist of more than 7100 islands of different sizes and with different climates. However, while staying in the Cordilleran mountains of Luzon, the biggest island of the country, you will not really notice that you are on an tropical island. Typhoons, landslides, floods and heavy rain occur regularly, especially in the rainy season, and higher up in the mountains temperature can drop to freezing point. While the culture is very diverse, with influences of different countries, in particular of the former colonizers Spain (1521-1898) and America (1898-1946) (Resurreccion 1999:6), the friendliness and hospitality of the people can be found all around.

The research area for this thesis is located in the Cordillera Administrative Region (CAR), Northern Luzon, a very diversified ethno-linguistic region in the Philippines. This region is divided in six different provinces, with Baguio City as the regional center. The province where the research has been carried out is Benguet. It is a second class province on the income classification scale, with an annual income of 360 million pesos or more, but less than 450 million pesos (NSCB 2008).⁴ The province consists of 13 municipalities and 140 *barangays* (Provincial Summary, September 2012). The capital of Benguet is La Trinidad, which forms an important industrial center and trading post for vegetables. Benguet is located about 1524 meters above sea level and it is known for its upland vegetable production, the reason why it is nicknamed 'the salad bowl of the Philippines' (NSCB 2012; Lu 2010:73). Everywhere you go it is likely to see trucks loaded with vegetables, like carrots, cabbage and cauliflowers, stacked neatly into the smallest corners. These trucks, with country music blaring through the windows, are on their way to the trading posts.⁵ Benguet is also the province where large-scale mining is concentrated in the CAR, with the presence of Lepanto Consolidated Mining Company, Benguet Corporation and the Philex Mining Corporation (see map 4). Mining and tourism are gaining importance as sources of income, but agriculture is still the dominating livelihood.⁶

The municipality of Kabayan in Benguet is the place where the research has been conducted. This municipality is known for some tourist attractions, like the old mummy caves scattered all over the area, and Mount Pulag, the third highest mountain of the Philippines. Kabayan is a fourth class municipality of Benguet on the income classification scale, which means that the average annual

⁴ There are six classes, which means that Benguet has quite a high income compared to other provinces in the Philippines, namely between 6,546,907.82 and 8,183,634.78 Euro (according the currency value on June 4, 2013).

⁵ Observed during the research, country music is the favorite music of many people in Kabayan, probably an influence from the American colonization.

⁶ NSCB 2012: http://www.nscb.gov.ph/rucar/fnf_benguet.htm, visited between May and June 2013.

income is 25 million pesos or more, but less than 35 million pesos (NSCB 2008).^{7 8} It is one of the poorest municipalities according to NSCB. Agriculture is their main industry, with the production of the famous Kintoman rice, cauliflower and coffee (DOLE 2013).

Every municipality consists of different *barangays*. A *barangay* is the smallest political-administrative unit in the Philippines (Carpenter 2005:433). *Barangays* are led by a *barangay* captain and the *barangay* officials (seven officials for each *barangay*).⁹ *Barangays* are further subdivided in *sitios*, which is a kind of district or neighborhood, a cluster of houses. Some *sitios* of *barangays* consist only of a few houses and these *sitios* may be located far from each other. Some of them are only accessible by a narrow mountain trail, crossing different hanging bridges. In the *barangays* of Kabayan, the least populated *barangay* is Anchokey with about 300 inhabitants, while Ballay, with its 2600 people, is the most populated *barangay* (NSCB 2008). The *barangays* we studied in Kabayan are Gusaran, Adaoay, Bashoy and Eddet. These *barangays* have respectively 1330, 670, 1597 and 740 inhabitants (NSCB 2010).

In the Cordillera region there are more than one million indigenous peoples belonging to at least eight distinct ethnic groups, collectively known as Igorots (CPA 2007:2).¹⁰ In the province of Benguet, the main tribes are the Ibaloi and the Kankanaey (Tujan and Guzman 2002:154). Little is written about the Benguet Igorot (Keesing 1962:51; Wiber 1993:4-5). Wiber (1993:4) even claims that 'the Benguet Igorot are the least studied of the minority groups of the Cordillera Central'. In the municipality of Kabayan the majority of the people are Ibaloi, although in the eastern part of the municipality some Kalanguya intermingle with Ibaloi.¹¹

The Ibaloi have practiced different occupations over time, but all are related to agriculture, mining and trade. The relationships between these practices have changed over time and with this also the mutual relations of the Ibaloi (Wiber 1993). The Ibaloi had developed a stratified society as early as in the eighteenth century, without any influence of Western nations (Lewis 1992; Wiber 1993). With the arrival of the Americans at the beginning of the twentieth century social stratification weakened and labour patterns changed due to the incorporation of Benguet into the global economy (Lewis 1992:235; Wiber 1993:37). Native mines were appropriated by Americans, slavery was abolished and vegetable farms of locals were now increasingly connected to the national

⁷ Informal conversation with Richard Murro, March 26, 2013 and confirmed at the site of NSCB: http://www.nscb.gov.ph/rucar/fnf_bngt_kbyn.htm, visited between May and June 2013

⁸ There are six classes and Kabayan, as a fourth class municipality has an average annual income between 454,263.32 and 635,968.65 Euro (according the currency value on June 4, 2013)

⁹ Observed during our research, for example during the meeting in the Barangay Hall of Bashoy on February 15

¹⁰ Igorot literally means 'people from the mountains' (Scott 1975).

¹¹ Mail correspondence with Lulu Gimenez from APIT tako, a branch organization of the CPA.

market as well as the international market (Lewis 1992:96,235; Wiber 1993:37).

The integration of vegetable farming in the market has a varied impact on the organization of labour in and around the area of Benguet, reflecting local peculiarities. Villages have reacted in different ways. On the one hand in the village of Buguias, about only twenty five kilometers from Kabayan, villagers have 'embraced' the vegetable market (Lewis 1992:235). On the other hand, villages in the neighboring province of Ifugao have been engaged in the market, but in their own terms (Vos 1983 in Lewis 1992:235). Here traditional reciprocal labour agreements have continued while market production and capitalism have only entered partially (Sajor 2000:5-7). In Kabayan vegetable farming for the market had been abandoned altogether in the 1980s when the residents were faced with low yields of their cash crops (Lewis 1992:237). The residents reverted to full-time subsistence farming. Nowadays they are again engaged in commercial vegetable farming.¹² This shows that diversification is not necessarily a linear process.

Small-scale mining is also an important part of the livelihood of Kabayan families. In the 1990s Kabayan households engaged in commercial vegetable farming had at least one family member who was active in gold mining. Almost half of the households were engaged in gold panning and a large number of families were fully or partly dependent on small-scale gold mining to cover maintenance (Wiber 1993:45,75). Caballero (2006) found out that the Kankanaey in Itogon in Benguet relied primarily on small-scale mining of gold for their livelihood. In the year 2004, about ten thousand small-scale miners were active in Benguet (Clemente et al. 2004:161).

Although the use of gold has changed over time the ways in which gold is obtained through small-scale mining has remarkably stayed the same over the years (Caballero 2006:160).¹³ However, in Kabayan changes are now taking place in relation to the mining practices. The chemical substance cyanide is now used in the processing of gold ores and this may affect land and water used by farmers. Another change, which is related to the use of cyanide, is that seemingly more people are engaged in small-scale mining than before.¹⁴

A major change in the mining landscape as a whole has also occurred, namely the expansion of large-scale mining companies in the Philippines. Whereas in 2008 small-scale mining was more prominent than large-scale mining, the next three years saw a tripling of the production value of large-scale mining while the size of small-scale mining remained more or less the same.¹⁵ In

¹² Mail correspondence with Lulu Gimenez from APIT tako, a branch organization of the CPA.

¹³ In the course of time gold obtained by small-scale mining has been used for many different purposes. It has served as crafting material for jewelry, marking wealth and status, it played a specific role in rituals and it was locally used as a medium of exchange in the buying of slaves and for paying off crimes. It also served as a medium of exchange when trading with the Chinese and Spaniards (Caballero in Lahiri-Dutt and Macintyre, 2006: 146).

¹⁴ Mail correspondence with Lulu Gimenez from APIT tako, a branch organization of the CPA

¹⁵ Mines and Geosciences Bureau, 2013: <http://www.mgb.gov.ph/Files/Statistics/MineralIndustryStatistics.pdf>

neighboring municipalities of Kabayan large-scale mining companies have already settled. The effect of the presence of large-scale mining companies on small-scale miners can be twofold. First, legal claims of formal large-scale mines can dispossess small-scale miners from their mines. Secondly, agreements between large-scale mining corporations and small-scale miners can be made, preserving the small-scale activities of local villagers. This is a development of recent years (Hentschel et al. 2002:56). In Acupan, Benguet, a partnership of Benguet Corporation with the local small-scale miners is established and is seen as a fruitful relationship for both parties (Chaloping-March 2006:202).

In brief, for the residents of Kabayan both mining and farming have been part of their traditional livelihoods. It has been proven that commercial vegetable farming can co-exist with subsistence farming and small-scale gold mining. Currently, an intensification of small-scale gold mining is taking place, without any presence of a large-scale mining company. The increase of small-scale mining activities will be explained by the research findings presented in the next chapters. The implications of the mining activities for the livelihoods of the residents of Kabayan will also be set out.

3 Livelihoods in Kabayan

3.1 Farming

In this chapter an overview will be given of the different livelihood activities present in Kabayan, with a focus on farming and mining, because these form the largest part of the livelihoods of the residents. In order to have a complete overview we will also introduce other livelihoods. The outline given here is crucial to understand the different livelihood strategies in the next chapter.

In all the *barangays* studied, most of the people are still dependent on the work of farming. This is vegetable as well as rice farming. While traveling through Kabayan one can see a mosaic of different forms of land use, with terraces for cultivating rice and vegetables. Rice ponds, when already irrigated, look like mirrors and vegetable fields catch the eye with their different colors. Sprinklers, called rainbirds, spraying water on the fields are creating rainbows. Vegetables which are produced are, among others, carrots, cabbage, beans, peas, pepper, broccoli and cauliflower. However, cauliflower is one of the main crops and is produced in large quantities, at least in the time of the research (February-April 2013). The kind of vegetables that are being cultivated depends on the type of soil and the altitude. For example, in Bashoy, which is situated on a higher altitude than Eddet and Adaoay, people are producing potatoes, because of the colder temperature and the sandy soil. The people follow a multi-cropping pattern. This means that they will be alternating between different vegetables during the year. Mostly this is between two or three different kinds of vegetables, sometimes this is between rice and vegetables.

