



Universiteit Utrecht



FEEDER ROAD DEVELOPMENT IN ETHIOPIA

An analysis of the impact of feeder road development on creating new employment opportunities in Ethiopia

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With great pleasure I present to you my thesis about the impacts of feeder road development on employment. This thesis is the result of six months field research and data analysis. The research was conducted as part of the graduation assignment of the International Development Studies master programme of the Utrecht University, the Netherlands.

This research is part of the 3 year research program ‘Ethiopia: Feeder road development for inclusive productive employment’ undertaken in the Tigray region. Collaborating partners of this research project are Utrecht University, Mekelle University, University of Sussex, Meta Meta and HESPI.

This thesis provides an analysis of the relation between feeder road development, market access and employment. I hope this thesis provides new insights into the overall literature about the impacts of feeder road development and could possibly guide future actions regarding this in Ethiopia and beyond.

Conducting the research and writing this thesis was a great learning experience. The last months of research and analysing has contributed to a better understanding, more knowledge, and new perspectives on these topics. This thesis would not have been realized without the support of several people. First of all, I would like to thank my supervisor dr. Crelis Rammelt for his time and effort to advise and answer my questions when needed, investing so much time in the overall research and guiding me and my research partner, not only in Ethiopia but also in the preparing and analysing phase back in Holland. In addition, I would like to thank dr. Maggi Leung for the instructions and useful feedback in the preparation phase of the research. Thirdly, I would like to thank Kebede Manjur for helping me with the fieldwork phase in Ethiopia and providing me with useful information and contacts. Last but certainly not least, I would like to thank the translators Teklegiorgs Gebremeskel and Bahta Setegn for their great job in translating and arranging the interviews and Pieter Rosman, my research partner, for all his support and great inputs. Finally, I would like to thank the respondents who have taken the time to contribute to my research; without them I would not have been able to get these interesting results of this thesis.

Kbret Yhabeley!

Paula Beens

EXECUTIVE SUMMARY

This research is conducted in the Tigray region of Ethiopia to gain a deeper understanding of the impact of roads on employment in Adiksandid; a village in that region that recently got separated into two villages: laelai (upper) and tahtai (lower) Adiksandid. The research provides knowledge about the impact of the road on employment opportunities and market access in general; the relations between improved market access and employment; and the role of the government concerning these two topics.

Provision of feeder roads leads to employment opportunities such as (i) new transportation possibilities, (ii) the establishment of little shops and small cafes along the road, (iii) jobs that became available in other areas because of the road and the possibility to migrate for daily, temporary or permanent labour, (iv) stone grinding activities and (v) providing services along the value chain. However, these opportunities are not equally divided among the citizens of Adiksandid and thereby not all these new opportunities seem to be that positive.

The impact of feeder road development on employment can be even greater when including the influence of the road on market access as well. Feeder road development leads to improved market access and therefore the quantity, quality and diversity of the goods increased. However, improved market access does not lead to positive developments only, as it also leads to increased market competition, resulting in different prices for consumers and lower incomes for farmers.

Improved market access could in turn also create to new employment opportunities e.g. new actors in the value chain, the establishment of little shops along the road and by the means of labour migration. Not all of these new opportunities are however positive outcomes, especially the new actors in the value chain. Furthermore, the construction of the road could lead to even more employment opportunities than it has now: it has more potential that needs to be utilized, especially the potential of the local market development.

We conclude that the construction of the feeder road in Adiksandid has led to several new employment opportunities. However, there are great differences between laelai and tahtai Adiksandid and therefore the opportunities and benefits are not equally divided among the people. For these mentioned differences between the two tabia's and the negative outcomes of feeder road development, review of the current policies is needed.

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1 INTRODUCTION

Almost 85 percent of the Ethiopian population lives in rural areas. These rural areas are mainly isolated rural settlements with poor spatial integration, and is according to several scholars and politicians one of the reasons why poverty rates are so high and the economic growth rates are low (Khandler et al. (2006); Bryceson et al. (2008); Ethiopian Roads Authority (2012)). When rural areas are isolated and have no access to markets of goods and services¹, it can, according to Bryceson et al. (2008), hinder economic activity. According to Khandler et al. (2006), access to these locations of economic and social activities is needed for local development, and that is also the reason why the development of feeder roads² is considered equally important (Khandler et al. (2006); Bryceson et al. (2008); Ethiopian Roads Authority (2012)). Therefore, developing the road sector is one of the strategic pillars of the Ethiopian Government to improve the well-being of the rural poor (Growth and Transformation Plan, 2011). According to the Growth and Transformation Plan (2010), provision of feeder roads could lead economic growth and poverty reduction, including (i) improved quality of universal education as it makes it possible to recruit qualified teachers; (ii) improved access by the poor to several resources that they need to raise their living standards and welfare; (iii) opportunities for the poor to participate more in development opportunities; (iv) improved access to markets, jobs, schools and healthcare; (v) employment opportunities; (vi) and reducing the negative impacts of natural disasters and shocks (Ethiopian Roads Authority, 2012).

However, the opinions about these potential benefits of feeder road development are divided, and therefore this research will focus on the assumptions that feeder road development leads to improved access to markets and jobs and that feeder road development could create employment opportunities, questioning these potential benefits critically. The research will explore both the

¹ e.g. (i) (local) markets of food and other household goods; (ii) (local) markets where farmers get their input for their farmland, like (improved) seeds, etc.; (iii) services along the value chain (e.g. transport services, middlemen, wholesalers, etc.); (iv) labor markets; etc.

² A feeder road is a minor, all weather, upgraded community road used to connect traffic to a major road, and in the case of Ethiopia, it connects the kebele or tabia. A kebele or tabia is a rural village in Ethiopia and therefore, a feeder road is only for rural purpose and connects the main asphalt road with the kebele or tabia centre (Ethiopian Road Authority, 2012).

potential benefits alone, but it will also emphasize the relation between the two; how improved market access could lead to new employment opportunities.

Employment opportunities are directly created by the Ethiopian Government by using labor based approaches (LBA) (Ethiopian Roads Authority, 2012). When building and maintaining the roads, the authorities are making use of Ethiopians least expensive and most abundant resources: labor. This is an employment intensive program what directly creates employment opportunities by letting the rural population build and maintain the roads by themselves. However, these directly created employment opportunities like constructing road and maintenance will not be part of this research. Even though these direct employment opportunities created through feeder road development can be questioned as well, a lot of literature is already written about this potential benefit. Not much research is done on the relation between employment and improved market access and therefore this research will focus on this relation in order to contribute knowledge about this topic.

According to the Ethiopian Roads Authority (ERA) (2012), the most obvious and simple way to create new employment opportunities is by improved access to labor markets, because the villages are now connected and the people are able to travel and seek work elsewhere (Ethiopian Roads Authority, 2012). This might seem easier said than actually done in practice, while one need, among others, adequate (local) policies and good transport services to facilitate the job seekers in order to find a job. Another possible way to create employment opportunities through feeder road development can be by improved access to (new) markets. According to Jacoby (2000), strong links to markets for poor rural producers appear to be essential to increase (agricultural) production and generate economic growth in rural areas. Therefore, improving these links could boost the productivity and increase incomes (Jacoby, 2000). Additionally, better access for small producers to domestic and even international markets could mean that they would sell more products against higher prices. According to IFAD (2011), this could in turn encourage farmers to invest in their own businesses that would increase the quantity, quality and diversity of the goods they produce (IFAD, 2011). Furthermore, improved market access could lead to the establishment of shops along the road.

In light of the above, it seems possible that improved market access could create new employment opportunities. Rural households that are unable to interact with these markets are

prevented from adopting these diverse livelihood strategies. Is that because they are unable to access, and is it therefore of great importance for all rural households to improve their access to markets, mainly through feeder road development? Although most of the literature about the impacts of feeder road development is written about the all above mentioned positive potential benefits, some scholars argue that feeder road development can also have negative impacts, like increased market competition (deGrassi, 2005), that may harm the local people (Hook & Howe, 2005) and could result in job losses for the local community. This might be the case, as the people using the road get their products elsewhere, which results in a loss of demand for the products of the local farmers. Secondly, traders can now easily access the villages, with all its consequences and one may ask the question: who is benefiting the most from this? Thirdly, the road might increase labor migration, either forced because of the above mentioned reasons, or voluntary, but again with all its consequences. This research will emphasize these negative impacts as well and will try to measure to which extent these negative impacts are occurring in the research area, and how problematic the construction of a road also can be.

New employment opportunities through feeder road development are not spontaneously created just after a road construction: one needs governmental support from different levels to stimulate this. The role of the Ethiopian Government in providing public infrastructure is important, not only in providing roads but also in facilitating employment opportunities. As this research will focus on employment opportunities created by feeder road development, the role of the national, regional and local governments are especially important since they could play a facilitating role, and therefore their policies and strategies have to be known and analyzed. Not only the strategies in order to develop and facilitate employment opportunities through feeder road development are interesting, but also the strategies how the government motivates and helps the local community. Furthermore, they might be aware of the negative impacts of feeder road development on employment, and have already developed strategies to damp these effects and protect the local farmers against these negative developments.

In light of the above, this research will focus on the impact of feeder road development on creating employment opportunities, as there is a considered knowledge gap between the potential benefits and the actual impacts. As the above showed, there are lots of arguments to question

these sometimes too positive assumptions of potential benefits after road construction, as the opinions about the impacts are divided among different scholars and politicians.

This research will be accomplished in the Tigray region in Ethiopia, and therefore, the main research question is:

‘What is the impact of feeder road development on employment in the Tigray region of Ethiopia?’

To address this research question, the research is divided in 4 sub questions:

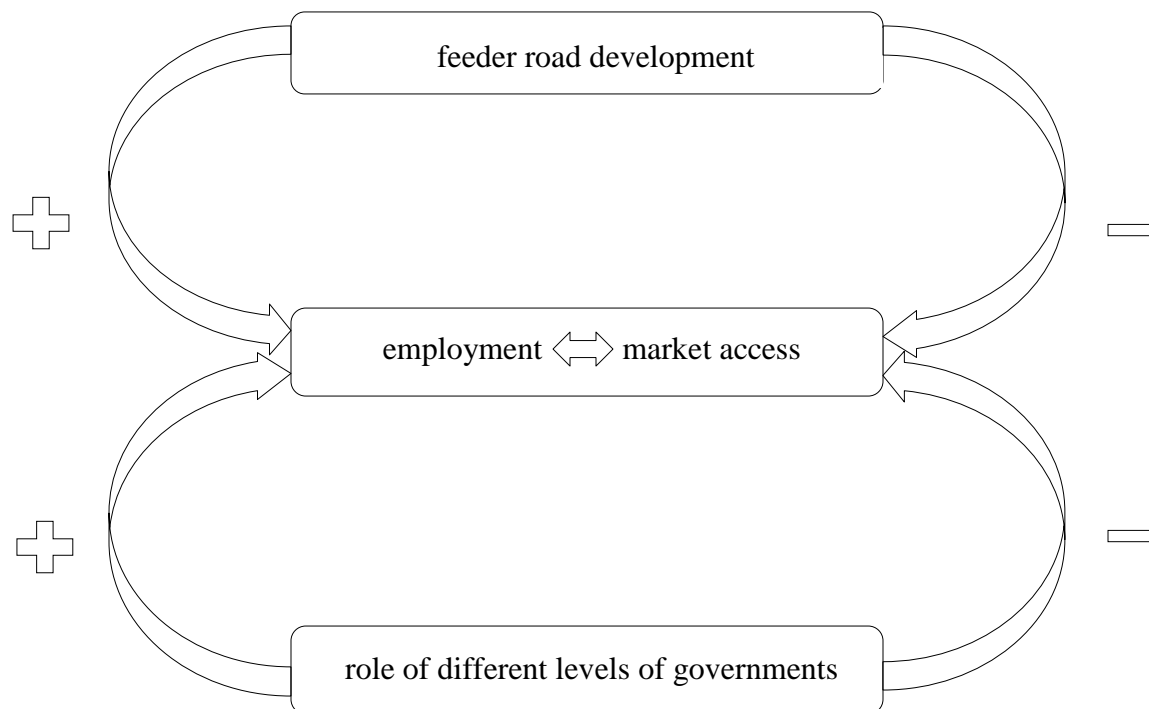
- 1. What kind of new employment opportunities are created through feeder road development?*
- 2. What are the impacts of a feeder road on market access?*
- 3. What are the relations between improved market access and employment?*
- 4. What is the role of different levels of governments in facilitating new employment opportunities through feeder road development?*

2 THEORETICAL FRAMEWORK

This chapter will provide an overview of literature with theories about the impacts of feeder road development. First, it will give an overview of the general possible impacts of feeder road development, discussing both the positive and negative impacts. Secondly, an overview of specific studies will be given on the impact of feeder road development on employment and the impact of feeder road development on market access. Thirdly, the possible relation between feeder road development, market access and employment will be discussed, also based on specific studies about these relations, including theories and studies about value chain analyses. Furthermore, the importance of different levels of governments will be discussed, followed by a conclusion with the main research objectives.