Rice (*palay*) is a staple crop which was produced in large quantities before, but this is reduced to a minimal level due to several reasons. Today, rice is produced in such a small quantity that it is not enough for yearlong consumption. Vegetable production has replaced most of the rice cultivation now and it is preferred because of the money that can be earned by selling the crops. Another reason why the production of rice has been dwindled is the lack of water. Whether or not the shift to commercial farming takes place, and to which extent, depends on several factors. Like climate, topography and accessibility by a road. In poor accessible areas it is likely that commercial vegetable farming remains a sideline activity (Lewis 1992:33). Some of the changes are mentioned by Aileen Bakekang, a farmer and in times of bankruptcy also a miner: "before there were only rice fields, no vegetables. But now there's not enough rice, and overproduction of vegetables. First vegetables were free, but now, because of the use of chemicals, they are not free anymore. Now most vegetables go to the market, before only a few. The rice is not enough for income, only a little, for own use. People sell vegetables, and bring back rice".¹⁶

If they do not have capital, some farmers will plant rice, because for planting rice less capital is needed. For rice you need to pay the person who is plowing (if that is not the farmer himself), and the irrigation needs to be controlled. But less (or no) fertilizers and chemicals are needed compared to vegetable farming. The disadvantage is that if you only have a small field, you only produce a little rice. All

¹⁶ Semi-structured interview with Aileen Bakekang, a farmer and small-scale miner, February 28, 2013

the rice produced in Adaoay, Bashoy and Eddet is for own consumption, because the harvest is too small to bring it to the market. It is even too small for providing rice for the family for one year, they need to supplement by buying rice. Besides, in Adaoay and other places in Kabayan, cultivating rice is also not continuous, because of the lack of water during the dry season.¹⁷

Despite the diversification of livelihood, the main source of income in Kabayan is farming. The importance of farming is also stated by one of my informants: “farming is the backbone of the nation.” By which she continued saying that farmers are providing the food which is the most important in the life of a human being.¹⁸ In Kabayan both gardening and farming are terms used to define someone’s livelihood. Farming is a broader term referring to cultivating rice as well as raising animals and planting fruits, whereas gardening is used for cultivating vegetables.¹⁹ Farming is continued for many years, although there is a shift from subsistence farming to cash crop production for the market (Lewis 1992:33). This shift mainly occurred after the arrival of Chinese and Japanese labourers who brought new knowledge and technologies and the American colonizers who caused a higher demand for temperate produce (Lewis 1992:32).

The diversification of livelihoods takes place mostly because the farmers cannot get enough income from farming alone, because of the currently (very) low prices of vegetables. Like in mining, there are also suppliers in farming, who provide everything the farmers need: from fertilizer, pesticides and insecticides to sprinklers. Some can pay back the interest, but not the original amount of money, so they have continuous debts. Others are able to pay back what they borrowed, but have no money left for food and other things, so they need to borrow again. Most people live in a vicious circle of debts and credits, from which it is difficult to escape. Only if the crops you produce are expensive, then it is possible to earn a good income. But because the prices of vegetables are not stable, you never know what the price will be when you arrive at the trading post.

Vegetables are brought to the trading posts in Nueva Vizcaya or in La Trinidad, although this is not always the case. Sometimes prices are so low that the price of the fare is higher than the price one gets from selling the crops. If so, farmers just leave the vegetables along the road or do not even harvest them and let them rot on the land, then at least they serve as fertilizer.²⁰ The difficulty for the farmers is that they have to work very hard, but never know how much they will earn. Prices fluctuate every hour. Some might already have finished harvesting and sold it for a low(er) price, while others will harvest all at the same time and bring it to the market all at the same time, which result in oversupply and a low price again. Like mining, farming too is called a kind of gambling by one of the informants, you never know when and how much money you will earn: “With credit, one will always go back to zero. They [farmers] also need to give

¹⁷ Observed during working on the rice fields and talking with some of the women planting rice, March 26, 2013

¹⁸ Semi-structured interview with Aileen Bakekang, a farmer and small-scale miner, February 28, 2013

¹⁹ Semi-structured interview with Geraldine Lingyan, February 26, 2013; Informal conversation with Joan Baltar, March 8, 2013; semi-structured interview with Marites Gatan, March 12, 2013. In this thesis we will use the term farming, because it is more frequently used during our research and it is an all-embracing term

²⁰ Observed in different places in Kabayan, heard from informants (informal conversation with Mary Jane Tubo, March 28, 2013) and read in different (news)articles (Ramo, 2005)

the wage to the helpers, which can cause bankruptcy and no money for fertilizer. One will go back to zero again. The life of a farmer is like wheels, it goes up and down, sometimes they can taste milk, sometimes there is no sugar.”²¹

Vegetable farming as a livelihood is an insecure livelihood, like with mining which we will see in the next part of this chapter. The prices of vegetables are very volatile and there is a reasonable chance that one will experience bankruptcy. This makes it difficult for farmers to cope with risks and unexpected costs and to provide a livelihood for now and in the future, and for the next generation. Only when those requirements are met, a livelihood is considered to be secure or sustainable (Chambers 1989 in Frankenberger and McCaston 1998:31). However, other livelihood options in the *barangay* are few and most people stick with farming. For those who can go mining, this is usually an attractive alternative, although the income one can get from mining is also uncertain. “After the construction of roads, after World War II, vegetable production has increased, because it became possible to bring them to the market. First there was much more rice and *camote* (sweet potato) production. Most people now combine mining and farming, because if the price of vegetables is too low, some will go mining.”²²

The low price of vegetables, which is mentioned in the statement above, is a result of different developments. First, there is the law of supply and demand. If the demand is high and the supply low, the prices will be high. But if it is the other way around, prices will be low. Often this is the case in the Philippines. The province of Benguet is known as the main producer of vegetables, but now also other provinces, mainly in the lowlands are producing vegetables. In the lowlands the use of machines (instead of the *carabao*, a water buffalo) is more common, which makes it more difficult for the farmers of Benguet to compete with them. The lowland areas are also closer to Manila, which makes it easier to sell their vegetables over there. Zoning is called for as a solution to the overproduction, so for example, one municipality will focus on the production of cauliflowers, one on the production of potatoes and one on the production of carrots and beans. But still farmers produce what they want (vegetables with a relative higher price), so zoning is not very effective.²³

Also difficult for the farmers are the fast changing, fluctuating prices, which are dictated by the middlemen. The middlemen buy the vegetables from the farmers at trading posts, and bring the vegetables to Manila where they can sell them for a much higher price. This is also due to the surplus of vegetables which are offered in the trading posts. Thus, the middlemen are the ones who get most of the money out of the crops, while the farmers remain poor, which is seen as unfair by the farmers, because they are the one who do the hard work on the land.²⁴ “The majority of the farmers are supplied by the middlemen, they

²¹ Informal conversation with Joan Baltar, April 6, 2013

²² Informal conversation with Ryan Limbaco, farmer and former small-scale miner, March 3, 2013

²³ One explanation that was given why most of the farmers were growing carrots in Adereg, was that the previous crop, cauliflower was destroyed due to bad weather and because carrots is an easy crop to grow, people decided to plant carrots

²⁴ Open interview with Jayson Mendoza, March 16, 2013; Informal conversation with Richard Murro, March 26, 2013; Informal conversation with Mary Jany Tubo, March 28, 2013; Open interview with Arnel Abrigar, April 1, 2013

dictate the price. The government cannot do anything about it. It is an agreement between the farmers and the middlemen. No law or policy is possible to change that. They can only try to eliminate the middlemen, for example by farmers cooperations, but that is difficult because of the lack of trust and corruption. Everybody wants to get a big share.”²⁵ Farmers and middlemen, however, are dependent on each other and their relationship can be described as a patron-client relationship (Margold 1989:42).

Another point causing the low price of vegetables is the imports and smuggling of vegetables from countries like China, Singapore and Taiwan. This is reported in different articles in the newspapers and is a problem for farmers of Kabayan and other municipalities of Benguet.²⁶ It is hard for them to compete with imports from countries where large-scale farmers use big machines, which are not suitable for the cultivation in Kabayan, where the vegetables are cultivated manually. This is because of the small, steep fields where it is difficult for machines to enter.

A third point relating to the low prices of vegetables, is the entering of the Philippines in the AFTA, the Asian Free Trade Agreement, by 2015. This will result in more imports from countries like China and Taiwan, and more competition for the farmers in Kabayan. More, instead of less products will be imported, resulting in probably lower prices for products from local farmers. When entering the world market it is probable that more resources will go to the rich countries, and leaves the Philippines behind. This is in line with the dependency theory, which states that developed countries are making developing countries dependent on loans which they are providing, while at the same time they extract resources from these poorer countries.

Beside a low income farmers also face other problems like soil erosion, caused by deforestation and fires and aggregated by earthquakes, which possibly results in landslides. And not only the prices of vegetables are volatile and unpredictable, but also the weather. This is, according to many informants, due to the climate change.²⁷ Rain nowadays is not only falling during the rainy season, but heavy rainfall is also possible during the dry season. Heavy rainfall, or even hail, may destroy the flowers of vegetable plants. Beside the rainfall, also the temperature is affected by the climate change. Farmers have noticed that it is becoming warmer during summer and colder during winter. This makes the lack of water a bigger problem.

Because of the opening of borders and the entrance to the world-market, and the shift from subsistence farming to commercial farming, small-scale farmers will become more dependent on factors influenced from the outside. Farmers are becoming more dependent on loans from suppliers, but the country as a whole will also become more dependent on loans from the World Bank and the IMF. In the debate between Brookfield (2008) and Rigg (2005b), whether small-scale farming will remain, Rigg seems right what concerns young people leaving the farm (due to education and better mobility) and the continuing commercializing of farms, at least when considering Adaoay. “The young people don't tolerate

²⁵ Informal conversation with Arnel Abragar, April 1, 2013

²⁶ Open interview with Jayson Mendora, March 16, 2013 and an informal conversation with Roy Andrada, March 5, 2013. For newsarticles see Ramo 2005 and Olea 2008

²⁷ Informal conversation with Mary Jane Tubo, March 7, 2013; informal conversation with Joan Baltar, March 25, 2013

to work under the sun, they don't know how to farm. The young prefer to live in the cities.”²⁸ However, in Bashoy and Adereg there are still many young people working as farmers. Whether de-agrarianisation, like Bryceson (2002) puts it, will take place in Kabayan seems unlikely, because of the large percentage of inhabitants which has farming as their main livelihood.

In brief, like stated above, farming is still the main livelihood in Kabayan, but people are facing environmental, social and economic changes, among others deforestation, the shift from rice to commercial vegetable production and the opening of the borders and entering the world-market. Hereby, it is necessary for them to adapt in order to sustain in daily life. One of the alternative livelihoods people turn to is mining, which we will be the subject of the next part of this chapter.