The simplified model (figure 1) includes the main concepts used in this study in order to clarify the focus.

Figure 1: Simplified model of the concepts used in the study



2.1 Theories about feeder road development

Many scholars have researched the impact of feeder road development on poverty reduction and economic growth, using impact evaluation techniques by investigating specific road projects (Mu and Dominique (2007); Stifel et al. (2012); and Wondemu and John (2010)). In general, the outcomes of these studies are significantly positive. According to Kandler et al. (2006), improved access to roads could play a considerable important role on economic growth in a country, especially for countries such as Ethiopia which has a low initial road density and is landlocked. The modernization theory argues that the development of infrastructure is beneficial to economic growth (Bryceson et al., 2008) as through market integration trade costs will be reduced and economic specialization across space promoted and thus the infrastructure will be a determining factor of growth (Burgess et al., 2010). According to Buys et al. (2006), the lack of infrastructure is often named as one of the main reason for underdevelopment within Africa. Demnge et al. (2014) is suggesting that this lack of infrastructure is deterioration to trade expansion, as overland transport is difficult and expensive, and therefore without good infrastructure this can result in isolated regions. This in turn acts as deterioration to industrialization, according to Shiferawa et al. (2012), since manufacturing firms, who are intensive users of infrastructure services, are at a comparative disadvantage (Demenge et al., 2014). In light of the above, it must become clear that according to these scholars, the quality and quantity of infrastructure is an important factor for economic growth and poverty reduction.

Bryceson et al. (2008) is suggesting that rural road development is likewise assumed to alleviate poverty that is associated with spatial isolation. This argument is based on the idea that roads can provide the rural farmers access to markets for agricultural in- and outputs and labor, and therefore in turn stimulate the agricultural production. Based on the observation that poverty is generally concentrated in areas where the market is weakly presented, it is argued by Rigg (2002) that a rural road allows the market to infiltrate peripheral areas and permits the local people to access jobs, services and higher standards of living in urban areas.

Besides the fact that roads can possibly improve access to different markets, they could, according to Porter (2003), possibly also increase access to social services like schools, healthcare and labor markets that have a direct impact on the socioeconomic well-being. Furthermore, development of rural roads could also lead to new employment opportunities and

could reduce the negative impacts of natural disasters and shocks (Ethiopian Roads Authority, 2012).

However, these positive assumptions and actual results of previous conducted research do not occur in all the researches. Hirshmann argued that investing in infrastructure was costly and the outcomes unpredictable (Edmonds, 1998). Some scholars demonstrate that there is a lack of evidence regarding the impacts of roads in terms of development (van de Walle, 2002). Wilson (2004) noticed that often the benefits related with road development are considered so obvious that 'they are just listed rather than discussed' (Wilson, 2004). As a result, according to deGrassi (2005), short and long-term impacts of infrastructure projects are not well understood mainly because of inadequate methods used for the research. Hook and Howe (2005) argue that the effects of roads tend to be complex and also very context specific, and therefore hard to presuppose a direct relationship between road development and economic growth, as the conditions under which road development will lead to positive economic growth outcome are not sufficiently specified. Furthermore, they warn for the possible risk that misinformed investments in infrastructure may hamper development and harm the local people (Hook and Howe, 2005). DeGrassi (2005) is suggesting that increasing connectivity can also have detrimental effects because of the increased competition and imports which can, likewise, harm certain socioeconomic groups locally.

Therefore, because of the above mentioned arguments, not only the link between road construction and economic growth can be questioned, but also the link between economic growth and poverty reduction, which roads are supposed to do as well but are, however, two different concepts: economic growth does not lead to poverty reduction per se and certainly not for all.

2.2 Feeder road development and market access

Provision of feeder roads could lead to improved access to markets, as discussed in previous sections. According to Jacoby (2000), strong links to markets for poor rural producers are assumed to be essential to increase (agricultural) production and generate economic growth in rural areas: when improving these links, it could boost the productivity and increase income. Better access by small producers to domestic and even international markets could lead to reliably selling more products, against (sometimes) higher prices. This in turn could encourages

farmers to invest in their own businesses and could increase the quantity, quality and diversity of the goods they produce (IFAD, 2011)

Markets are where producers buy their inputs and sell their products; and where consumers use their income from their activities, to buy their food requirements and consumption goods. All households in rural Ethiopia are both producers and consumers, and buyers and sellers. However, rural households that are unable to interact with these markets are prevented from adopting these diverse livelihood strategies. Rural poor people often say that one reason they cannot improve their living standards is because they face difficulties in accessing markets. It is therefore of great importance for all rural households to improve their access to markets, mainly through (feeder) road development (Growth and Transformation Plan, 2011).

In light of the above, it is possible that improved market access could create new employment opportunities. Dercon & Hoddinott (2005) used data from 15 villages in rural Ethiopia to explore the impact of links between rural households and local urban centers, and three core findings emerged: (i) rural households undertake a significant proportion of their economic transactions in the local market towns; (ii) access to market towns affects economic activity in rural areas – the more remote and isolated these households are, the less likely they are to buy or sell a variety of products; and (iii) improved access to market towns have positive effects on the welfare of the households. Mu & van de Walle (2011) also show significant impacts of feeder road improvements on the development of local markets.

However these outcomes, many critical questions can be added to the written literature here, as these outcomes may be very context specific and not true for all locations. Furthermore, considering point (ii), that access to market towns affects economic activity in rural areas and the more remote and isolated these households are, the less likely they are to buy or sell a variety of products, may not be only the cause of the remoteness fact. Thereby, the local people would need more than only a road, as transportation and other services would be essential in these cases as well. Furthermore, is it actually a positive impact that (i) rural households undertake a significant proportion of their economic transactions in the local market towns now, or might this harm the local community? This will also be another emphasis of the research, and will be further explained in the following section.

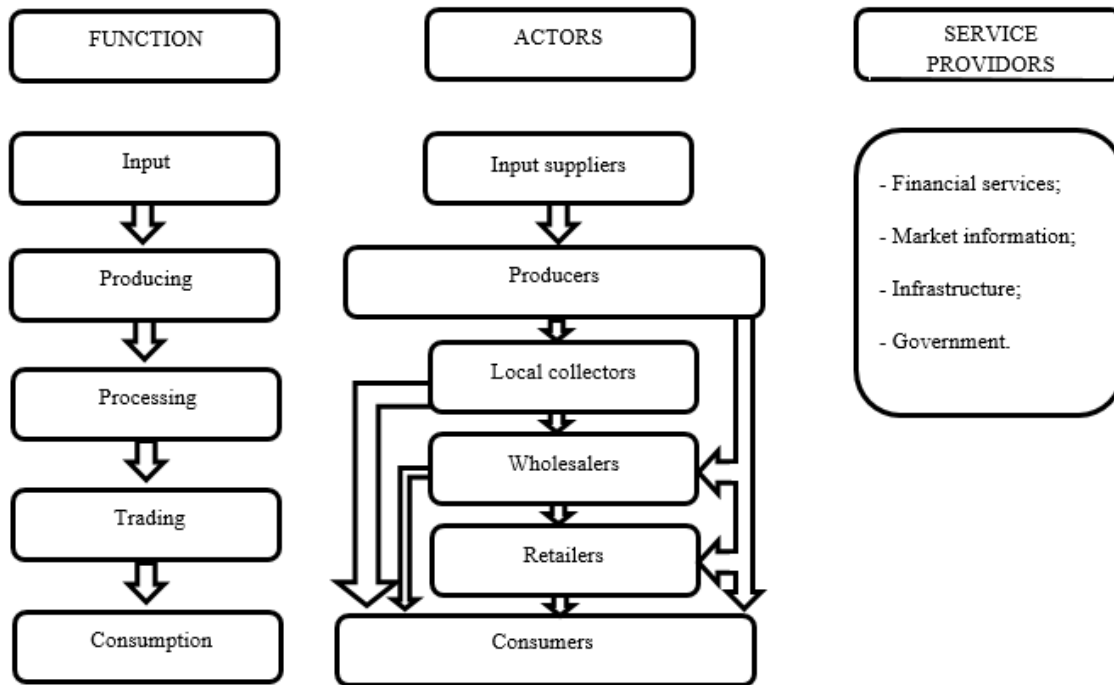
2.3 The relation between feeder road development, market access and employment

As already outlined in previous sections, this research will put extra emphasis on the relation between feeder road development, market access and employment. According to Rigg (2002), feeder road development could lead to increasing production, which could in turn lead to increasing demand for laborers and therefore more employment opportunities. However all these positive assumptions of feeder road development, it might also result into job losses. Therefore, critical questions can be set at these theories about road development and employment, such as: who is benefitting? Is it a positive development that people have improved market access, or does this rather result in job losses? Why do people migrate: is it because of the road they *have* to, because local jobs are replaced by jobs elsewhere as a result of improved market access, increased market competition and other factors? This research will try to answer these questions, by means of a value chain analyses.

A value chain encompasses the full range of activities and services required to bring a product or service from its production to its end use by the consumers (Kaplinsky, 1999). Furthermore, the value chain system consists of actors within the chain and service providers. The actors are those that directly handle the products and include input suppliers, producers, processors, traders and consumers. The service providers that support the value chain include financial services, market information, infrastructure (including transportation) and the government (figure 2).

As the figure shows, the different chains can be simple when producers directly sell to the consumers but long and complex when other actors play a role in buying, transporting and selling to the consumer. The complex chain, however, offers lots of choices for farmers and other producers. Therefore, it is important for producers to understand the players within the chain and the requirements. That could increase the bargaining power of the farmers in the chain, and might improve the price they get for their product. According to Mayoux (2003), this could in turn increase the comparative advantage of producers by increasing (i) the volume of the supply, (ii) the quality of the product and (iii) the consistency of supply.

Figure 2: Value chain system



Source: Kaplinsky, R. and M. Morris, 2001

Value chain actors and service providers can interact in different ways (figure 2). It is of great importance that these different interactions between value chain actors, the roles and responsibilities of these actors, the benefits derived from cooperation in the value chain and roles and responsibilities of the value chain supporters, are clearly understood. Kaplinsky & Morris (2001) suggest that with the knowledge of all the activities along the value chain of a certain good, effective and efficient agribusiness development could be possible, entailing all the positive results as win-win relations and maximum benefits for all the chain actors. However, as this research will try to assort, do all the actors within the chain benefit equally?

Besides the employment opportunities within a value chain that could be accompanied with road construction, new infrastructures could also offer the opportunity to upgrade within a certain chain and therefore create even more or new employment opportunities. According to Trienekens (2011), when producers try to upgrade within a value chain, four major constraints

can be identified: (i) market access restrictions, (ii) weak infrastructures, (iii) lacking resources and (iv) institutional voids.

The fast-growing middle and high income classes in many developing countries offer opportunities for developing country producers to operate in emerging national markets. Dolan and Humprey (2004) argue that this means that producers must gain better control over their production, trade and distribution in order to guarantee the quality and added value of their products and to operate in a cost-effective way. An important barrier for developing country producers in this respect can be the lack of infrastructural support. According to several scholars (De Janvry and Sadoulet (2005); Daviron & Gibbon (2002); Reardon & Barret (2000)), especially the small-scale producers are at a disadvantage because they have little capital to invest, use traditional techniques, depend on family labour and lack contact with market players. Rondot & Collion (2001) describe a multitude of cases where small farmers search for new forms of collaboration so as to increase their bargaining position in the value chain. From this literature overview we may assume that feeder road development can offer the small scale farmers the opportunity to participate at the market, or even offer the possibility to upgrade within the value chain and profit even more. On the other hand, road development could give traders also the chance to come to the villages, at the disadvantage of the farmers, as the traders could underpay the farmers and gaining more benefits themselves, and upgrading within that value chain is no longer possible.

Besides new actors in a value chain and the possibility to upgrade within a certain chain, as a result of road development and therefore stronger linkages with the market, there is also another way where road development could lead to improved market access and therefore new employment opportunities, e.g. the establishment of shops along the road or local market development. As the initial conditions in remote rural areas are often characterized by incomplete or even non-existing markets, most goods are simply not available in these areas given to weak infrastructures and high transportation costs. Advocates of rural road projects often point to their potential benefits in stimulating local market development (Gannon & Liu, 1997), which could in turn lead to employment opportunities.

Furthermore, improved access to labor markets could lead to increased daily, temporary or even permanent labor migration, because of improved access to nearby towns where more jobs might

be available. In general, in the spatial structure of the labor market, companies in urban places play an essential role in creating demand for work. In previous studies done by Chmieliński (2013), an important criterion he found for the possibility of extending the local labor market was the travel time to the place that offered jobs. The construction of the road had a positive effect on increasing the opportunities to seek employment in companies located further in relation to the place of residence. Furthermore, when there are still an insufficient number of jobs in a place of residence, the size of the local labor market will be determined by the state of the road infrastructure and the quality of public transport services (Chmieliński, 2013).

Accordingly these previous studies, it became easier to seek a job elsewhere since the road was constructed, which can be a positive outcome as more people can be employed this way. However, what does this mean for the community itself? Do people seek a job elsewhere, because they have better opportunities in a city nearby? Thereby, linked to the above discussion about job losses, are people forced to seek a job elsewhere and migrate daily, or even permanent, to another place because in the village itself are not enough employment opportunities anymore, after road construction? Or, as road construction might bring new employment opportunities, does this result is less daily labor migration? This research will study all the possible outcomes.

2.4 Role of different levels of governments

In all the above mentioned positive outcomes of employment opportunities created by road construction, the role of different levels of governments seems to be of great importance. However the positive impacts of road construction on employment found by e.g. Mu & van de Walle (2011), they suggest that feeder road projects could have a vastly larger impact on local market development if they are accompanied by policies aimed at improving certain characters or by reducing the barriers that reduce the impacts road improvements. As outlined before, road construction will not create employment opportunities itself, without any help or stimulating activities from different levels of government. With help and stimulating activities, one can think of providing loans and trainings, informing farmers and others about current market trends, providing other services such as regular transportation lines, etc. Moreover, Wondemu et al. (2012) argue that since one of the other key mechanisms at the market is the interaction through price changes, the institutions that support them will be very critical. This means that to maximize the impact of road projects, reforms that address the governmental constraints that

give rise to inefficient spatial integration of markets are required. Especially this outcome could be of high value for this research, as the role of the different levels of government is seen as important and thus worth to research, especially in light of the above.

Furthermore, as explained in the previous section, this research will emphasize the value chain analyses, where institutions are as well considered important in the business environment of value chains. In this matter, institutions include regulative institutions that encompass legislation and government regulations and policies that companies (in this research especially small-scale farming) can use and/or have to comply with (Scott, 1995). According to Mair and Marti (2008), developing countries are often characterized by institutional voids, defined as ‘situations where institutional arrangements that support markets are absent, weak or fail to accomplish the role expected from them’ (Mair and Marti, 2008). Government legislation, regulations and policies can constrain value chain upgrading, amongst other ways by setting trade barriers for production (e.g. materials, technology), by limiting the flow of information (both national and international), by imposing unfavorable taxes and by ignoring infrastructural investments that would benefit value chains. Besides, business practices and characteristics of business relationships can limit value adding and profit orientation in valued chains. For example, interpersonal and inter-company relationships may enhance the social capital of a company, but also imply relational constraints that limit a free flow of goods and information (Lu, 2007). Moreover, cognitive institutions may prevent innovations in products or processes and can limit a free flow of information and knowledge, mobility of labor, and relationships between communities.

‘A facilitating government that supports [...] and upgrading within a certain value chain is often considered conditional for development’ (Murphy, 2007). Therefore, the role of the different levels of government is expected to be of great importance in this research; not only in facilitating the creation of and providing employment, but also in regulating the market, since this study will also research the relation between the market and employment.

2.5 Concluding remarks

Road investment is the largest public investment in SSA, mainly because of the assumption that this is the main driver of productive employment and that economic opportunities will be created by better access that these roads will provide (Ethiopian Roads Authority, 2012). However, as

we have seen in previous discussed literature, road development can have a negative impact on productive employment as well. As discussed and mentioned by Degrossi (2005), increased connectivity could have detrimental effects through increased competition for workers or through increased imports. Roads can harm local people and lead to a decline in their livelihoods, just as they can also contribute to them: the effects of roads are very context specific (Rigg, 2002), and one must therefore be careful when researching this topic.

In light of the literature discussed in the previous sections, this research will try to examine the impact of feeder road development on creating employment opportunities, indirectly created through improved market access. Not much research is done about the link between improved market access and new employment opportunities. This research is based on basic theoretical arguments reviewed above. There is a considered knowledge gap about the links between employment and access to markets and jobs, but also about the negative impacts on employment that feeder road development could have. To implement the potential of creating employment opportunities by improved market access, the areas might need adequate policies, help and trainings, because they might face problems regarding creating employment through better market access. Therefore, this will be an important part of the research as well.

3 ETIOPIA

This chapter will give a short introduction and some background information about the geographical, demographic, economic and political context of Ethiopia and the Tigray region, where this research is conducted. Furthermore, the developmental challenges of the country will be discussed and the ‘Road Sector Development Program’ will be further elaborated, as this forms an important basis for this study.

3.1 Geographical and demographic context

Ethiopia, officially known as the Federal Democratic Republic of Ethiopia, is a country located in the east of Africa in the Horn of Africa and has a total area of approximately 1.100.000 square kilometers. The country is landlocked and bordered by Eritrea, Djibouti, Somalia, Kenya and Sudan (map 1). The capital city is Addis Ababa and is located in the center of the country. Ethiopia is with a population of almost 88 million the second most populous Sub-Saharan African country. More than 78 million people are living in rural areas, which are 81 percent of the total population (World Bank, 2015).

Map 1: Ethiopia in Africa



There is no common language in Ethiopia: there are ninety individual spoken languages. Amharic is recognized as the official nation's language of the Federal Government, while Oromo is another, even more spoken, national language. The same is true for Tigrinya, the language spoken in the Tigray region, where this study is implemented.

Within Ethiopia, the vast highland complex of mountains and is surrounded by the lowlands, semi-deserts and steppes. This great diversity of terrain determines wide variations in climate, vegetation, soils and settlement patterns. It is also an ecologically diverse country, with deserts along the eastern border and tropical forests in the south. The predominant climate type is tropical monsoon, with some topographic induced variations. The highlands that cover most of the country have a general cooler climate. In the lowlands in the east of the country, the climate is significantly drier and hotter.

One of the political autonomous administrative regions is Tigray, where this research collected its data. The Tigray region is located in the highlands in the north of Ethiopia (map 2). The capital of this region is Mekelle, where the partner University of this research is also located. The region has a population of over 4 million - who are living mostly in the rural areas (more than 80 percent); poverty rates are high – more than 30 percent has the lowest stand of living; major gender inequality – almost 70 percent adult literacy for men and only 30 percent for woman; agriculture is the main economic sector; and the predominantly language the Tigray people speak is Tigrinya (Ethiopian Government, 2015).

3.2 Economic context

Ethiopia experienced significant economic growth in recent years; however GDP per capita is still one of the lowest in the world (Ethiopian Roads Authority, 2012). The agricultural sector accounts for more than 40 percent of the GDP, 80 percent of the labor force and also 80 percent of exports, where coffee and maize are the main exported products (World Bank, 2015). Considered these remarkable numbers, other economic activities depend on the agriculture as well. The production is mainly by small scale farmers and enterprises, and productivity remains quite low (Ethiopian Roads Authority, 2012).

To stimulate economic growth, the Ethiopian Government is investing great amounts in the infrastructural sector. Ethiopia has almost 750 km of railway - which mainly consists of the

connection between Addis Ababa and Djibouti; 58 airports - with Ethiopian Airlines as one of the fastest-growing carriers in the industry and one of Africa's largest airlines; and almost a total of 50000 km of roads – both paved and gravel (Ethiopian Roads Authority, 2012).

Map 2: Federal Democratic Republic of Ethiopia



3.3 Political context

Ethiopia is a federal democratic republic, whereby the Prime Minister, currently Hailemariam Desalegn, is the head of the government. The previous government of Meles Zenawi promoted a policy of ethnic federalism, devolving significant powers to regional, ethnically based authorities. As a result of that, Ethiopia today has nine political autonomous administrative regions (map 2)– Tigray, Afar, Amara, Somali, Gambella, Benshangul Gumuz, Oromya, Dire Dawa and SNNP- that have the power to raise and spend their own revenues (Ethiopian Government, 2015). These regions are divided into districts, or in Ethiopia called *woreda*'s. These *woreda*'s of a region are governed by a *woreda* council, directly elected to represent each *kebele* or *tabia* in the *woreda*. A *tabia* or *kebele* is a rural village in Ethiopia, the smallest unit of local government in Ethiopia. They can be subdivided into *kushets*; the districts of the villages (Ethiopian Government, 2015).

3.4 Developmental challenges of Ethiopia

Unfortunately, Ethiopia still has lots of developmental challenges, e.g. (i) the large and growing population, (ii) the people living in poverty and (iii) huge development challenges in terms of education, health, water and sanitation and other basic needs. One of the reasons for these challenges is the difficult climate and topography, as it challenged the country with droughts, water shortages, etc. However, Ethiopia is well on track and statistics show remarkable improvements: the life expectancy in years at birth is 63.6 (World bank, 2013), which is 7 more years compared to the life expectancy in 2005 and is 4 years longer compared to the average in SSA. The infant mortality rate is decreasing significant: in 2005 the mortality rate per 1000 infants was 69.8; in 2013 this decreased to 44.4, where the average in SSA is still 61.0 (World Bank, 2015). Furthermore, increasing numbers of the Ethiopian population now have access to improved sanitation facilities: 23.6 percent of the total population in 2012. However the increasing numbers in having access to improved sanitation facilities, the percentage is still very low, also compared to other SSA standards of an average of 30 percent (World Bank, 2015).

Under the regime of the previous Prime Minister Meles Zenawi, Ethiopia has adopted a political model of a 'developmental state' to stimulate progress and to turn their visions into actual practice through five-year plans. The first plan was the Growth and Transformation Plan (2010-2015): it identified a number of key areas to focus on in order to achieve development and to stimulate growth. In this program, the key areas are the access to finance, agricultural productivity and human capital. Furthermore, in addition to the developmental challenges, the plan also identified some political challenges, which included the potential for instability. Four of the political autonomous administrative regions have considerably less resources, lower standards of living and fewer skills to implement these development programs. Therefore, spreading the benefits of growth and development carefully and equally was identified as another key challenge to guarantee peace and stability in Ethiopia (Growth and Transformation Plan, 2011).