3.2 Mining

Three different types of small-scale mining can be observed in Kabayan, namely tunneling, gold panning and open-pit mining. Of the three types, tunneling is the largest in scale.²⁹ Tunneling has been practiced for more than 40 years, although with some intermittences. Heavy earthquakes have rocked Kabayan in 1985 and 1990 and caused the miners to stop their operations for a few years.³⁰ Over the years, mining activity has declined gradually due to diminishing gold ores. However, in recent years, new mining technologies on the one hand and low returns of gardening on the other hand, have spurred a boost in small-scale mining activities. The new technology, of which the *ball mill* and the use of cyanide is the most prominent, has come from nearby places where large-scale mining companies are located and where mining is much more rooted.³¹ In Kabayan, mining is practiced in only three of the thirteen *barangays*. The main site is called Tibaran and about 80 tunnels and mining camps are located here (see map 6). The miners are mostly residents from the nearest *sitios* of barangays Gusaran and Poblacion. If they are not from these barangays they are usually relatives of people who are.

Miners in Kabayan are self-employed, self-sufficient and self-reliant. Small-scale mining is a local industry with little aid of the government and no interference of companies. Usually, one of the members of a mining group is a supplier, providing the food for the group and purchasing the needed materials. The organization of the work is done by the miners themselves. The gravel road from Adereg going up to the Tibaran has been constructed by the residents of Adereg, the *sitio* nearest to Tibaran, in 2010.³² One man from Adereg had asked the municipal council to construct a road. The council replied by giving the residents the money to construct the road. Before this road was constructed, the miners had to carry the heavy sacks of gold ore bearing rocks, locally called *naba*, on their shoulders almost all the way to the processing site.

²⁸ Informal conversation with Mary Jane Tubo, one of the rice planters, March 26, 2013 . Almost no young people are involved in the planting of rice.

²⁹ From now on when we speak of ‘mining’ in the text, this refers to tunneling.

³⁰ Semi-structured interview of barangays officials, Saturday, February 15.

³¹ Mainly the municipality of Itogon.

³² Information received out of a conversation with David at his house on Thursday, February 21.

Nowadays this is mainly done by trucks via the road.

The mining itself is done by using traditional methods as well as new methods. The digging is done manually in narrow tunnels. To support the tunnel, timber of pine trees is put inside the tunnel, this prevents soil and rocks from falling down.³³ The miners get the ores, locally called *naba*, by using simple tools like shovels, crow bars and pick axes. In contrast, the processing of the *naba* to recover the gold is done by using new technology. The crushing of the *naba* is done by a rod mill, locally called *boor mill* or ball mill. The rod mill runs on electricity and is driven by a motor. The milling of the *naba* is being done so that the cyanide can get more gold from the soil (see figure 2 for a schematic overview of the whole mining process). Cyanide is being used by the miners to obtain the fine gold particles. Without the use of cyanide one can only get the high-grade *free gold*: the bigger, high carat gold parts that can be obtained by gravity separation. Yet, the gold in Kabayan is mostly low-grade *water gold* or dust gold, so the people will need to use cyanide to obtain the gold.³⁴

Because the miners use chemicals (cyanide) and machines (rod mills) their mining is not considered as *small-scale* mining by law and the miners cannot form a small-scale mining organization. Therefore it is not possible to acquire a permit for the mining activities and the mining is considered illegal. The governor of the province of Benguet has declared a cease and desist order for the 'small-scale' mining operations. The miners have also faced protests of local residents. At the time of the fieldwork, there were protests in the *sitio* of Kusaran. In the *sitio* of Kusaran, mining has started in 2011, and on April 2013 seven tunnels were located there. Mining is being protested here, because the mining site is located near the houses. It is also near some vegetable gardens and near the creek flowing to other gardens. Some residents fear that the mining may cause landslides, with the soil going to the houses and gardens.

Despite the illegality and in spite of these protests, mining operations still continue and new tunnels are being opened. The protests in Kusaran are waning as the people are accepting the mining operations under the following conditions: that safety measures will be taken, that mining will be held within limits and that miners will be accountable for any damage done by the mining operations.³⁵ The municipal mayor also agreed on this and the municipal council does not enforce the cease and desist order issued by the provincial government. In addition, members of barangays councils also join the mining operations .

So what are the exact reasons of people to be engaged in small-scale mining despite its illegality? First, it should be made clear that what is happening in Tibaran is not a gold-rush phenomena. With one single exception, all the people are aware that the gold is very small and that one really needs to be lucky to find a good sample of gold.³⁶ Mining is mostly seen as an alternative to farming. Almost all miners were

³³ The timber used is logged and lumbered by the miners themselves, either using a cutter or a chain saw. Mostly, the timber that is being used is logged illegally. (Conversation with David at home, Thursday, February 21)

³⁴ As told in interviews, e.g. informal interview Saturday, February 23 with Red, White and Yellow, and witnessed by observation.

³⁵ Information obtained by attending and recording the meeting (Sunday, March 24)

³⁶ Only one of the miners I talked to said he started mining, because he had heard good stories about the mountain, that it contained good ore samples. However, by his own experience he has found out that this is not necessarily

once gardeners or are still having gardens they tend to. As one of the residents of Adereg, mentioned: “Most of the small-scale miners are farmers, so they are not full-time miners. The day-to-day consumption increases: children will go to school. There is not much money to support the family. The costs of inputs used for the farm increases. In the dry season, the prices of vegetables are low, and people cannot even meet the demand, the inputs, for the farms... especially when paying tuition fee for college of a child. Because of price fluctuations and high costs of inputs for farming, people are looking for other livelihoods to augment their income. Some will turn to small-scale mining, even if they know how dangerous it is.”³⁷ The factors this resident mentioned: too high costs of farm input, price fluctuations and too low prices of vegetables, are the main reasons of the people of Kabayan to start mining.

The problem the people experience with farming is twofold. First, when faced with low prices, they may not get enough income to cover the expenses of the capital they have used in farming. Then they will have to find ways to get additional money to cover these expenses and for the daily needs like food. Secondly, in order to *continue* farming the people need to have capital for another season of farming. They need to have money to buy the seeds, fertilizer and pesticides, (and possibly herbicides, insecticides and fungicides) in order to be able to farm for another season. One way to cope with a lack of finance is to have a supplier and by borrowing money as stated earlier in this chapter. However, with consecutive disappointing harvests, turning to a supplier and borrowing money are not suitable ways to save money. Having a supplier means you have to divide the share of the harvest, borrowing money means you will have a debt. Mining, for many people, is an attractive alternative, because one does not need as much starting capital as in farming. As one miner, who stopped farming in 2011, explained: “I stopped farming, because I did not have capital anymore for the input necessary for farming. You need big capital to start farming. You need money for chicken dung, fertilizer, fungicide, herbicide, insecticide and labour. You need all of this, and the prices of vegetables are not stable, sometimes being as low as two pesos [per kilogram]. The income does not balance the necessities. For mining you do not need much capital and you are not dependent on the weather. You are not dependent on the weather, because if you have the *naba* already it will not go away. The capital needed for mining is little compared to farming.”³⁸

Here, besides the low capital needed to start mining, another reason for people to go mining is given, namely independency on weather conditions. During the dry season several farmers experience lack of water and irrigation, therefore mining forms a viable alternative to farming practices. In contrast, during the rainy season, water is abundant so farming becomes possible again. Many farmers choose to return to farming then, as it is seen dangerous to work in the tunnels during heavy rainfall.³⁹

true. Together with his companions he has been working in one tunnel for two years without any gold production. (Thursday, March 21, at mining camp)

³⁷ Fragment from an informal interview. The input for the farm the man talks about are: “fertilizers and pesticides, they mostly come from foreign countries, about 90%. These countries are Korea, Vietnam and China.” (Sunday, February 10, at house in Adereg)

³⁸ Informal interview with Hector at construction of leach pad. (Monday, February 25)

³⁹ Almost all miners in Adereg will turn to farming again when rainy season starts.

In the next chapter we will look closer at the role of mining in the livelihood strategies of the people in Kabayan, for now it will suffice to know that diversifying into mining can be seen both as coping behaviour and as a risk strategy, as defined by Ellis (2000a). It is coping behaviour because some people will start mining as a way to regain the losses they have faced due to a bad harvest and they do not have the capital to prepare for the next season. It can also be a risk strategy. Aware of the income risks in farming, due to price fluctuations and bad weather, people will turn to mining, either as a full alternative or as a complementary activity to farming.

Be that as it may, the financial gains of mining is not that much different from that of farming. Even though one does not have to invest much capital in mining, the income one will get is still uncertain, just like in farming. As obvious as it sounds, one first needs to find some gold, before one can get an income. It can take months, or even a few years before one finds some viable ore.⁴⁰ In farming you will usually have a good harvest, but you may experience very low prices. In mining you will have high prices, but you do not always have a harvest. If you have found some gold ores however, you can harvest for more than one time and you are sure to have some income.⁴¹ The income one gets from mining can be high if a rich gold vein has been found. Usually this is not the case and most of the time miners say that the income they get from mining is 'at least'. Meaning to say that it is not much, but that at least they have got an income to buy food with and to send their children to high school. The financiers, or suppliers, can get a higher income as one part of the share of each subgroup will go to them.⁴² They may be able to purchase a car if a good gold vein has been found.

In short, low and uncertain returns in gardening mainly due to cheaply sold crops to middlemen make people look for alternative ways to get money. The usual way people start mining is not so much on their own decision, but when they get asked by relatives and sometimes by friends who are already mining. Just like farming, mining is considered hard work. And just like farming the income one gets from mining is uncertain and unstable. However in mining, usually there is at least some income. Protests of farmers against small-scale mining operations is not really an issue in Kabayan as the people understand the need of small-scale mining as an alternative source of income to gardening. Because one does not need much capital, it is a logical thing for many farmers to do as a complementary activity to farming or as an alternative to farming.

3.3 Other livelihoods

In order to complement the overview of livelihoods, other livelihoods, beside farming and mining, will be briefly touched upon in this part of the chapter. Some new livelihoods seem to be emerging next to the

⁴⁰ Informal interview at mining camp Thursday, March 21. Semi-structured interview with Tonio at his mining camp, Tuesday, April 2. Semi-structured interview with Rafael at his tunnel, Tuesday, April 2.

⁴¹ Semi-structured interview with Tonio (Tuesday, April 2).

⁴² A mining group consist of a group of miners mining in one tunnel. Inside the tunnel there are sideways. The group is split in several subgroups, each subgroup, usually two to three men, will be mining in one sideway.

existing ones. According to Preston (1998:382) rural life does not necessarily place farming in a primary position. Instead farming becomes less important and new opportunities for making a living arise. It makes more sense to analyze economic rural situations in terms of livelihoods instead of adopting a sectoral approach by focusing only on farming (Ellis 2000 and Rigg 2005). The livelihood portfolio in Kabayan is very diverse. As said, people are active in farming and mining, but some people also have piglets, fisheries and bees and some people are drivers, porters, tourist guides, midwives, teachers or nurses. Besides, most of the people are combining two or more livelihoods. Usually one is not only a farmer or a miner: people have different sources of income at the same time. The most obvious combination is that of agriculture with mining. Because of the unstable and often low income for farmers they will be looking for other possible sources of income.

Some people try to gain additional income with *pol dia* work, or *por dia*, Spanish for 'for a day'. This work is often associated with gardening or construction, but it can be anything ranging from selling foods on special occasions or carrying sacks of ores at the mining site. The carrying of the sacks can be done by day labourers on a regular basis. Normally, however, *por dia* is just for a few days only and is not considered as fixed employment. Besides sidelines and *por dia* work there is another category in which people get some money. This is not really work as people use their material assets to earn additional money. If people own a lorry or a van they will sometimes hire this to other people for use. This is also the case with a ball mill. If one owns a ball mill, one will hire it to some other miners when it is not used by himself. Land can also be put for lease-lend.⁴³

Examples of other livelihoods than farming and mining are being a teacher, a nurse, a weaver, a doctor, a salesman, a government official or a religious leader. The latter distinguishes itself in the sense that less or no money is involved. That the earnings of being a priest or pastor is not that big, is not that important for these religious leaders. Christianity, and religion in general, plays a big role in daily life. They feel privileged to serve in the name of Jesus and to be able to help and work with people. They see their work in church as a sacrifice, as a work of dedication, which is important for community building. Most of them do not have a monthly income but are dependent on gifts (money or goods). Like one of them said, "it is not about money, but it is about faith".⁴⁴

Besides religious leaders who are not necessarily earning money with their job, there are professionals, who try to earn (additional) money. It seems that people are more aware now of the importance of education, which will be further elucidated in the next chapter, in order to have the possibility to find a job as professional, outside mining and farming.⁴⁵ Even though they studied very hard and finished their course with good grades, it might be very difficult for them to find a job. In Kabayan there are limited jobs for professionals and this is one of the reasons why many professionals seek work in cities

⁴³ This information on renting is gotten through interviews and observations throughout the research.

⁴⁴ Quotation from informal interview with Joan Baltar, March 8, 2013.

⁴⁵ With professional we mean everyone who finished a study, with or without passing the board exam, like teachers, doctors and nurses. Open interview with Joan Baltar, *date*

or even abroad (see next chapter, part migration). Although, the last option is not available for everyone, because you need some capital to bring with you. Another reason, besides the limitedness of the jobs, is the lower pay sometimes in rural regions like Kabayan and the Philippines in general, compared to other countries. A lot of doctors also study nursing in order to have the possibility to go abroad and work as a nurse, because as a doctor they are often not qualified to work in other countries.⁴⁶ Even as a nurse most of the time they are higher paid as the doctors in the Philippines. One informant mentioned someone who studied to become a teacher, but never worked as a teacher. She went abroad to Taiwan as a domestic worker.⁴⁷ The following quote highlights the difficulty in getting a job and gives marrying and having babies at early age as one of the reasons. "There are lots of graduates, but many of them have no job, because they get babies very soon. That's how Filipinos become poor. They get babies very soon. History repeats itself. Being poor is our inspiration, inspiration to go studying, to get a job and to get elevated in life."⁴⁸

Another form of income in Kabayan is tourism. Important tourist destinations are the mummy caves, the four lakes and Mount Pulag. For those attractions tourist guides, porters and park managers are appointed. People also try to earn money with the selling of souvenirs like mugs with a picture of Mount Pulag, T-shirts with Kabayan and traditional weaving. Especially people from Bashoy and Eddet, the *barangays* which are located on the route to Mount Pulag are able to work in the tourist sector, most of them combining the (seasonal) work with farming. The local government is trying to expand the tourist sector, for example by improving the roads or the establishment of a hotel in Kabayan Central (Poblacion). This is done in order to create employment and to earn money. For now, tourism is especially based on the aforementioned attractions. The more distant *barangays* are not really profiting from the tourists, most of whom are leaving the municipality after visiting one of the tourist attractions. Before, tourists were coming mostly from the Philippines or nearby countries and they were only visiting during the summer period, so the work in the tourist sector was seasonal. Now, tourists from other countries and continents are also visiting Kabayan, outside the summer period as well. There are tourists whole year round.

Besides those aforementioned jobs, people also have different kinds of animals walking in and around their houses for providing food and additional money where necessary. Examples of animals are cats, dogs, sheep, cows, *carabaos* (water buffalo), pigs and chickens. Those animals are used for working on the land, like the *carabaos*, or grown to be eaten. They live together with the people and make up a large part of their life. A major part of the daily activities consists of feeding the animals, with leftovers from the food people ate (like leaves or cooked papaya), but also by feeders which need to be purchased. Those animals are used for food but also for rituals, like weddings and burials. One of those animals often used for ceremonies is the pig. Some people have their own piggeries which will be sold. However, it can be hard to sell pigs, because not everyone has the money to buy one. If they plan for example to have a wedding, they will buy a piglet themselves and raise it till the wedding takes place. Therefore many people have piggeries

⁴⁶ Informal conversation with Richard Murro, March 27, 2013

⁴⁷ Told by my informant Irene Cagas, February 13, 2013

⁴⁸ Citation from an informal interview with Joan Baltar, March 25, 2013

which are not being sold.

Another way by which people get food is by planting many different kinds of fruit trees and plants near their houses for own consumption. Papayas, bananas, mango's, avocado's, pine apples; those are a few examples of fruits that people get from the plants and trees. Beside those fruit trees almost every household also has their own coffee trees. Coffee is the most consumed beverage (closely followed by alcohol), therefore the coffee tree is important in the life of the people of Kabayan. Many people have some coffee trees in their garden just for own consumption, because it will not produce enough to sell (like with *palay*). The native Benguet coffee is seen as one of the best types of coffee and big companies like Starbucks and Nescafe are willing to pay big amounts of money for the Benguet coffee. In Kabayan some rejuvenation projects are set up, in order for the people to have better harvests and to sell something to the companies. So there is a possibility that the coffee production can become a good alternative for the vegetable production.

In Adaoay there are also people who have bees. The capital needed for bees is big; about 20.000 pesos (about 361 Euro), compared to 3.000 pesos (about 54 Euro) for gardening, but after you started it is easy to maintain and no need for much money.⁴⁹ Only one check every week (if there are pests) and feeding is necessary only a few times (with sugar), because most of the time the bees can find their own food. 'Harvesting' can be in November-January, which is called the 'honeyflow', after this the honey will be brought to the stores and sold over there.⁵⁰ Those bees are also useful for the production of coffee, in the sense that bees can increase the coffee bean production by pollinating the flowers.⁵¹

Some other forms of work with which people try to earn money, is selling homemade food during occasions, cockfighting, having fishponds, or being a driver, *barangay* official, store owner or nurse or midwife. A few of my informants also expressed their wish to start a poultry, because there are only few people with a poultry in Kabayan, but the problem is that there is no capital available.⁵² Someone else pointed to the climate as factor why poultry is not possible, it would be too cold. Another farmer in a *sitio* of Bashoy made clear that she preferred working in a store, but again having no capital was the problem.⁵³

As this chapters shows, a lot of different livelihoods are present in Kabayan. Besides mining and farming, people also switch to other livelihoods in order to gain enough income. Now this is confirmed, we can start with expounding the different strategies people use to strengthen their income. This is what we will consider in the next chapter.

⁴⁹ Semi-structured interview with Marites Gatan, March 12, 2013

⁵⁰ Semi-structured interview with Marites Gatan, March 12, 2013

⁵¹ Online article:

<http://car.dole.gov.ph/default.php?retsamlakygee=258&resource=6ef10f61f6499c0890b293d1090a0d31> January 28, 2013

⁵² Semi-structured interview with Aileen Bakekang February 28, 2013; Informal conversation with Irene Cagas, February 13, 2013

⁵³ Informal interview with Melanie Kanaway, February 17, 2013

4 The livelihood strategies of the people in Kabayan

In the previous chapter the different work that people in Kabayan do has been examined. In this chapter it will be shown that one single work activity is not sufficient to make a living. The different livelihood strategies that the rural population in Kabayan use to meet their daily needs will be described. Livelihood diversification is one of these strategies. Besides livelihood diversification, social mechanisms based on reciprocity ensure that people will have financial support when needed. The argument of this chapter is that livelihood diversification is a good strategy to cope with low returns in farming, but it is not the only strategy used. Diversification it is not always sufficient, especially when one cannot diversify into small-scale mining. People use a mixture of livelihood strategies to meet their daily needs.

4.1 Rural livelihood diversification

In Kabayan livelihood diversification is the norm.⁵⁴ The term 'sideline' is used when people talk about work they do besides the work they see as their main livelihood. Farming can be a main livelihood or a sideline activity, but for most people it is still considered their main livelihood.⁵⁵ People can have a range of different sidelines and sometimes it is not that clear what is sideline and what is mainline. For example, Gloria and her husband who live in *barangay* Bashoy have land where they grow both rice and vegetables. Besides rice and vegetables they also have some fruit bearing trees. In addition to this they have some livestock: a carabao, a few pigs and a few sheep. On top of this Gloria keeps bees and has a fish pond. The income, which is a little bit of everything, is not sufficient and is complemented by the work of Gloria's husband who is a small-scale miner.⁵⁶ As this example further shows, it that livelihood diversification can be quite profound and manifest. Sometimes diversification is not that visible as people are active in odd jobs that are done at certain times for a short period.⁵⁷

As the majority of the people have gardening as their basic livelihood, the main reason for the people in Kabayan to diversify is to counter the risks of low income in gardening. Incomes gained from gardening are highly uncertain and can be very low due to fluctuating prices of the vegetables

⁵⁴ As told in semi-structured interview with barangays officials of Gusaran, after the barangay meeting at the barangay hall, Saturday, March 2 and witnessed during the fieldwork period

⁵⁵ It can be a sideline for teachers and religious leaders. One teacher at an elementary school in Gusaran who is without husband, but has some children, is gardening to earn some additional money, because the money she earns from teaching alone is not sufficient to send her children to school. (Short informal interview, Thursday, February 14 at elementary school)

⁵⁶ Semi-structured interview with Gloria at her home on Tuesday, March 12.

⁵⁷ As mentioned earlier, this is called *por dia*, this is often done to help each other when some extra labour power is welcomed. The money one earns in this can be seen as an extra.

at every hour of the day as explained in the previous chapter. To spread out the risks of getting a too low price for their vegetables and to minimize future losses, people turn to other activities than gardening. Mining in particular is a way to offset the low prices of vegetables. People who have experienced bad harvests for some years in the past are aware of the risks they take when they continue gardening. Even when one needs as much luck in mining as in gardening, one may opt to go mining because it has a low barrier of entry. For many people, bad harvest in previous periods combined with the high level of capital one needs to start farming again is enough reason to try mining. Mining, in this light can be seen as both coping behaviour, namely to cope with the low income of gardening, as well as a risk strategy, namely to spread the risk of getting a low income.