The long-term aim is to end poverty and to become a middle-income country, something for which Ethiopia is well on track. In order to make this happen, Ethiopia believes in developing the road sector, what is explained in the Road Sector Development Program.

3.5 Road Sector Development Program

Developing the road sector by boosting the size and quality of the road networks is one the main strategic pillars of the Growth and Transformation Plan 2010-2015 for Ethiopia. The performance of the road sector plays a vital role in the growing economy of the country and is therefore considered as really important and priority policy. In 1997, the Ethiopian Government developed the Road Sector Development Program (RSDP), to increase quality and quantity of the road network. After implementing several phases of the RSDP in the past years, many goals are accomplished. The total road network almost doubled from 26550 km in 1997 to almost 50000 km in 2011 (Ethiopian Roads Authority, 2013).

There remains a critical need to provide rural communities with permanent accessibility to social and government services, economic and business services, and better opportunities for employment and generating income. Because of these mentioned reasons, the government has developed a sub-program of the RSDP: the Universal Rural Road Access Program (URRAP). This program is especially developed to improve the rural accessibility (Ethiopian Roads Authority, 2012). URRAP will connect all kebele's and tabia's by roads of a standard that provides all-weather, year round access, meets the needs of the locals are maintainable. The URRAP is designed to improve rural livelihoods by reducing their isolation and to provide year round access to their markets and other social services. The Ethiopian Roads Authority wants to expand and improve the feeder road network by: (i) constructing and rehabilitating more than 70.00 km of feeder roads to a maintainable condition; (ii) introducing sustainable road maintenance regimes on improved road networks; (iii) developing and strengthening small and medium scale private enterprises (SMEs) working in support of the road sector; (iv) creating massive employment opportunities for the community and for middle-level professionals; and (v) instituting and strengthening an appropriate institutional set-up at Woreda level that can manage the feeder roads under its jurisdiction. URRAP is an employment intensive program and

will therefore use labor based actions to build and in the long term maintain the roads, and so using employment as first step out of poverty.

The feeder roads in Ethiopia consist both of URRAP and non-URRAP roads. In general, these are two different programs and are URRAP roads recently constructed and non-URRAP roads are constructed approximately 15 years ago. Thereby, since maintenance of the road is not the same in each area, differences in the quality of the roads were also present. Furthermore, all the URRAP roads are constructed and therefore connected the tabia centers with the main road, which is however an assumption the Ethiopian Roads Authority (ERA) holds, and is the ERA currently executing a new program to connect a tabia with another tabia (Ethiopian Roads Authority, 2015).

This study focused on both URRAP and non-URRAP roads in the first part of the research, and later focused on only a URRAP road in the follow-up interviews. This will be further explained in the next section: the research outline.

4 RESEARCH OUTLINE

This chapter presents the outline of the research as developed for the primary data collection in Ethiopia. The first section will discuss the research objectives and the research questions. To make sure that the concepts used in this research are clear, some of the main concepts are further defined in the operationalization. Third the conceptual model and the related concepts for this research will be presented. Fourth, the research methodology will be discussed and lastly the limitations and challenges this research faced will be presented.

4.1 Research objectives and questions

The research objective of this thesis is to gain a deeper understanding of the relations between feeder road development and employment opportunities in the Tigray region in Ethiopia, with a special emphasis on improved market access. Therefore, the main research question of this research is:

‘What is the impact of feeder road development on employment in the Tigray region of Ethiopia?’

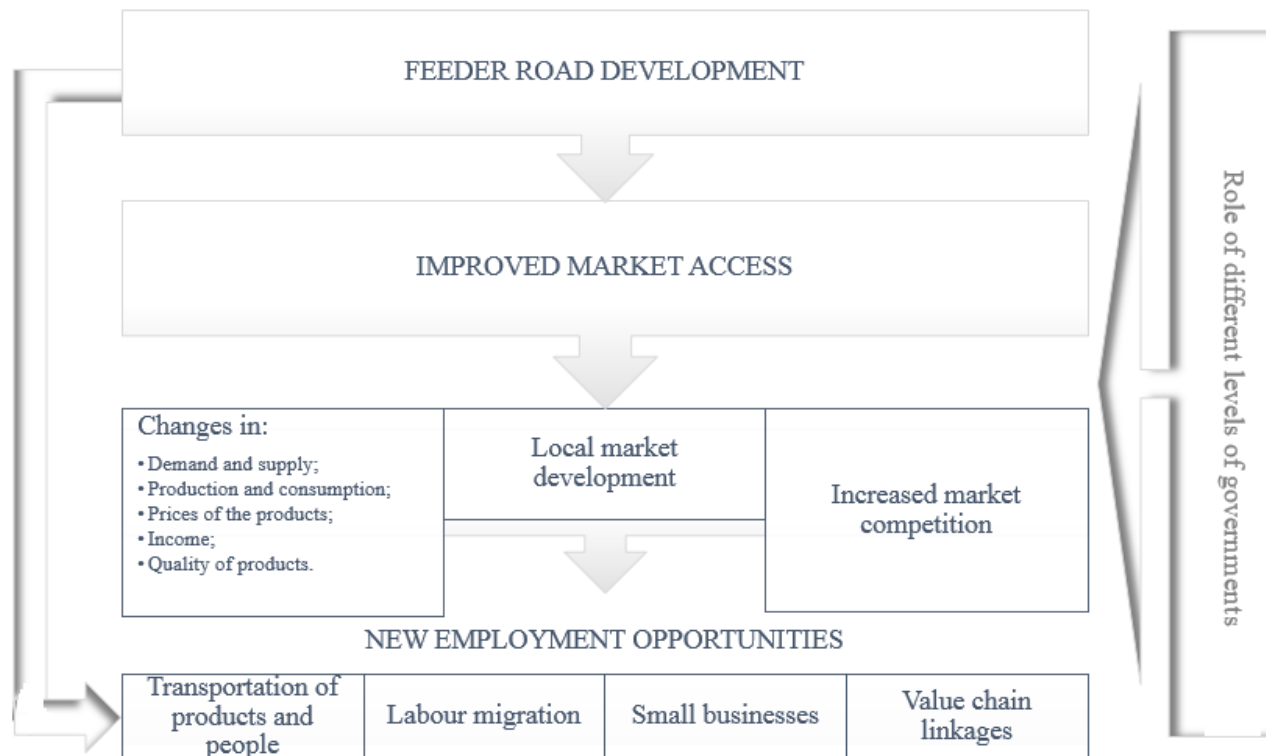
To address this research question, the research is divided in 4 sub questions:

1. *What kind of new employment opportunities are created through feeder road development?*
2. *What are the impacts of a feeder road on market access?*
3. *What are the relations between improved market access and employment?*
4. *What is the role of different levels of governments in facilitating new employment opportunities through feeder road development?*

4.2 Conceptual model

The conceptual model presented in below (figure 3) visualizes the main concepts that are central to this research. The model illustrates the relationships between the different concepts, in order to create a better understanding of this research topic. The model is comprised of several links that are fitted together in the model and shows how feeder road development could lead to possible employment opportunities.

Figure 3: Conceptual model



As already explained in the previous chapters, feeder road development could create new employment opportunities. These new employment opportunities can be possibly created in two ways. The first way (i) is creating new opportunities through feeder road development only: as the figure shows, constructing a road could bring for example new transportation possibilities, which in turn leads to new employment opportunities as well. Thereby, a road could offer the possibility to migrate for a daily, temporary or permanent job.

The second way (ii) of how feeder road development could create new employment opportunities is through improved market access. The construction of a road could improve people's access to markets, as it becomes easier to access them. This could lead to changes in e.g. the demand and supply, and production and consumption, what could lead to changes in income, etc. Furthermore, the improved access to markets could create new employment like the establishment of a local market or other small businesses, as traders or other people can bring products from other places to the local market or people can buy products at other markets and sell these at their own small shops locally. Improved market access could also lead to increased

market competition, entailing all its consequences. As all the people have improved market access because of the road, more people and more products are assumed to arrive the market every day, resulting in more and divers products, but also more competition among the producers and traders, resulting in lower prices for both the producers and consumers. In line with the above mentioned relations, value chain linkages are also assumed to be related to feeder road development, market access and employment opportunities. These value chain linkages can have, however, a negative impact on employment as well.

In both cases, the role of the government is considered to play a very important role in facilitating these new employment opportunities, as they can have potentially great influences on the outcomes and are therefore included in the research and model as well.

4.3 Operationalization

Several concepts that form the basis of this research are defined in previous sections already (e.g. feeder road development, etc.). However, some of the concepts used are not defined yet, and in order to be able to use these other concepts also it is necessary to identify them. In addition, after having defined the different concepts, it is possible to measure and analyze the data that was collected.

As *markets* are one of the main objectives of this study, it is of great importance to define markets and what those markets include in this research. The definition of markets that fits the best in this context is: ‘an actual or nominal place where forces of demand and supply operate, and where buyers and sellers interact directly or through intermediaries to trade goods, services, or contracts or instruments, for money or barter’ (Business Dictionary, 2015). In this study, markets of goods and services include (i) the market in a nearby town, where people can buy vegetables, fruits, spices, etc., but also clothes, soap, and other household goods; (ii) that same market where farmers and others can sell their products; (iii) services along to value chain that can help the farmers selling their produce, like transport services, middlemen and wholesalers, and retailers at the market; (iv) markets where farmers get their inputs for the farmland, like (improved) seeds, etc.; and (v) labor markets in the same or other villages, regions or even countries.

Furthermore, as the value chain analyses will comprise a great part of this research, is it important to have all the concepts related to this clear. In this study, a *value chain* encompasses the full range of activities and services required to bring a product or service from its production to its end use by the consumers (Kaplinsky, 1999). Besides the definition of the concept value chain, it is necessary to define all the actors of the studied chains: (i) *input suppliers* - the suppliers who deliver, among others, seeds to the farmers; (ii) *producers* – farmers; (iii) *traders* – including (a) *retailers* (persons that sells goods to the consumer), (b) *wholesalers* (sell the goods to another business) and (c) *middlemen* (acts like an intermediary); and (iv) *consumers* – all the consumers at markets in different places, buying household goods (e.g. vegetables, clothes, etc.).

4.4 Research methodology

This part will outline the research methodology as well as an explanation of the research population, the research area and the methods used to collect the data are presented as well.

Methods used to collect data:

This research used qualitative research methods to create an in-depth understanding of the mentioned relationships. In order to do so, it used an explorative approach with observations, single issue oral testimonies (SIOT) and semi-structured in-depth interviews (appendices). Furthermore, policy documents and data reports were reviewed and analyzed (table1). In order to collect useful data for the value chain analyses, it was important to use the best fitting approach which depends on the research question. Since the aim of the value chain analyses was to address the potential negative impact of improved market access, e.g. the role of a retailer, the distribution of the benefits of actors in a certain chain needed to be identified. Through the analysis of who benefits, where and how, one can determine who benefits from participation in the chain and also which actors could benefit from increased support or organizations (Kaplinsky and Morris, 2001).

In order to select the right people, opportunity sampling and snowball sample techniques were used. This was mostly done by the translator, who helped with translating the interviews and arranging them, by approaching potential respondents, asking contact details and explaining the need and purpose of this research.

Table 1: Measurement indicators of the sub-questions and methods used to collect the data.