Some people that are active in gardening or mining are engaged in a special kind of diversification that is not considered work in the strict sense. Cockfighting is a popular sport in the Philippines and also in Kabayan. In and round *barangay* Gusaran cockfights are being held on Saturdays and Sundays and on *fiestas*. Although people may say that it is for relaxation or fun, relatively large amounts of money can be obtained in cock fighting (and of course it can be lost all the same). One of the informants had won 12.000 pesos this way (which means his opponent lost 12.000 pesos).⁵⁸ This shows that, some people, who are active in the uncertain work of gardening or mining diversify their livelihood in the even riskier occupation of cockfighting. Cockfighting should not be considered as a risk strategy as the risk of losing money is not spread out but increased and the money that is being bet is not used to minimize future losses but to maximize profits. It is neither a coping strategy, because in order to bet in cockfighting, people need to have some money to begin with. It is when people have earned an income that they will go to cockfighting.

4.2 Shared livelihoods and the *bayanihan* system

With the presence of a mining site, the people have at least another option besides agriculture. However, like farming, mining is not always profitable and people may face losses. With most of the people engaged in either farming, mining or both, there are always people that get at least some income. For example, some people may sell their vegetables when the prices of a vegetable are low, while other people may be lucky and sell the same kind of vegetables for a higher price at a later time. In mining, if you do not find any good ores in your tunnel at one time, other people may be lucky at that time and find a rich ore vein.

This unequal distribution of income will be levelled by social codes. In farming, if you have some money to your disposal, for example because of a good harvest, you may use this money to

⁵⁸ This is considered a lot of money. To compare, one of the young miners I interviewed got 6000 pesos a month as his salary. So that would be two months of salary. (Semi-structured interview, Tuesday, March 5 in house in Adereg)

buy agricultural needs for someone else, usually a relative, who lacks the finance to do so himself. With mining, if you have found a good gold ore, others who are less fortunate may ask you to share the ores with them. This helping out of each other is what they locally call the *bayanihan* system. If you are lucky at one moment you can share your luck with others so that at another time, when you are less fortunate, others will help you out also. This *bayanihan* system can also be found in the consumer credit cooperatives which are located in different *barangays*. The cooperatives are managed and organized by the local people themselves. At the cooperatives people can borrow relatively large sums of money at low rates of interest.⁵⁹ Money can be borrowed as 'regular loans', for emergency cases such as hospitalization and for investment purposes. Money is mostly borrowed for educational and agricultural purposes.⁶⁰

The *bayanihan* system is especially manifest on the family level. People share their work and finances with family. Both mining and agriculture are family based: your co-workers are your relatives. Children will help their parents and the parents will be working with their siblings and cousins.⁶¹ Work opportunities are also shared with relatives. For example, when one experience losses in gardening or is looking for a job, it is not uncommon to be asked by an uncle or brother-in-law to work with him in the mine or to help in the construction of a house.⁶² Besides sharing work and work opportunities, money too, is shared with relatives. A close relative like a sibling or cousin may give you some money if he or she is better off.⁶³ So your livelihood never consists of your work only and the money you earn is not used for your own use only. Fafchamps (2003; 2007) speaks in this regard of 'risk sharing networks'. She has found that for rural Filipino households a general reciprocity principal holds. Exchange of loans or gifts are taking place within networks of relatives (and friends). This is in line with the findings of this case study. For example, as miners are working in a tunnel that is owned by one person, this person, who nine out of ten is a family member, usually fulfils the role of supplier, meaning that during times of no income he is the one who will provide the mine-workers with food. There are two variants on this in Kabayan. In one, general reciprocity is

⁵⁹ Interest of 1,5%. Informal interview with manager of one such cooperative. (Sunday, March 24, at cooperative).

⁶⁰ Informal interview with manager of one such cooperative. (Sunday, March 24, at cooperative)

⁶¹ In the Philippines family connections reach quite far as first and second cousins are considered close relatives and third cousins are also known by name and face

⁶² Different informants have told me that they were asked by relatives to join them in their work. Hector when he quit gardening was remembered that one of his relatives was working as a miner, so he left his home and went helping him and stayed at the camp near the mine. (Monday, February 25) Elvis, who temporarily worked as my translator had finished his bachelor and was searching for a job at the time that a relative of him texted him that she knew a relative who was currently doing a temporal job in construction and she asked Elvis if he was also interested in doing the work

⁶³ This I observed during my stay in Adereg, when one sister went visiting her siblings. This was also put forward in interviews e.g. informal interview Saturday, February 23 with Red, White and Yellow at their tunnel, semi-structured interview with Eddy on Sunday, March 10, at the mining camp, informal interview with Jonas at theircamp Thursday, March 9

practiced, meaning to say that the giver does not expect something concrete in return (Kottak 2008:169). This is the case for some mining groups in which the supplier provides the food for its co-workers and the materials needed for the mining operation. The miners do not have to pay back the supplier and they will get an equal share of the profit. In the other variant, balanced reciprocity is practiced. This means that the giver expects something in return on a later time (Kottak 2008:169). This is more common in Kabayan and is practised in both mining and farming. In this variant the supplier or owner will get an additional share of the profits. In mining this usually goes by subgroup. For example when four men are working in one subgroup, the income gained from their work will be divided by five: one share for each member of the group plus one share for the supplier or owner. In farming, depending on the agreement, the supplier will get fifty or sixty per cent of the money gained from the harvest. Sometimes the expenses of the supplier will be deducted first, while at other times the sharing goes without prior deduction of expenses.⁶⁴

Besides receiving some money and viand from a relative, one can also go to the local *sari-sari* store for a small loan. If people have little money to spare for their food, they can get some food at the store for which they will pay for on a later time.⁶⁵ Lending from relatives and stores is usually without interest.

The sharing of work, work opportunities and money are implicit livelihood strategies of the people in Kabayan. In the first place it is regarded as expressions of personal relationships and only secondly as economic transactions. People do not purposefully form relationships with households that have a different set of livelihoods, have a higher income overall or who are prone to other risks (Fafchamps 2007:327,346). This means that households do not explicitly try to have better networks in order to improve their income risk by diversifying it. This is contrary to the diversification of livelihood activities which are purposely being done to spread the income risk.

4.3 Education

Although education may not be regarded as part of a livelihood at first sight, it actually is. Remember that in the theoretical framework it is stated that a livelihood is not just limited to income generating activities, but that it also includes social relations (as described in the previous paragraph) and assets. Access to education is one such asset and it is an important one, because it can contribute to a sustainable livelihood (Chambers and Conway 1992:7-8,20).⁶⁶ In Kabayan, education is publicly

⁶⁴ Semi-structured interview with Eddy at their mining camp on Sunday, March 10. Semi-structured interview with Constantine on Tuesday, March 26 at their mining camp

⁶⁵ As one older informant, Abraham, told me at his home in a semi-structured interview. (Wednesday, March 27)

⁶⁶ To reiterate, a livelihood is sustainable when it can provide sustainable livelihood opportunities for the next generation on top of the ability to secure and improve the livelihood at the present time (Chambers and

available, but it is underutilized, especially when it comes to higher education.

Elementary school and high school are public in Kabayan. This means that there is no tuition fee to be paid for. You only have to pay for the books and other school equipment. Nevertheless, in the studied barangays of Kabayan, about 20 per cent of the children do not go to elementary school and 30 to 50 per cent does not attend high school.⁶⁷ An even larger part does not go to college, because it is relatively expensive compared to the costs of elementary and high school. The only public university in the province of Benguet is the Benguet State University. It is located in La Trinidad and has branches in Bokod and Buguias.⁶⁸ If you want to go to college, but you cannot go to this university, you will have to go to an expensive private school. That is why, generally speaking, the costs of college are much higher than the costs of high school and people are not able to enjoy higher education.

Parents value the opportunity of their children to go to school. They themselves did not always have the chance to finish school and as a consequence started farming at an early age. As they have experienced low prices in gardening and even bankruptcy for a few times, they know how important education can be to better your chances. After all, if children go to college they will not have to work on the fields or in the mines like their parents do. However, even if parents want their children to go to school, some children, especially boys, just do not like to go to school and drop out as early as in high school. When they stop going to school, they will start working in the fields or in the mines. If they will be working they will have some available money and they can buy things they like to have, like motorcycles. Riding a motorcycle is very popular among boys, so when they have got the money they will buy one and 'drive away from school'. When they get a bit older, they may regret their decision, but they will not return to school, because they will have to sit in class with people who are a couple of years younger than them.⁶⁹ As this example shows the status of farming has not decreased and cannot account for de-agrarianisation as Rigg (2005b) claims. Boys are still working in the gardens, even if they have the opportunity to go to school and even if farming is not that profitable.

Girls are more inclined to go to school than boys, but some girls also drop out of school. Pregnancy of girls during their school career is not uncommon. When a child has been born, the girl will have to take care for her child and therefore may stop going to school, while the husband may

Conway 1992:6)

⁶⁷ Data retrieved from 'CBMS Poverty Maps, Municipality of Kabayan – 2010'

⁶⁸ The courses one can take in Bokod and Buguias are limited. Informal talk with Elvis, graduate of the university of Bokod. (date unknown)

⁶⁹ I have observed the presence of motorbikes. One informant, David, told me that the buying of motorcycles is a recent development. 'When one person first bought a motorcycles many others followed and now you see many motors around here.' (Monday, April 1) I have also talked several times with a parent of a boy who owns a bike and stopped school, inter alia, on Sunday, March 10.

quit school because he needs to work to support his family.⁷⁰

Some young people actually work to go to school, the money they earn by working will be to finance their education.⁷¹ Still, others who have not finished school support their siblings in going to school by contributing to the tuition fee.⁷² In one particular case, a miner was saving for his own future education while at the same time he helped paying his sister's study.⁷³ Like many people in Kabayan, he was using a mix of livelihood strategies. He started mining, because he got asked by his cousins (social relations), so he went to Tibaran to mine (migration), the mining operation is financed by the brother-in-law of one of his cousins (balanced reciprocity) and now he is saving money for himself to study and he gives money to his sister (balanced reciprocity and assets). This mix of livelihood strategies, is a common pattern in rural Kabayan. We will have more to say about this in our conclusion, but first we will take a closer look to yet two other livelihood strategies: migration and usage of government services.

4.4 Migration

Kabayan is not only the name of the municipality central in our research, but people also call their fellow Filipinos abroad 'kabayan'.⁷⁴ As said in the previous chapter some people are moving to other places to search for work or for studying. This trend is clearly seen in Adaoay, where most of the young people went to cities like Baguio or abroad. Most of the elderly stay and cultivate the land. This is in contrast with Adereg and Bashoy, where most of the people stay to try to make ends meet with the existing livelihoods and job opportunities and where more youth are going to work as farmers, as stated in the previous paragraph. However, more and more people are aware of the importance of education, especially when searching for work in cities or abroad. Though, even if someone finished his or her education, it is uncertain when or whether to find work. Because of the limitedness of jobs, like stated in the previous chapter, there are doctors who apply for a nursing job abroad, or teachers working as a domestic helper. Those Overseas Filipino Workers (OFW's) are often working for a minimal income, employed in least popular jobs, in countries of Asia and the Middle East.

The (temporary) migration is not very often accompanied with remittances, which is one way

⁷⁰ Informal interview with tourist guide and miner Jacob at Tibaran on Thursday, February 28.

⁷¹ Informal interview with miners Red, White and Yellow outside their tunnel on Saturday, February 23. Semi-structured interview with Nimrod at mining camp under construction on Monday, February 25. Informal interview with young miner Rimos at ball mill site on Saturday, March 23.

⁷² Informal interview with priest and miner Santos at processing site on Monday, February 18. Informal interview with miner Jeffrey, Thursday, March 9.

⁷³ Informal interview with White (Saturday, February 23)

⁷⁴ Source: <http://www.unladkabayan.org/what-is-unlad-kabayan.html>, visited on May 18, 2013

of income diversification. This is because many OFW's have their families abroad which they have to sustain. 'Livelihood, after all, is not only income generating activities, but also social institutions, social relations and material assets' (Carney and Ellis 1998 in De Haas 2010) like remittances, which are seen as safety net and an aid to alleviate poverty (de Haan and Zoomers 2003). (Labour) migration is a form of diversification, as risk strategy or as coping behaviour (Ellis 2000:294, 297-298). Beside the people who are already working abroad, there are also people who would like to work abroad, but who do not have the financial resources to do so. And there are people (most elderly people) who prefer to stay in their hometown to work as farmers, because there they are able to produce some food for own consumption, which is not possible in the cities. Life in the cities is much more expensive than in Kabayan. Some people are really encouraged by their parents to go abroad and choose a study which is useful for working abroad. This is stated by one of the informants, who studied nursery herself and stated to "keep doors open", when asked whether she wants to go abroad. But is going abroad the only solution? "Over there most of the time it is also hard working, with little income. Here (Kabayan) at least you have some food, abroad most of the time it is expensive to buy".⁷⁵

4.5 Government support

There are different programs and projects on national as well as on regional level trying to help the people in Kabayan to improve their level of well-being, like livelihood projects, seminars and infrastructural and technological improvements. The government is promoting reforestation by means of the National Greening Program (NGP) and at the same time tries to achieve food self-sufficiency, for example by a school garden with the aim of making the youth interested in agriculture (Malanes 2011). The government is even trying to prevent out-migration of farmers in Benguet, by improving farming facilities, like roads, trading posts and irrigation systems.⁷⁶ Other ways to help the farmers are technical assistance and providing hybrid seeds. However, the provision of those seeds is linked to the use of fertilizer and other chemicals, which are expensive.

The government tries to help people to find livelihoods with different projects and one of those projects is the coffee rejuvenation program.⁷⁷ This program is designed to help people rejuvenating their coffee trees in such a way that the harvest will increase, so that they can sell it to the big companies. Other ways in which the government is trying to help, is by setting up of food

⁷⁵ Informal conversation with Joan Baltar, March 8, 2013

⁷⁶ Source: <http://balita.ph/2012/11/08/benguet-to-further-improve-vegetable-industry-to-prevent-out-migration-of-farmers/> , visited on May 17, 2013

⁷⁷ Visited CHARMP2 project on February 18, 2013, Bato. Second Cordillera Highland Agricultural Resource Management Project (CHARMP2), Reducing poverty and improving quality of the life of rural highland indigenous peoples/communities in the Cordillera: <http://www.da-charmp2.ph/index.html>

products which people can sell during occasions (like weddings, cockfighting, burials etcetera), like banana chips made from bananas which are not suitable to eat as they are. Joan pointed out; “the government tries to help women to find out other livelihoods, for example making banana chips from bananas, or if they are creative they can make souvenirs for the tourists”.⁷⁸ If there is an occasion, big or small, there are people trying to sell their (food) products. And not only during occasions, but everywhere along the road you can see and hear people trying to sell their food.

Seminars are given to instruct people about different kinds of livelihoods. Examples of those seminars are raising piglets, having poultries or keeping bees, where we have previously talked about. The honey is sold in stores or people visit houses to sell their products. This also goes for people who have fish in fishponds. However, there are only a few fishponds in Kabayan, because of the water shortage. Besides these projects and seminars the government also distributes animals, like chickens and pigs, for the people to raise. Arnel Abrigar summarizes the help of the government as follows; “The government is trying to help, they are giving the farmers hybrid seeds for a reduced price (Department of Agriculture). But it is working at slow pace. They are also trying to give supervision, information and seminars about technology. They try to share their expertise, and monitor what is going on, but it is still a long shot”.⁷⁹

In this chapter it has been discussed how the people of Kabayan use different strategies in order to earn enough income for their daily needs. In reality people use a mix of livelihood strategies to get by. As small-scale mining is only one part of the livelihoods and livelihood strategies, its value as a livelihood strategy in relation to the other livelihood strategies will be assessed in the conclusion of this study.

⁷⁸ During an informal conversation, walking from Eddet to Adaoay on March 6, 2013, using the cemented footpath which is a project from the European Rehabilitation Program (ERP)

⁷⁹ Informal conversation with Arnel Abrigar, April 1, 2013

5 Conclusion

The realization of the importance of non-farm work in rural communities, have led scholars to see peasants not only as farmers. It made them aware that it is better to analyze economic rural situations by using the concept of 'livelihood' than to use a sectoral approach by focusing only on farming (Ellis 2000a:ix; Ellis 2000b:289-290; Rigg 2005b:174). To reiterate, a livelihood comprises the capabilities, assets and activities required for a means of living (Carney 1998). The ways by which people secure, maintain and improve their economic position are their livelihood strategies. Livelihood diversification is such a strategy. Livelihood diversification into non-farm work is common practice in rural communities (Davis et. al.:2009; Rigg 2005b:175). Yet, this non-farm work, which has become crucial in the livelihoods of rural people in developing countries has not fostered much attention yet in the livelihood literature (Banchirigah and Hilson 2010:159). In this study, the livelihood approach has been used, to take a step ahead, by looking at the non-farm work rural people diversify into. The non-farm work that is the focus of this study is small-scale gold mining. The literature concerning small-scale mining has been concentrated on sub-Sahara Africa, where it has become an important livelihood (Banchirigah and Hilson 2010:159). Outside Africa, small-scale mining is a little explored topic, but, as this study argues for the Northern Philippines, its place in the livelihoods of rural dwellers is just as great. This argument will now be substantiated by answering the central question of this study: which livelihoods and livelihood strategies are present in Kabayan and what is the role of farming and mining herein?

One point that has become clear from previous chapters, is that farming, in particular commercial gardening, is the most important livelihood in Kabayan. Gardening in Kabayan is a livelihood which is influenced by different external processes (natural, economic and political). It is difficult, if not impossible for the residents of Kabayan to influence these external processes. At the same time, the internal factors, the strategies they use to cope with disappointing harvests and to increase their income are resourcefully used to counter the negative effects of external processes.

What exactly are these external processes that affect the livelihoods of the residents of Kabayan? First of all, people mention climate change as affecting their farming practices. Although the validity and extent of climate change is topic of scientific debate, it is mentioned by many farmers as a reason for the difficulties they face in farming. Increasing temperature, heavier rains and heavier typhoons make it more difficult for farmers to schedule their activities. Heavy rainfall and storms might also destroy vegetables, resulting in poor harvests. On the other hand, periods without rain result in a lack of water. Although not part of climate change, fires and logging are causing deforestation which aggravates soil erosion. This, in its turn, increases the likelihood of landslides

which can block roads and impede the transport of people and goods from village to city and the other way around.

Other external forces influencing farming are the closely related concepts of globalization, modernization and liberalization. One aspect of globalization can be seen in developments in Philippine politics: the membership of the World Trade Organization (WTO) in 1995 and the signing of different free-trade agreements like the ASEAN Free Trade Area (AFTA) by which the Philippines will enter the Asean Economic Community by 2015. Many people wonder if this is a step in the right direction.⁸⁰ The liberal policies of opening up boundaries and the expansion of the market, will cause a rise in imports which may result in falling vegetable prices. Already, because of the use of fertilizer and pesticides, more capital is necessary, which presses many farmers in a circle of credits and loans, regularly resulting in debts and bankruptcy. They become dependent on suppliers and a large part of their profits are going to middlemen (Margold 1989:40).

Globalization results in countries being more interrelated due to better infrastructure like roads and the Internet, but this interrelationship can cause some countries to prosper, while others stay behind. According to dependency theory there is an economic hierarchy of countries and a hierarchy within countries. In the Philippines, as in the case of Kabayan, a vertical hierarchy manifests itself in patron-client relationships (Margold 1989:42). Most of the farmers are dependent on suppliers and middlemen, who are, in turn, dependent on higher powers like the government, which on its turn is dependent on other countries.

Outside forces are affecting farming practices in Kabayan and residents have little influence on these. They try to make a living in farming, but poor harvests can undermine their income and their food supply. In Kabayan, most people search for alternative livelihoods outside farming, in order to have enough income for their daily needs like food and for education. This is in line with Bryceson's (2002) argument of de-agrarianisation. However, like stated in chapter 3, while in some regions youth prefer to do other work than farming and leave the municipality, in some regions in Kabayan, like in the *barangays* Bashoy and Adereg, young people stick to farming. It is noteworthy that in these *barangays* small-scale mining is practiced. This observation supports the argument that diversification enables peasants to continue farming (Brookfield 2008).

In Kabayan, other ways of earning an income than farming are working in tourism, working as a professional like a teacher or a doctor, keeping bees, cultivating coffee and mining. The shift from farm to non-farm activities occurs not solely because of more difficulties in making a living with farming, but also because of a change in the way of thinking of many individuals. Some people, mostly youth, are attracted by the life in cities, which offers more facilities like stores and more

⁸⁰ Newsarticle February 9, 2012: <http://www.rappler.com/business/11600-ph-may-not-be-ready-for-aec-pids>

possibilities for leisure. They are aware of this by images on television and by short visits to the city. People are now more related to the life in cities which is in line with the argument that livelihoods have become more 'multi-spacial', in the sense that many urban and rural households exploit opportunities in different places and therefore live from both agricultural and urban incomes (de Haan and Zoomers 2003). This is possible due to outcomes of modernization, like better accessible roads and the introduction and spread of cell phones. Almost everyone in Kabayan owns a cell phone, while the roads are improved and motorcycles are ubiquitous. Better travel opportunities facilitates the step to migrate to other provinces, or foreign countries in search for better work opportunities. Work abroad may be accompanied by remittances, which can be complementing the income of family members back home. However, in Kabayan only a few people seem to receive remittances and therefore only few live from both urban and agricultural incomes. Many more people live from income gained from both mining and farming.