Sub-questions	Measurement indicators	Collected data with:
1. What kind of new employment opportunities are created through feeder road development?	Basic characteristics of feeder road users: who is using the road (age, gender, occupation, etc.) and why (work, market visits), employment (what, since when, where).	Singe Issue Oral Testimonies (SIOT); semi-structured interviews (in combination with other sub-questions).; observations.
2. What are the impacts of a feeder road on market access?	Changes in demand/supply, production/consumption, prices and income; increased diversity of products; local market development; increased competition; trade.	Singe Issue Oral Testimonies (SIOT); semi-structured interviews (in combination with other sub-questions).
3. What are the relations between improved market access and employment?	Positive and negative effects: opportunities/benefits/losses for who, where, what; changes in consumption and production); labor migration; role of retailers, wholesalers, etc.	Semi-structured interviews (in combination with other sub-questions); in-depth semi-structured interviews with actors of value chain and experts.
4. What is the role of different levels of governments in facilitating new employment opportunities through feeder road development?	Role of different levels of governments; employment opportunities created by the government; local policies; policy gaps.	Semi-structured interviews (in combination with other sub-questions), in-depth semi-structured interviews with policy makers; analysing policy documents and data reports.

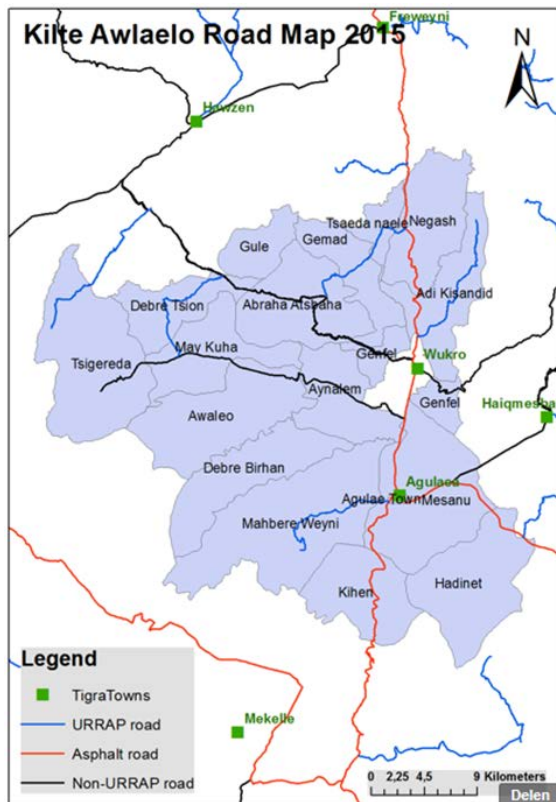
The research area

Since this research will be part of the 3 year research program ‘Ethiopia: Feeder road development for inclusive productive employment’ undertaken in the Tigray region, this research collected data its data in that area as well. The official research team visited several potential research sites in the two preselected areas and made a selection based on the age of the roads, the geography (both low and high land), the agricultural practices (both farming and pastoralist economic activities), their similarity of roads in distances to towns and the selected roads are either implemented through URRAP (2010) or earlier through other programs.

Using these criteria, four final roads were selected within two suitable areas:

1. Kilde Awlaelo (map 3):
 - a. Adiksandid (URRAP);
 - b. May Quiha.
2. Raya Azebo (map 4):
 - a. Hade Alga;
 - b. Were Abaye (URRAP).

Map 3: Kilde Awlaelo road map 2015



Map 4: Raya Azebo road map 2015



During the first and second phase of the research the focus was on all four areas and collected data there as well. The third and last phase of the research was only conducted in Adiksandid. Since the objective of this research was to gain a deeper understanding of the relations between feeder road development and employment opportunities, with a special emphasis on improved market access, it was not necessary to include all four roads in this research. Besides, considering time and budget constrains it was not possible to include all the roads. Therefore, this research focused only on the tabia Adiksandid, including both laelai (upper) and tahtai (lower) Adiksandid. The decision to do the follow-up interviews only in this tabia was based on the outcomes of the previous conducted interviews during the second explorative phase (appendix 1) and because of the accessibility of the village for doing research. Furthermore, this feeder road through Adiksandid is recently constructed under URRAP and therefore an interesting sight to measure the changes and impacts of the road. Therewithal, the area just got separated into two villages entailing all the consequences, and offered the possibility to do a comparative study between the two villages to see if the impacts were different.

The research population

The research population consists of different members of the households in the four selected tabia's Adiksandid, May Quiha, Hade Alga and Were Abaye. The research population includes young adults from age 18, both male and female (table 2). Totally, 45 interviews were conducted in this first part of the research.

The same is true for the follow-up interviews in Adiksandid only: the research population covered different kinds of professions and besides the households, all the actors, service providers and support organizations of the value chain are included. Furthermore, different policy makers were interviewed to cover the policy environment. In total 49 interviews were conducted during this phase, with households of Adiksandid (31 respondents) and consumers and retailers at the market in Wukro, government officials and experts of other organisations (18 respondents) (table 3).

In this report, the names of the respondents will not be mentioned, as all the respondents are interviewed anonymously (appendix 11). This decision was made to have beneficial impacts on the research outcomes, as they were more willing to speak openly if their names were not noted.

Table 2: Respondents of the single issue oral testimonies (SIOT)

	Male	Female	Total
Adiksandid	6	7	13
May Quiha	9	2	11
Ware Abaya	6	4	10
Hada Alga	7	4	11
Total	28	17	45

Table 3: Respondents of the follow-up interviews in Adiksandid & Wukro

	Male	Female	Total
<i>tahtai Adiksandid</i>			
Households	6	7	13
Tabia administration - secretary	2		2
Cooperative association - chairman	1		1
Youngster association - chairman	1		1
Woreda government expert	1		1
Shop owner	1		1
Total tahtai Adiksandid			19
<i>laelai Adiksandid</i>			
Households	10	8	18
Rural development agent	1		1
Tabia administration - secretary	1		1
Farmer association - chairman	1		1
Total laelai Adiksandid			21
<i>Wukro</i>			
Woreda government official - Head of town development and trade industry	1		1
Agricultural office - market researcher		1	1
Agricultural office - agricultural expert	1		1
Market - retailers	2	1	3
UNION - chairman	1		1
Government official - department road construction and transport	1		1
Loan & saving association - secretary		1	1
Total Wukro			9
Total			49

4.5 Research limitations

During the process of obtaining data and conducting the research some implications occurred and are therefore worth mentioning. Some of the findings presented in the following chapters, should be interpreted with some caution for several reasons.

1) Misunderstandings and biased outcomes

As the majority of the research population did not speak English, a translator was necessary. This resulted occasionally in misunderstandings and sometimes even biased outcomes. However, in general both translators were very reliable. Furthermore, while interviewing the respondents, different stories were told and was it hard to tell who of them was telling the truth and who did not. Most relevant to mention here is that people were not always confident enough to openly speak; afraid of the government that might come after them. This resulted in overall positive outcomes of the impacts of the road. Because of these biased outcomes, we decided not take the names of the respondents anymore and let them be completely anonymous.

2) Follow-up interviews Adiksandid only

Another limitation of this research is the inclusion of only one tabia, while the wider research program includes four research areas. All the areas are different (e.g. land use, geography, etc.) and therefore more or even different impacts of the road may be found. Therefore, it is difficult to generalize the outcomes because, as this study will show, the impacts appear to be very context specific. As this study will show the impacts of feeder road development on employment, one should keep in mind that other impacts may be found in other areas. Furthermore, as this feeder road is constructed under URRAP, which means recently, some impacts may be not there yet, whereas a study in May Quiha, where the road is constructed many years ago, might show other results, as it might need more time to develop employment and other opportunities because of the road.

5 FIRST OBSERVATIONS

Since this research will be part of the 3 year research program ‘Ethiopia: Feeder road development for inclusive productive employment’ undertaken in the Tigray region, this study collected its data in this region as well. Beforehand, two woreda’s were already selected: Kilte Awlaelo and Raya Azebo. However, the roads for the research were not yet selected and in order to select the most interesting roads, research and observation was necessary. Therefore, the official research team had to visit several potential research sites in the two areas, which was a great opportunity to experience the field and to collect some first observations.

Four sites were visited in the woreda Kilte Awlaelo (map 3): (i) Adiksandid (URRAP road), (ii) May Quiha (non-URRAP road), (iii) Mahbere Weyni (URRAP road) and (iv) Debre Birhan (non-URRAP road). In Adiksandid (i), the first part of the road is much better accessible than the second part: there are differences between tahtai, the lower part of the tabia, and laelai, the upper part of the tabia. Another observation that seemed quite common in this tabia, were the stone collectors. These are new employment opportunities created by the construction of the road. Furthermore, a ‘service center’ is located between laelai and tahtai, where people can get inputs for their farmland and exchange some goods once a week. May Quiha (ii) has, in contrast with Adiksandid, a small town center with some small businesses along the road, which is a common thing here: many container shops were visible selling water, candy and other little things. These businesses just got started and get their products from Wukro. According to the local people, this is a great success. Trading is common in May Quiha since the road construction; there is a local market on Tuesday to exchange products. The road in May Quiha is not of good quality, and the tabia itself is far located from the main road and Wukro. There are lots of differences in the tabia itself: still many remote kushets and are far located from the feeder road. Transport to and from Wukro to May Quiha is affordable for everyone and no one is excluded, although some prefer walking and spend that money elsewhere and for other or better purposes. However the fact that all the people have access to these means of transportation, some kushets and therefore people are too far located from the ‘bus station’, and therefore have to cross long distances first. From this point of view, it seems that people do not have equal access to these transport services. Some people also use the road to work in Wukro e.g. for three days and then they return to May Quiha again. Mahbere Weyni (iii) and Debre Birhan (iv) are both scattered areas and far located from

Wukro. It is a wealthy area with lots of irrigation and therefore green and fertile land. However, the road is of bad quality and needs to be upgraded to utilize this potential.

In Raya Azebo two tabia's were visited (map 4): (i) Were Abaye (URRAP road) and (ii) Bagea Delwo (URRAP road). Compared to Kilte Awlalo, Raya Azebo seemed more populated, flatter, greener and therefore seemed to have more agricultural opportunities. Mango, lemon, orange, coffee and chad trees were there, which could be all considered for value chain analyses. Furthermore, employment opportunities e.g. stone collectors were also seen here. Because the area was rather flat, transportation was easy; even a 'bajaj' (local transportation) could access the tabia. The road is only 2 years old (upgraded 2 years ago under URRAP) but needs maintenance: it is not of good quality, according to the inhabitants. Within the URRAP program they are supposed to maintain the road themselves. However, they did not get any instructions about maintaining the road, what seems to be a lack of adequate policies or policy implications. Transport is considered to be a good outcome of feeder road development here, although it could even be better if the road further develops and improves. In Bagea Delwo (ii), 'a positive impact of the road is that competition between farmers has increased, which is good because it motivates them to work even harder' (Participant A, 11-02-2015), according to a local farmer. This farmer is aware of the increased market competition, although he considers it as a positive influence of the road, which needed further and in-depth research to discuss this and therefore brought new ideas to this study. Laborers are coming from elsewhere to this place, which increased private farming. Also in this case, it is debatable whether this is a positive or negative outcome of the road and therefore more in-depth research is needed.

These first observations were very relevant for this research. One of the aims of these initial observations was to see different tabia's and to see what the potential impacts could be and to explore possible next steps for the follow-up parts of the research. Because it was a relative new area, all the sights needed to be seen in order to make a selection of the roads; for the 3 year research program but also for this study in particular. Furthermore, as the following chapters will show, this part of the research was also used to select the road in Adiksandid only, as these observations provided basic background information and the relevance of that place for this research.

6 PEOPLE'S USE OF THE FEEDER ROAD

Before starting analysing and discussing the actual objectives of this thesis, it is important to know who the users of the feeder roads are and for what purposes they use the road. This because there might be underuse of the road or only relevant for certain groups e.g. man, woman, youngster, etc. In order to find out, single issue oral testimony (SIOT) methods were used and therefore an explorative approach (appendix 1). This way narratives like employment and market visits were filtered out and therefore appeared to be relevant for this research.