There has been a surge in small-scale mining in Kabayan in recent years with the introduction of new technology. For those located near the mining site of Tibarán, mining usually is a viable alternative to gardening. Mining can be seen both as a risk strategy and as a coping strategy. Although gardeners can turn to a supplier or moneylender when the returns of gardening are too low to cover the daily expenses and to invest in another round of gardening, this is not an ideal solution. Debts and dependency on moneylenders and suppliers stand in the way for gardeners to have a sustainable livelihood. For some peasants small-scale mining can be an alternative. It has the advantage that only little capital is needed to start. However, the insecurity of earning money still remains. Because the risks of mining and farming are different, doing both work will spread the risks involved in each of the work. Still, the chances of earning a low income is still quite high. Diversifying into small-scale mining is therefore not necessarily, and certainly not immediately a successful risk- or coping strategy. It is here where traditional tight-knit social relationships comes into the picture.

The modes of production school sees the compatibility of traditional modes of production with a capitalist, market-based mode of production (Margold 1989:38). We argue that this applies to Kabayan and that it forms the very basis on which the residents make a living. Indeed, it would be very hard to have a secure livelihood by producing for the market without the strong social relations and the accompanying reciprocity. In Filipino this reciprocity is indicated by the word '*bayanihan*'. The *bayanihan* system in Kabayan can be observed at different aspects of life, ranging from special occasions like marriages and funerals to everyday work and leisure. In work it manifests itself in different ways. First, the workload is shared. The prime example can be found in agriculture, in the harvesting of crops, during which relatives and friends, women and men, youngsters and adults all help in getting the crops off the land and in bringing it to the transport vehicle. Secondly, work

opportunities are shared. Relatives are informed if a construction project will start in which they can help, if *konboy* needs being done or when they can come working in the mining shafts.⁸¹ The sharing system in mining, locally called *saga-ok*, is still practiced in Kabayan. A miner can ask to work in someone's else tunnel to get some of the ores and profits. It makes mining a profitable endeavor even if one does not find good gold ore inside his tunnel. Thirdly, in both farming and mining, the viand and capital needed for work can be provided by a supplier. This can be either a form of generalized reciprocity or balanced reciprocity, depending on the agreement. This reciprocity makes it possible for people with low financial means to continue farming or start mining. Finally, the income of the work itself, in the form of money, is being shared. A young teacher may give some of her salary to her old parents and a young miner may give some of his earnings to his sister in order to study. These forms of sharing are all an expression of a kin-based mode of production. These risk sharing networks form the safety net in the market based rural economy in which peasants have to cope with disappointing harvests and low prices. Unlike diversification it is more often than not an implicit strategy, but it is just as important.

The livelihood approach comes to terms how rural dwellers make a living. It does not only look at production activities and consumption behaviour, but it also considers tangible and intangible assets. Intangible assets like risk sharing networks have proven to be indispensable for an accurate analysis of the livelihood strategies of people. Access to assets, like capital (see Figure 1: human, natural, financial, social and physical capital) are necessary for people to perform their strategies. Many poor residents in Kabayan lack access to crucial assets like land and capital, which is also stated by different informants, who, for example, would like to migrate or start a poultry, but do not have the capital to do so. As indicated by Margold (1989:40), a cash crop that requires certain input can only benefit farmers who have the means to provide these inputs by their financial capital. What farmers in Kabayan lack in financial capital, they make up by using their social capital and by diversification. Diversifying into mining is a well-used strategy by those who are able to do so. The need for low capital makes it an attractive alternative. What makes it a successful strategy is that it is combined with the *bayanihan* system of sharing and giving that is also found in farming. The most striking example of this, and what is unique for small-scale mining, is the *saga-ok*, by which miners from one tunnel can share in the profits of miners from another tunnel.

Mining and farming both play an important role in the livelihoods in Kabayan, where livelihood diversification is ubiquitous. However, the centrality of agriculture as a mode of production still remains and will yet remain the basic livelihood activity for the majority of the residents of Kabayan. The financial gains of farming however, are insecure and often low or even zero. To improve

⁸¹ *Konboy* is the carrying of baskets of vegetables during harvest or the carrying of sacks of *naba*.

the livelihoods of the people it is therefore important to focus on both farming practices and complementary activities like the well-used livelihood activity of small-scale gold mining.

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Attachments

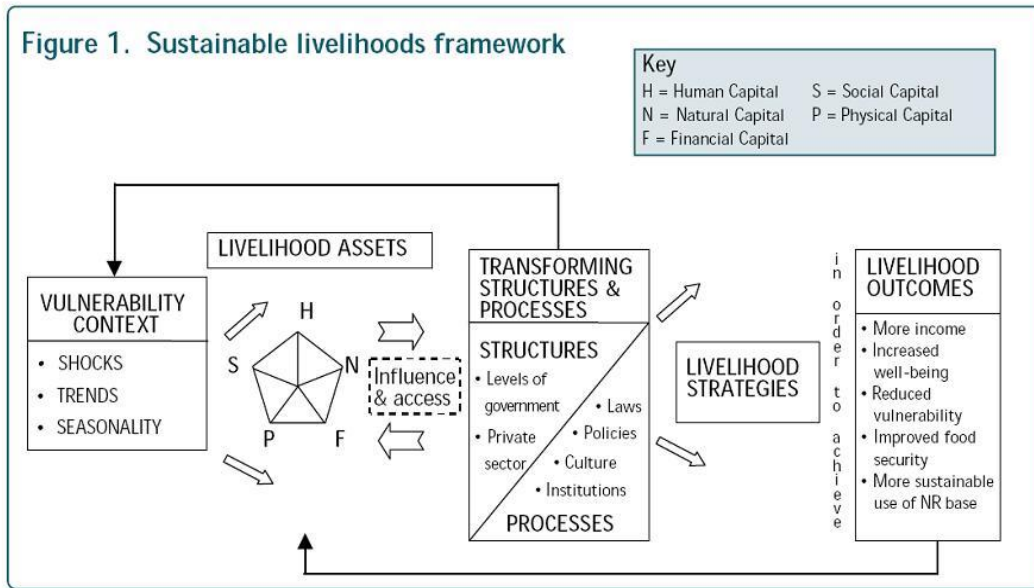
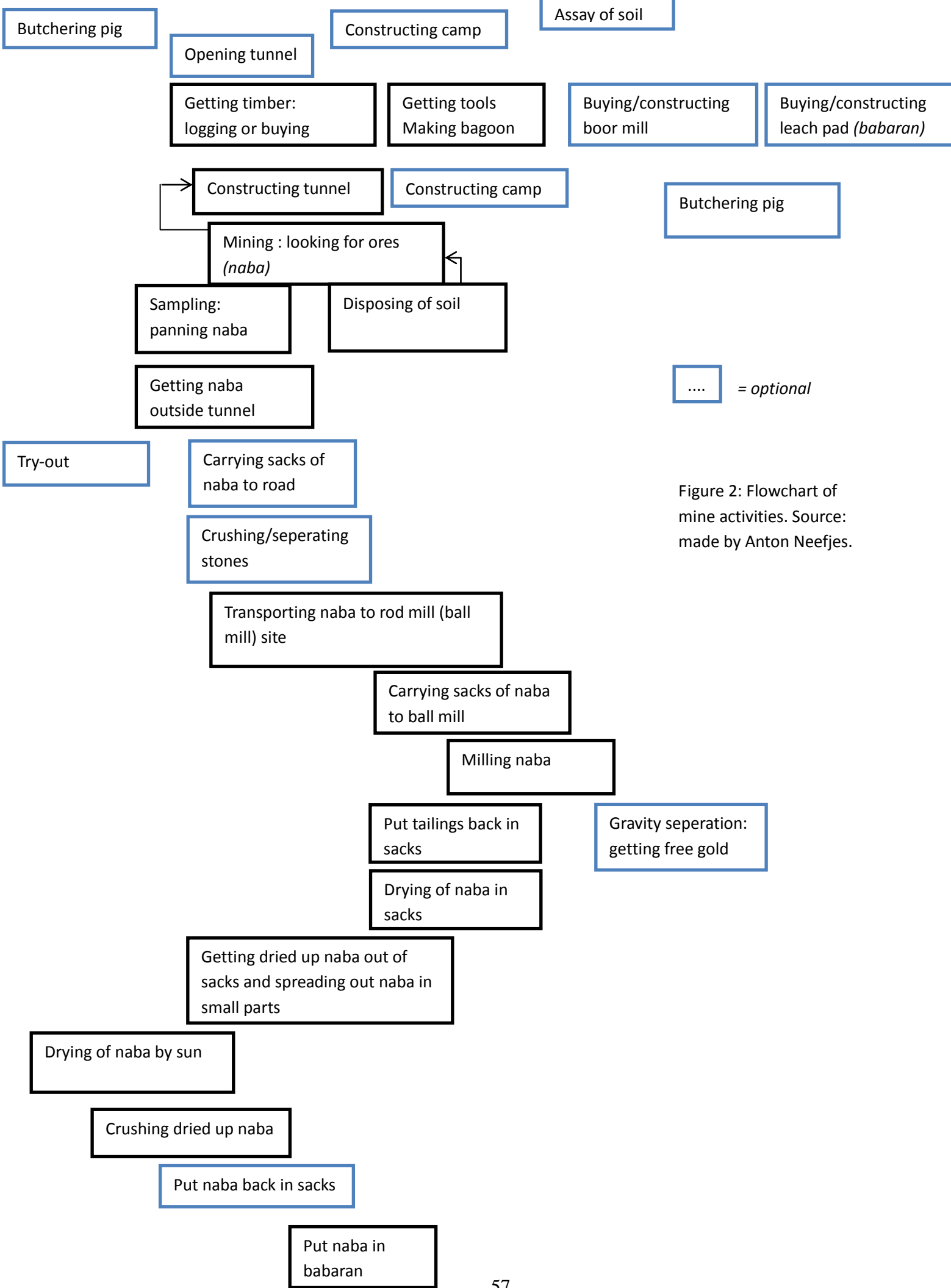
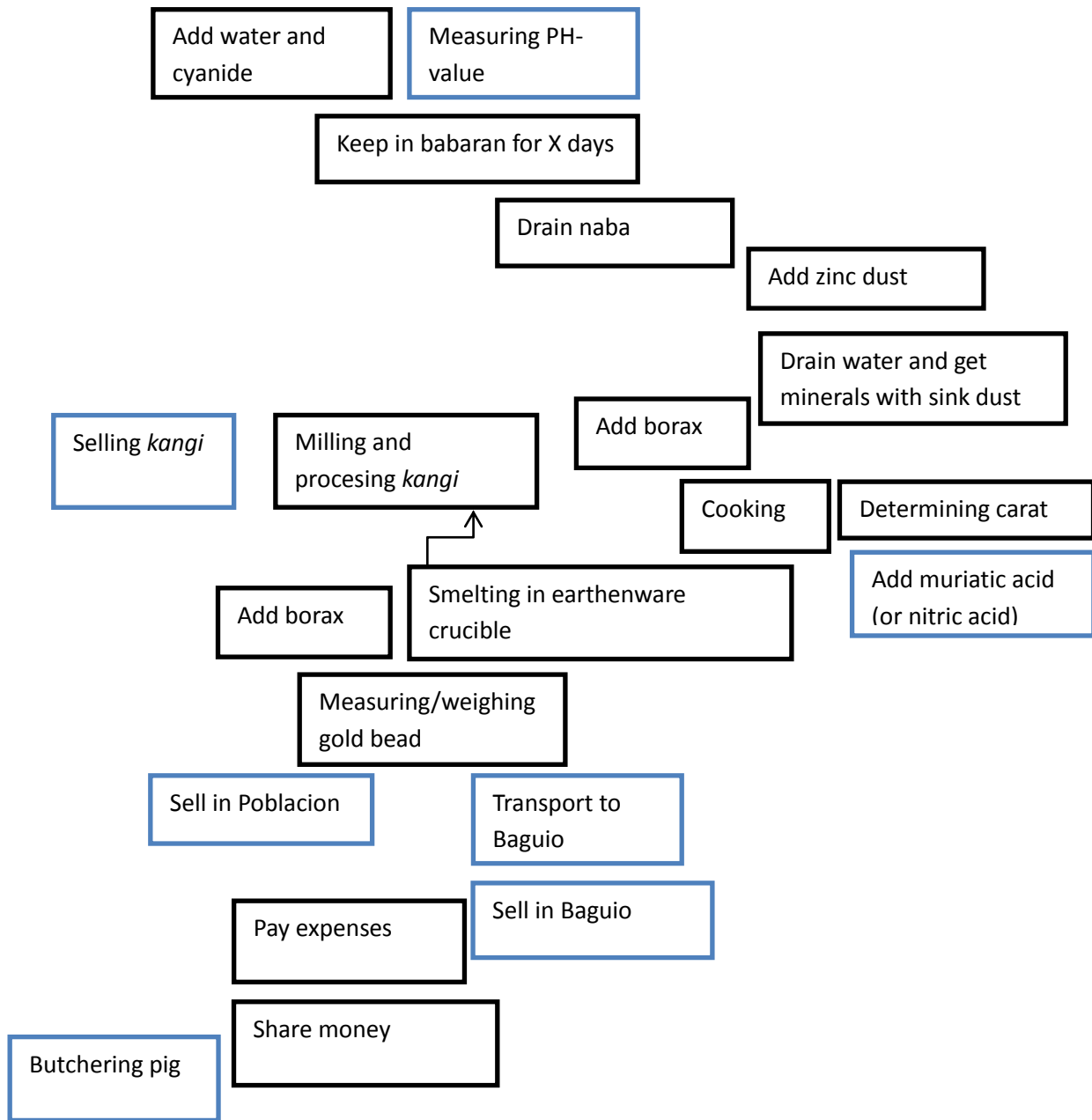


Figure 1: The sustainable livelihoods framework. Source: <http://www-personal.umich.edu/~qtian/VulnerabilityII.htm>, visited between June 6-12, 2013



.... = optional

Figure 2: Flowchart of mine activities. Source: made by Anton Neefjes.





Photograph 1: vegetables in the trading post of La Trinidad



Photograph 2: vegetables neatly packed in sacks, ready to be transported to other parts of the country



Photograph 3: women working in the rice fields, planting rice, Adaoay



Photograph 4: rice seedlings ready to be transplanted, Adaoay.



Photograph 5: the combination of rice and vegetable fields, people planting rice, Bashoy



Photograph 6: a carabao in a waterhole, with vegetable fields in the back



Photograph 7: *sitio* of Adereg



Photograph 8: one side of mining site Tibarán



Photograph 9: Tibanan from close. In the right corner is standing friend and translator Elvis.



Photograph 10: outside a tunnel: *bagoons* and sacks with *naba*



Photograph 11: view of mining tunnel from the inside



Photograph 12: two samples of *naba*



Photograph 13: gold panning. Testing if the *naba* contains gold by gravity separation, using water and a sample pan.



Photograph 14: two gold beads after the *naba* has been processed. The end product of hard work in the tunnels.

Summary

When looking in the literature about livelihoods it soon becomes clear that livelihoods are changing and shifting from farm to non-farm activities. No longer are peasants seen as rural people who are solely or primarily engaged in farming. This realization has led to the livelihood approach which comes to terms with how rural people actually make a living. This is not to say that farming is declining, but that farmers are diversifying their income, with alternative livelihoods.

This broadening of livelihood activities, called 'livelihood diversification', is a way for rural people to increase their standard of living or to secure their economic position (Ellis 2000b). One alternative livelihood is small-scale mining, an important livelihood in different countries around the world, but almost absent in the literature about livelihoods. This is how we came to the following research question, which we will explore in this thesis: which livelihoods and livelihood strategies are present in Kabayan and what is the role of farming and mining herein?

Kabayan is a municipality situated in the province of Benguet, in the Philippines. A region which have witnessed a growth in the small-scale mining industry, but where farming is still the main livelihood. This makes the municipality interesting for our research. We will have special attention for the motives of the people to turn to these mining activities and the relation to the farm activities. The research is conducted for eleven weeks in the months of February to April 2013, in a research team consisting of two researchers. This made it possible to separate the research with one researcher focusing on mining and the other one on farming. Important methods used during this research are interviewing (open, informal and semi-structured) and participant-observation. In chapter 1 we will present the theoretical framework, with a broader introduction of the literature and important concepts like development, globalization and livelihood (diversification). In chapter 2 we give more detail about the research context and after this we will continue with an overview of the different livelihoods present in Kabayan in chapter 3. Following this are the livelihood strategies people use to increase their income in chapter 4. In the conclusion we will give our answer to the central question and look back on the different statements of authors of the theoretical framework.

Like we already stated, the most important livelihood in Kabayan is farming, consisting of cultivating vegetables (gardening), raising animals, cultivating rice and planting fruits. Vegetables cultivated in Kabayan are, among other, beans, peas, carrots, broccoli, cauliflower and pepper. Before, more rice and sweet potatoes (*camote*) were produced, but due to different changes this shifted to vegetable production for the market. Although a shift back to rice in the 1980s occurred, due to a very low price of vegetables, the cash crop production seems to predominate again. The shift to cash crop production was made possible by the arrival of the Japanese and their new technologies and the American colonization (1898-1946), which spurred the demand for cash crops.

However, the search of farmers to diversify their income is not without a reason. This is for a large extent due to low prices of vegetables, caused by several factors. One of those factors is the oversupply of vegetables brought to trading posts, the reason why middlemen are able to keep the prices low. Another important factor is the trade liberalization, accompanied with the opening of borders, resulting in imports which contributes to the low prices of vegetables. The farmers of Kabayan are not able to compete with those cheaper overseas produce. Sometimes it is not even profitable for farmers to harvest and to bring their crops to the market, resulting in vegetables being dumped along the road or left on the fields to serve as fertilizer. On top of this, the farmers might be restricted in their activities due to climate change. Warmer temperature and more rain during dry season and less rain during wet season make it difficult for farmers to schedule their activities.

Those are reasons why people seek alternative livelihoods, like mining. Tunneling and gold panning are the two forms of small-scale mining which can be observed in Kabayan most. Heavy earthquakes, rain and landslides however, might cause collapse in the tunnels which make the work very dangerous. This is especially the case for the first mentioned form of mining. Most people go mining because of the low and fluctuating prices of vegetables and with mining you need less capital to start compared with farming. Independence of weather conditions is another reason for people to go mining. During dry season, when there is a lack of water in farming, many people switch to mining, while during rainy season many people go back to farming. Besides the low prices of vegetables, the arrival of new technologies is also an important argument for the spur in mining. Like in farming, there are also suppliers in mining, providing the food for the group and purchasing the needed materials. Cyanide is used to obtain the small particles of gold. This is one of the reasons why miners face protests from the government as well as from some local residents. Because mining is an important source of income, although the income is uncertain, it seems unlikely that the mining operations will decline in scale. Both farming and mining face an uncertain and unstable income, therefore people, again, seek alternative livelihoods.

Examples of other livelihoods people turn to are being a professional, like a teacher, nurse or doctor or a driver, tourist guide or porter in the tourism sector, for example on Mount Pulag or the mummy caves, tourist attractions where Kabayan is known for. Besides, people are keeping different kinds of animals and are planting different kinds of fruit and coffee trees, for own use, or in order to complement their income. Some people are keeping bees, some people have fishponds and many people are growing coffee in their garden. Another form of (additional) income is the *por dia* work; which can be anything ranging from selling foods on special occasions, carrying sacks of ores at the mining site or carrying sacks of vegetables which result in income for one day, *por dia*. Lack of capital, however, is often mentioned as reason why people are not able to start an alternative livelihood, for

example a store or a poultry.

One important livelihood strategy we examine in this thesis is livelihood diversification. This means that people are looking for alternative livelihoods in order to make both ends meet, for example the combination of farming with mining or starting a store. This can be seen as risk or coping strategy. More people now seem to be aware of the importance of education, although many people are not able to send their children to school. When people are educated it is more likely to find other work, besides mining and farming, for example as a teacher, nurse or doctor. However, even if you passed a study it might be hard to find work and therefore many people migrate to cities or abroad. But even if people seem more aware of the importance of education, there are many drop outs, children who prefer to work to buy cell phones and motorcycles. The government tries to help the people with the setting up of different projects and programs, like seminars where people can learn about alternative livelihoods, like starting beekeeping or piggeries or the selling of banana chips.

We will argue that in the face of uncertainty and low prices of agriculture, rural livelihood diversification is indeed a widespread livelihood strategy for the people of Kabayan. This is not limited to small-scale mining, but it applies to a range of other work and services. Small-scale mining is however, one of the most lucrative work activities one can diversify to and in the absence of mining opportunities local diversification may not be enough to offset the low income of farming and people may have to migrate to other places.