This part the research was conducted in all four selected tabia's, in order to present a general overview of people's use of the feeder road. With the SIOT approach, 45 interviews were conducted (table 2). De four roads can be divided into two URRAP roads and two non-URRAP roads and therefore differ in age, quality and impacts. For the older non-URRAP roads, it was hard to estimate what the direct impacts of the road construction were, since the road was constructed a long time ago. The URRAP road in Adiksandid was upgraded 4-5 years ago; the other URRAP road in Ware Abaya is also relatively young: approximately upgraded 2 yours ago. The two other non-URRAP roads are much older: both the roads to May Quiha and Hada Alga were constructed 20 years ago. Even though some land of farmers was taken for the road construction, people are generally positive about the road: 'we are very happy with the road, even though we lost a little land (Participant B, 19-02-2015),' 'the road is necessary to bring products to the market(Participant C, 23-02-2015)'and furthermore 'all the changes depend directly up on the road; I did not know other places before; it is only because of the road I now go there(Participant D, 27-02-2015).'

6.1 Transportation, employment and market visits

The roads through the four selected tabia's are used by different people for different purposes: students use the road to go to school, either in the village itself for primary education or in the closest town nearby for secondary education; families and friends travel along the road for visits and entertainment in other places; and pregnant woman can be transported by ambulance to give birth at the hospital. Besides these reasons, other employment and market related reasons where

mentioned and seemed to be the most common and important reasons to use the road. One of the narratives that is essential considering these two, is transportation.

Transportation

A huge impact and development that came along with the construction of the road are the new transportation possibilities. Before, people transported their products themselves or used a donkey; it was impossible for vehicles to come to the tabia. Nowadays, people have access to other transportation like bajaj, horse cars, cars, trucks, (mini)buses and motorcycles. Again, there are some differences between the four tabia's and the most influential factors are the distances from the main road and the quality of the feeder road. Also, there are differences within the tabia, because of the same mentioned factors: 'we are suffering from the topography in this area; we have to carry the entire produce on our shoulders from our house to the horse car at the feeder road, since the horse car cannot come to our house: access is difficult (Participant B, 19-02-2015)' and 'there are no vehicles available to take me to upper Adiksandid from our home; there are only possibilities from Wukro (Participant E, 19-02-2015)'. Thereby, there are also inequalities in the use of transportation since not everyone can afford using it. In general, the development of transportation in the areas saves time and energy, which is also good for economic benefits: people do not lose produce anymore because of decreased travel time and this in turn also influences the quality of the products: 'all the changes because of the road are important, but the most important change for me is the bajaj: before, products were not of good quality because it took a long time to bring the products to the markets and back home. Nowadays, because of the decreased travel time, products are of much better quality (Participant F, 28-02-2015)'.

This all is an effect of better transportation. Furthermore, in order to transport the products, new employment opportunities arose for owners and drivers of all kinds of vehicles and 'support drivers' that helps the driver collecting the money. Not only to transport the products, but also people can use a (mini)bus, bajaj or car to go to other places, which creates some employment opportunities as well.

Employment

In general, the most common profession in all the four tabia's was farming, although there were some differences in products, use of irrigation, owning land and size of land. For the farmers, the construction of the road has a major impact (which is also strongly linked to the market, see next narrative 'market'): 'they are now able to transport their products easier, faster, and more efficient which all results in better quality and better prices (Participant G, 28-02-2015)'. Essential in this case is the role of a trader, which is also a result and new employment opportunity caused by the road: 'since a few years, traders are coming to the tabia's to deliver inputs for the farmers, to sell products at the local developed markets and to buy the products of farmers (Participant H, 23-02-2015)'.

Because of the road, people are able to get goods from the woreda towns and sell these products locally in their shop. Besides these shops selling products, there are also some 'cafes' established also made possible because of the improved access and get beverages somewhere else. A farmer about his wife: 'she has her own café since the construction of the road. The road made is possible for input suppliers to bring her inputs like soft drinks and beer from other places and at the same time bring other people in that community also inputs (Participant I, 28-02-2015)'. However, these two developments are not present in high amounts and differ per region: e.g. in Adiksandid only one shop was present in between tahtai and laelai and some at the beginning of the road, while in the three other tabia's these shops were more common. This could be the result of location, access, transportation, distance, age of road, etc., but needed further research in order to draw conclusions about this.

Many people are enrolled in the Safety Net Program, a program developed and organised by the government, and participate in development activities such as water and soil conservation and planting and re-planting. The participants do not get their salary in money but get paid in kind: 3kg of wheat/grain per person of household. At the end of the month, they can collect this in the woreda town, like Wukro or Mehoni. This also results in employment opportunities for others, since some people who own a car can collect the payments for the community and they can share the transportation costs.

Another possibility that was already present before but increased because of the road construction is labour migration with making a distinction between daily, temporary or permanent and on a national or international scale. The road can play a providing and maybe stimulating role in this, however the main reason to migrate is because there are not enough employment opportunities besides farming after graduation, especially for youngsters, according to the respondents: ‘youngsters migrate to Saudi Arabic for employment and other economic opportunities because there are not much employment opportunities besides farming in the local communities (Participant J, 27-02-2015)’. Furthermore, ‘life is much better there, because of the employment opportunities; even though many people died out there and while life is better in Ethiopia. However, there are just no job opportunities here, so that is why we, even though the bad quality of life there, prefer being in Saudi Arabic (Participant J, 27-02-2015)’.

Almost all the respondents mentioned that because of the road people now have access to education and healthcare: schools and Clinique’s are constructed and present in all four tabia’s. This in turn created new employment opportunities as well, not only for the local community but also for others: teachers, doctors and nurses are coming from other places or locally to work in the tabia at schools or hospitals.

Besides all the above mentioned (new) employment opportunities directly and indirectly created through feeder road development, there are also some other jobs present but were not that common or seen a lot: listro’s (shoe cleaners) along road; hairdresser - who get their inputs from the woreda town; and police officers to secure safety that were not present before road construction.

Market visits

While asking the question ‘what are the influences of the road?’, almost all the respondents mentioned, besides access to health care and use ambulance service, that they now have easy and pure access to the market. The people go to the market especially on market days, which differ per area, to sell their products and buy other products they do not produce themselves, inputs for their farmlands or soap, clothes, etc. Because of the road and the improved market access, people have access to a wider variety and more diverse assortment of all kind of products.

An important and remarkable impact of the road is the local market development in Hada Alga and May Quiha. The local farmers can sell their produce here and save transportation costs: ‘my husband sells his products locally at the market, because if he would go to another market in a nearby woreda town, then he would lose transport costs and time, so to minimize his costs he sells the products at the local market (Participant K, 27-02-2015)’. The opinions about this local market differ: ‘the products at the local market are expensive (Participant L, 24-02-2015)’, because traders from other places come to the tabia with clothes, shoes, etc., and sell these for higher prices because of transportation costs and travel time, but also because the traders know that these products (and other goods like sugar) are not locally produced so people are willing and forced to pay these higher prices.

Not only other people from outside come to this market to sell other products that are not locally available (e.g. clothes) against high prices, but also to buy the whole produce of the farmers. Again, the role of the trader is critical and one must ask the question who is benefitting the most. On the one hand, ‘if traders are coming to the local market, they pay the farmers a lower price but the farmers save time and transportation costs this way (Participant M, 23-02-2015)’; but on the other hand, these traders might ‘underpay’ the farmers and sell the products against a much higher price at the market of the woreda town. More research was needed to see what the role of these traders is exactly; what is their role, are they exploiting the farmers and asking too high prices at the local markets, what is the influence of the road is in this particular, is it actually true that it is a win-win situation for both the farmer, trader and producer, etc. These first explorative SIOTs helped in formulating these questions.

At the market, both at local markets and the markets in the woreda towns, value chain linkages arose: because of the improved market access, people have improved access to more inputs, which can influence the production. Also, because people can sell their products much easier at the market because of the road, the demand for their products increased. For consumers this could have positive impacts as well; since they are able to buy different kind of products. Another imported impact of road construction and improved market access related to value chain linkages is the development of the retailers, middlemen and wholesalers, which are in turn also new created employment opportunity. Whether this is a positive development is discussable, and therefore one the reasons why a value chain analyses might also be interesting for this research.

While roads are being constructed and bring more and more people and products to the markets in woreda towns, this leads to increased market competition, with all the consequences. A positive impact of the road that aligns with the previous mentioned negative impact is that producers are able to crosscheck the prices at different markets, and therefore damp the negative impact of increased competition and can sell their produce at the market with the best prices. This all sounds again too positive, and therefore this will be elaborated in the following section because this was not true for everyone and all the areas.

6.2 Concluding remarks

In light of the above, we can conclude that the road is considered to be very important for the communities, especially because ‘everything is related to the market’: not only to buy and sell products, but also for new employment. The extent, to which the road also resulted in new employment opportunities, will be further discussed in the following sections based on the outcomes of the follow-up interviews conducted in the tabia Adiksandid only. As already mentioned in the research limitations and seen from the previous outcomes; all the findings might seem too positive. Again, also showed during these interviews, the respondents were really happy with the road construction because it indirectly increased their production and their income; it saves time and energy; better prices at the market and the quality of the products improved. However, as the following chapters will discuss, not all these impacts of the road turned out to be equal for all the people and furthermore, the impact of the road also showed some negative results.

7 FEEDER ROAD DEVELOPMENT AND EMPLOYMENT

Based on the findings from the previous data collections, further focus was developed to gain a deeper understanding on the impact of roads on employment in Adiksandid. This part of the research provides knowledge about the impact of the road on employment opportunities and market access in general; the relations between improved market access and employment; and what the role of the government in this is. Furthermore a value chain analyses was developed in order to show the relation between improved market access and employment (appendix 2-10). In total 49 interviews were conducted during this part of the research, with the households of Adiksandid (31 respondents) and all the actors within value chains, government officials and experts of other organisations (18 respondents) (table 3). In the following 4 chapters, these topics and relations will be discussed.

This section will focus on the new employment opportunities created through feeder road development, followed by a discussion and review of the mentioned literature about feeder roads and employment. Furthermore, at the end of this section a provisional conclusion will be presented, as the following chapters will present also further information that resulted in new employments as well, although created through improved market access.

7.1 New employment opportunities

The road through Adiksandid was upgraded 4-5 years ago under URRAP. Not everyone in Adiksandid has equal access to the road. Because of the differences in topography between tahtai and laelai, it is still difficult for some parts to access the road and gain from the benefits that come with it. This is especially true for the people in laelai Adiksandid, while the main road is still too far and the quality of the road gets worse towards the end, but also for other people living in remote kushets far located from the feeder road; even in tahtai Adiksandid.

In tahtai Adiksandid do 5891 people live: 2866 men and 3025 women. These include 1251 households in total, of which are 916 farmers with their own land (72 percent). The remaining 339 households enclose the unemployed youngsters and therefore also the day labourers without a permanent job: as they do not have their own land they work on other farmland or work for instance temporary with stone grinding activities (Participant N, 18-04-2015). In laelai Adiksandid, 4041 people live: 2053 male and 1988 female. These include a total of 819

households, of which are 715 farmers with their own land (87 percent). Employment opportunities in this area, besides farming, are also the stone grinding activities, transportation and occasionally work provided by ngo's or other investors (e.g. making terraces). The latter currently provided temporary work for 6 months for 315 youngsters (Participant O, 02-05-2015).

New employment opportunities are said to be indirectly created through feeder road development. As we have already seen in the previous section, feeder road development could create employment opportunities like transportation and the establishment of container shops along the road. Some of these were also mentioned by the people of Adiksandid. However, the findings in this tabia were somewhat different compared to the others as because of the different environment, population and distances to the road, either the feeder and/or the asphalt road.

According to the respondents, more job opportunities are now present in both laelai and tahtai Adiksandid because of the road. Examples of these new job opportunities are (i) new transportation possibilities, (ii) the establishment of little shops and small cafes along the road, (iii) jobs that became available in other areas because of the road and the possibility to migrate for daily, temporary or permanent labour, (iv) stone grinding activities and (v) providing services along the value chain.

(i) New transportation possibilities

Before the road construction people and products were transported by foot or donkey because it was impossible for vehicles to come to the village; nowadays people can use other transportation like horse cars, mini-buses, trucks, etc. to transport themselves and products, with all the new employment entailed.

(ii) The establishment of little shops and small cafes along the road

These are most common in tahtai Adiksandid and are located at the beginning of the feeder road near the asphalt road. All the owners of the shops have a certain license, which you need in order to sell the products. With the license that these shop owners have, it is only allowed to sell products like soap and bread; clothes for instance are not allowed to sell. For this reason their supply is limited and competition among the shop owners is high. One of the shop owners is a

retired soldier and used the money he got when retiring from the army (20.000 Birr³) to open his shop; others used a loan. The costs of are relatively high: every morning he goes to Wukro (16 Birr two way) to buy bread for his shop; he buys other inputs from a retailer, but these prices have increased because of the retailers, according to this shop owner; and he pays 640 Birr per month for the rent of the shop (including his house). According to the shop owner, he sells his products for a 'fair' price so the benefits are low: 'I am not very happy with my store but because I had no alternative for a job I opened the shop (Participant P, 18-04-2015)'.

In laelai Adiksandid only one small business is present: it includes a small shop with some basic products (e.g. credit, washing powder, etc.) and a place where people can have a drink or a coffee.

- (iii) Jobs that became available in other areas because of the road and the possibility to migrate for daily, temporary or permanent labour

These employment opportunities, especially for youngsters, are the jobs that became available in other areas because of the road and the possibility to migrate for daily, temporary or permanent labour purposes. Before this movement was also present, but increased after the road construction. An organisation that is stimulating these movements and providing jobs for youngsters, is the youngsters association: 'we are stimulating the youngsters to work hard and to not waste time (Participant Q, 04-05-2015)'. In order to do so, the association provides jobs to the youngsters (e.g. stone grinding and irrigation works) and earn around 80 Birr a day.

In this association the members are men between the ages 15-40 (although the focus is on the ages 15-29). All the men within this age range need and have to be involved in the activities of the association. When there is a job opportunity; those without land have priority. Besides that, you must be an active participating member of the group in order to be an applicant for the job. In tahtai Adiksandid the youngsters association has around 450 members; of these 450 members 110 youngsters have their own land. The leaders of the association will communicate to its members when a job opportunity occurs; however, the persons that are most needy will get priority. If there is enough employment; then they can all participate. The youngsters association

³ 1 EUR = 22,6374 ETB (XE, 2015).

will choose the right participants for the job themselves; the private owners do not have a say in this: ‘all the youngsters are strong, vital and fit; so all are suitable employees for any job (Participant Q, 04-05-2015)’. There are no rules for the private contractor to hire for instance first the inhabitants of the tabia itself and after that employ people from outside. The reason why there are no rules for this is because most people in the tabia focus on their own irrigation farmland and therefore enough other jobs for other people remain; it is not an issue and therefore no need to regulate the distribution of the jobs. What was told before did not seem correct: either youngsters from tahtai as youngsters from laelai are allowed to work in both tabia’s.

Around 4 years ago, the government was providing several jobs in different sectors, but that decreased. Currently private owners inform the leaders of the youngsters association about the new jobs available. These are mostly, in this area, private owned grinding machine businesses. However, even though the government is providing less jobs there are now more job opportunities than before and people are working.

According to the leader of the youngsters association (Participant Q, 04-05-2015), there are enough job opportunities, however ‘people want more money and therefore increasingly people are migrating to Saudi Arabia – just for the money’. This has, according to him, nothing to do with the available job opportunities because there are enough. The road is of great influence on this: some youngsters used the money they have earned with constructing the road to migrate to Saudi Arabia. Around the 32 people of tahtai Adiksandid migrated to Saudi Arabia. This is a negative impact of the road, because peoples life’s are not better abroad because they are often illegal, are working under bad conditions, etc.: ‘even this morning there was a mourning because some family member past away recently in Saudi Arabia’. The youngsters association has regular meetings every month and tell all the members not go abroad; the situation is bad there (e.g. illegal, bad living standards, abuse, etc.). The government also helps to prevent this problem by providing loans so the youngsters can start up a business – but some youngsters have used this money to migrate.

(iv) Stone grinding activities

The stone grinding activities in this place are increasing: because of the new transportation possibilities it is easier to transport the stones and, furthermore, they can go to other places that were remote before to get more stones and there is an increasing demand for road construction and therefore also increasing demand for cobble stones, what made the industry grow. These stone grinding machines are very common in this area; there are even too many jobs here because of these businesses. Because of this there is no need for youngsters to seek for work outside the tabia. However, 'if an opportunity arises, e.g. a large scaled governmental infrastructural project in electricity in another town, then youngsters would take the job (Participant Q, 04-05-2015)'. Because of the too many jobs at the stone grinding factories, people from other tabia's come here in order to find a job there: more than 50 percent of the day labourers in tahtai Adiksandid come from other tabia's or even woreda's, also to work at the stone grinders, other farmlands or irrigation works (including around 30 youngsters from laelai do work in tahtai Adiksandid), and 7 people originally from another tabia found permanent work in tahtai Adiksandid; but still living somewhere else (Participant N, 18-04-2015).

7.2 Inequalities in access

However these positive developments of new employment opportunities, they are not equally assessable for everyone. As already mentioned, the geographical differences between laelai and tahtai are that laelai is located far from the main road, in the upper part were the landscape is more robust and where the quality of the road is worse compared to the lower part in tahtai. Furthermore, even there are major differences within both tabia's, as some kushets are remote and far located from the feeder the road. Because of these differences, the transport and therefore also job opportunities do not occur equally for the inhabitants of Adiksandid. Some respondents explained that the job opportunities both between and within tahtai and laelai Adiksandid are equally divided. However, other results showed different outcomes; e.g. the stone grinding activities and transportation. The differences between the tabia's in employment opportunities were also shown looking at the amount of cafes and shops: in laelai Adiksandid only one café was present; in tahtai clearly more cafes and shops were observed at the beginning of the tabia, close to main road.

Other employment opportunities are the jobs that became available in other areas, because of the road and the possibility to migrate for daily, temporary or permanent purposes, which is in line with the written literature. As Rigg (2002) argued, rural road allows the market to infiltrate peripheral areas and permits the locals to access jobs, services and higher standards of living urban areas (Rigg, 2002). Furthermore, roads could also increase access labour markets that have a direct impact on the socioeconomic well-being (Porter, 2003). The latter is actually debateable, since the opinions about the feasibility to migrate being a positive or negative development differ. Some people argued that this is a positive development; especially youngsters are now able to find a job somewhere else and work for instance in Wukro as a day labourer. Others considered this a negative development, because the reason why these youngsters migrate elsewhere is because there are not enough job opportunities in Adiksandid, though others were saying there are even too many jobs available. Based on the statistics and the observations, conclusions can be drawn that there are indeed, especially for youngsters as day labourers, enough employment opportunities, especially in the stone grinding activities or at other farmlands in harvest season. However, as the harvest seasons show, these opportunities are mostly seasonal only. Furthermore, analysing the different opinions from the respondents in comparison with the statistics, we can conclude that not all these opportunities are equally accessible for the people of Adiksandid.

The main problem, however, is the fact that in both tabia's the main source of income is the farmland. As it a very dry area and not all the farmers use irrigation, the production is low and products are of bad quality. Therefore, some people were not happy about the situation and were complaining about not enough, especially *other* opportunities besides farming. This is then also the reason why people migrate to e.g. Saudi Arabia, as the people *expect* to have more and better opportunities there.

7.3 Preliminary conclusion

In light of the above, provision of feeder roads leads to employment opportunities such as (i) new transportation possibilities, (ii) the establishment of little shops and small cafes along the road, (iii) jobs that became available in other areas because of the road and the possibility to migrate for daily, temporary or permanent labour, (iv) stone grinding activities and (v) providing

services along the value chain. However, these opportunities are not equally divided among the citizens of Adiksandid and thereby, not all these new opportunities (e.g. labour migration) seem to be even that positive. These inequalities can be mainly explained by the geographical differences, however sometimes personal connections and political differences can play a certain role in this as well, what will be further discussed in chapter 10. Furthermore, as the above results have showed, the impacts of feeder road development on employment are significant; however it is not the only solution for this area, as the main problem seems to be the dry farmlands, which concerns almost 80 percent of the people. However the results that this chapter showed, the potential of feeder road development on employment can be even greater, when including and analysing the influence of the road on market access as well. Therefore, the next chapter will discuss the impact of feeder road development in Adiksandid on market access, and how this results in employment (chapter 9).

8 FEEDER ROAD DEVELOPMENT AND MARKET ACCESS

This section will focus on the impacts of the feeder road through Adiksandid on market access and will start with presenting the findings on how feeder road development leads to improved markets, followed by a discussion and review of the mentioned literature about their very complex relation. For this part of the research, the measurement indicators were changes in demand and supply, production and consumption, prices and income; increased diversity of products; local market development; increased competition; trade; in- and outputs; etc. (appendix 2). The outcomes will be discussed below.

8.1 Improved market access

The people of Adiksandid visit the market in Wukro on the market days Wednesday and Saturday, to sell their produce and to buy other household products like additional vegetables and fruits, spices, soap, etc. This all became much easier since the road was constructed, since the people can use other transportation which saves time and energy. Especially for the farmers, the construction of the road had a major impact: ‘we are now able to transport our products easier, faster, and more efficient which all results in better quality and better prices at the market (Participant G, 28-02-2015)’.

In general all the respondents agreed that the development of the feeder road improved their access to the market. However, also again in this case, the benefits are not the same for all the inhabitants of Adiksandid. Both the people from laelai and tahtai Adiksandid can transport their products much easier to the market compared years ago, but the difference is that the farmers of tahtai Adiksandid can transport their products with the use of a horse car (although again some differences within the tabia as well); which the farmers of laelai Adiksandid cannot and still use a donkey, since a horse car cannot come all the way up to laelai Adiksandid. Not only a horse car, but also for other vehicles it is in some parts impossible to transport products and people since some vehicles can come to the end of the road or to other remote kushets. Besides, there is no regular line to transport people from Wukro to laelai Adiksandid and vice versa. For tahtai Adiksandid this is much easier, since they live close to the main road and can get easily access to any transportation. Laelai Adiksandid is trying to improve the road and establish a regular bus line for a fixed price; this however is a long process since ‘the government is very bureaucratic

and slow (Participant R, 19-03-2015)', while the people need to get permission in order to develop the new road and bus line.

One of the measurement indicators was to find out the *changes* in production and consumption, demand and supply, prices, and income. The changes in consumption were significant: the road and the thereby transportation stimulated consumption, since it is much easier to visit the market in Wukro nowadays. People are now 'able to buy different products than before' and 'can prepare more diverse meals because of the different products available at the market (Participant S, 13-03-2015)'. However, the fact that there are different products available at the market, is not seen as a direct impact of the road, but as a result of the use of irrigation; therefore people now have year-trough access to more and diverse vegetables. Still, the road is of influence in the use of irrigation, and therefore indirect responsible for the more diverse products at the market.

The production of some farmers also increased. The changes in production were likewise not seen as a direct impact of the road but because of the use of fertilizers and irrigation. However, it is because of the road that people had access to the fertilizer, so indirectly the road is of great influence on the production. The road construction also influenced the production directly negative, since some farmland was taken (although 'the positive impacts of the road are more important', according to the respondents). Still, the farmland is a limiting factor in this tabia, as it is dryland, there is water shortage and not all the farmers can use irrigation and are depending on the rain season. This is one the reason why some farmers only produce for their own consumption: 'I use my production partly for consumption, especially sorghum; and partly for market purposes, where I sell pepper and tomato (Participant T, 14-03-2015)'.

In general, people complained about increased market prices and considered this as a negative impact of the road. These increasing prices can not only be explained by the cause inflation; according to the respondents, the main reason was that, as explained in previous chapters, traders at especially local markets, but also at other markets, were selling products like clothes and shoes against much higher prices; not only because they come from far places but also because these products are available locally and therefore traders sometimes misuse their position and know they can ask for these high prices. Again this is debatable, as the people of Adiksandid 'only' have to travel to Wukro instead of Mekelle, and therefore save time and costs. On the other hand,

farmers were also complaining about decreased prices and the low prices that traders are paying them for their products. Again, it differs per respondent what the changes of the prices are: ‘there are no changes, because the prices are fixed and I have a fixed agreement with a trader (Participant U, 13-03-2015)’; ‘the market prices are ok (Participant V, 13-03-2015)’; ‘government interferes at the market: the maximum price is fixed however some seasonal fluctuations (Participant U, 13-03-2015)’; etc. In this part especially, the role of the government is of great importance, what will be further elaborated in chapter 10.

One of the main problems for the farmers, according to the tabia head of laelai Adiksandid, is that ‘the farmers have little knowledge about the market prices and other market trends (Participant W, 21-03-2015)’. This is not only because they are too far located from the market in Wukro, but also because the phone network is unreliable. If this would improve, they could call for the best prices and sell their products at the best moment. Within the tabia there is this cooperative association which informs the farmers about market prices etc. by means of market research, which will be further discussed in chapter 10 as well.

Another interesting fact that occurred at the market in Wukro was that one permanent seller was selling tomatoes coming all the way from Mekelle because they were cheaper there (even with the transportation costs) and the quality was also better. So even though Adiksandid is connected to Wukro and the farmers can sell their products at the market; some might prefer products from elsewhere and do not buy the tomatoes from a farmer of Adiksandid. In that case the road is not profitable for the farmers of Adiksandid and leads to even more market competition. While roads are being constructed and bringing more and more people and products to the market in the woreda town, this leads of course to increased market competition, with all the consequences. An example: ‘because of increased market competition between other farmers there was too much tomato production, and I had to throw away my production; therefore I shifted the production to onion and carrot (Participant X, 13-03-2015)’.

One of the assumptions was that improved market access could lead to local market development as well, as people can buy products at the market in Wukro and sell to other people in Adiksandid, and other people could travel to Adiksandid much easier because of the road, to sell their products as well. Especially in the case of laelai Adiksandid, which is 3-4 hours walk to the

main road, it would be much easier if there was a (small) local market present. However, this local market was not present; only sometimes some informal local exchange of products is taking place between farmers (although still limited) and also between farmers and traders. Furthermore, they have plans to develop a local market; although this is a long bureaucratic process. This all will be further discussed in the next chapter.

8.2 A complex relation

With the above mentioned findings, it comes clear that feeder road development leads to improved market access, which is in line with the literature written about this topic (Mu & van de Walle (2011); Dercon & Hoddinott (2005)). Also the fact that ‘the quantity, quality and diversity of the goods could increase’ (Jacoby, 2000), was significantly true for this case study. However, as the results have shown, the relation between feeder road development and market access is more complex than the previous literature has shown.

Rural households that are unable to interact with markets are prevented from adopting diverse livelihood strategies. Rural poor people often say that one reason they cannot improve their living standards is because they face difficulties in accessing markets. It is therefore of great importance for all rural households to improve their access to markets, mainly through (feeder) road development (IFAD, 2011). This outcome of earlier conducted research about this topic was true for the people in Adiksandid: ‘it is because of the road that we now have access to more and divers products of better quality (Participant G, 28-02-2015)’ and ‘all our lives are related and dependent of the market, so the road is of great importance for us (Participant Y, 28-02-2015)’.

An important note that need to be mentioned here, is that before the road was constructed, people travelled already to the market in Wukro, although using another road and by foot. Also, especially some people of tahtai Adiksandid, use a shortcut to travel to the market, and do not use the feeder road. For these people, the road is not of that much influence on market access. In the other cases, the visits to the market did not increase because of the road, however it saves time and energy nowadays and because of road construction in other areas as well and the thereby transportation, causes more and divers products at the market.

However these positive developments, the assumption that ‘strong links to markets for poor rural producers are essential to increase (agricultural) production (IFAD, 2011)’ is actually not

directly true for Adiksandid. Although the production did increase compared to years before, this was not a direct impact of the road construction, but a result of the use irrigation and fertilizer. Furthermore, the assumption that 'improving these links could boost productivity and therefore income' (IFAD, 2011), is also not completely true in this case. Not only because the production increased because other influences and therefore also their income (more production because of irrigation leads to more profit and more market competition), but also because in most cases income did not increase because of better access for all small producers in the area and therefore more market competition with negative impacts on their incomes.

The last mentioned argument about using fertilizers and irrigations systems, made the competition between farmers and others at the market increase. The construction of the road had a more providing role in this, as it stimulated the farmers to bring the products the market, as it became easier. However, the road construction was not the main reasons for increased market competition, according to a retailer: 'because of the irrigation systems many farmers are currently using, more vegetables and other products are produced during all seasons and therefore the competition among farmers but also retailers and permanent sellers at the market has increased, which resulted in low prices and surpluses. Not because of the road but because of the use of irrigation market competition has increased (Participant Z, 23-04-2015)'.

According to the respondents, increased market competition resulted in low prices and therefore a lower income. The reasons for this will be further discussed in the following sections, as the government controls this as well by fixing the prices, controlling traders and others to make sure they do not underpay the farmers, and by conducting market research. Besides, since almost all the farmers are dependent on the rain season, price fluctuations are mostly seasonal, which is comprehensible.

The last finding that is worth to discuss, are the benefits in general for the people of Adiksandid, because again in this case, even though the benefits are positive and people gain from improved market access, they do not all benefit equally. For the people in laelai the road is less beneficial in light of market access, since the market in Wukro is still too far away and even with transportation it is still hard to travel. Therefore, a local market would be the perfect outcome, which will be discussed in the next section.

8.3 The impacts of a feeder road on market access

As the above results showed, feeder road development leads to improved market access and therefore the quantity, quality and diversity of the goods increased as well. However, again these differences in access occur. In relation to market access, it depends on three dimensions whether someone has more or less access to a market: (i) the presence of a feeder road; (ii) the distance to this road; and (iii) the available transportation services.

Furthermore, the development of a feeder road leads indirectly to more production, as the road made the use of a fertilizer possible, and that in turn increased the production. In light of the above discussion, improved market access does not lead to only positive developments, as this also means increased market competition and therefore decreasing prices and thus a lower income for the producers. How these outcomes effect employment, will be further discussed in the next chapter.

9 FEEDER ROAD DEVELOPMENT, MARKET ACCESS AND EMPLOYMENT

This section will focus on the relation between improved market access and employment and will start with presenting the findings of the value chain analyses and market development, followed by a discussion of these and other findings in comparison with the outlined literature in the theoretical framework. At the end of this section a provisional conclusion will be presented, as the following chapter, where the role of the government will be discussed, will present also information that will further explain the impacts and relations.

Measurement indicators for this part of the research were the positive and negative effects on employment caused by feeder road development and improved market access: what are the opportunities, benefits or losses for whom and where, and in what kind of jobs, etc. These effects were studied, among others, by means of a value chain analysis (appendix 3 & 4). In this study, a value chain encompasses the full range of activities and services required to bring a product or service from its production to its end use by the consumers (Kaplinsky, 1999). In order to collect useful data for the value chain analyses, it was important to use the best fitting approach, which depends on the research question. Since the aim of this value chain analyses was to address the potential negative impact of improved market access, e.g. the role of a trader, the distribution of the benefits of actors in a certain chain needed to be identified. Through the analysis of who benefits, where and how, one can determine who benefits from participation in the chain and also which actors could benefit from increased support or organizations.

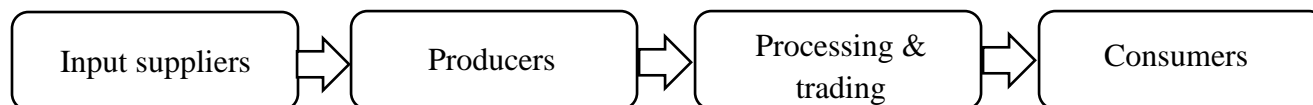
Besides this value chain analyses, other topics central in this chapter are the positive and negative effects of increased labor migration, the development of a local market and the changes in consumption and production, and how these effect employment. As some of the outcomes are already discussed in the previous chapters (e.g. changes in production and consumption, labor migration, etc.), the following two parts of the findings will only focus on the outcomes of the value chain analyses, with special attention on the different roles of traders, and on local market development. However, in the subsequent discussion the other topics will be included again as well and will be analyzed and discussed how these all could result in employment opportunities.

9.1 The value chain analyses

Initially, the idea was to do a value chain analysis of only one certain product. However, the idea behind the value chain analyses was to show how the road can also have negative impacts on for instance the farmers, because of the role of traders who can come to the tabia now because of the road and pay them lower prices. Therefore, the value chain analyses was conducted for different products, asking producers and consumers some questions about the developments and market trends, role of traders, the influence of the road on that, etc. (appendix 3, 4 & 8).

This value chain analyses included 4 different parts (figure 4):

Figure 4: Schematic reproduction of the value chain



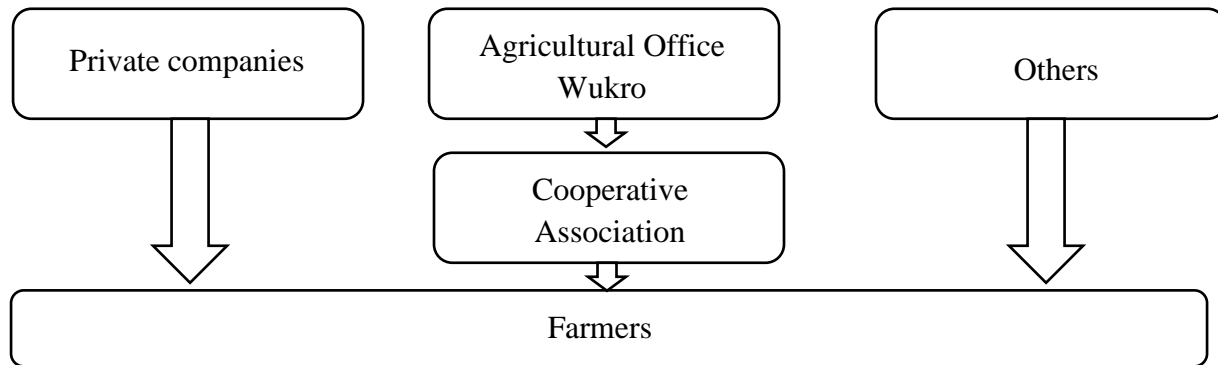
1. Input suppliers

The farmers get their inputs from different suppliers (figure 5): some get their seeds from the agricultural office in Wukro because not all seeds are available locally – the office transfers these seeds to the cooperative association in tahtai Adiksandid where the farmers can collect them; others get their seeds from private selling companies in Wukro because ‘the quality is better (Participant Ga, 16-03-2015)’ and again others get the seeds elsewhere, e.g. from agricultural agents (which are, according to some respondents, not of good quality) or from the farmers’ association. In general, the prices of seeds are seasonal and differ between 500-1000 Birr. Because the demand for seeds is high in high season, the costs for the seeds are also higher. Unfortunately, because of the increased supply of products that time at the market as well, prices are low and therefore their benefits even lower.

The influence of the road in this small part of the value chain is the fact that farmers have more and divers access to inputs. This has to do with several developments (e.g. improved seeds, etc.) but it is the road that made it possible to access these seeds, which in turn leads to changes in production as well. Furthermore, the role of the agricultural office (which is part of the

government) is an important supplier and because of different tasks they implement (e.g. market research etc., which will be elaborated in the following chapter) new and better qualified seeds for good prices became available.

Figure 5: First part of the value chain: input suppliers to producers



2. Producers

The producers, which are the farmers in particular, have several activities in order to produce the product: getting the inputs, planting the seeds, ploughing the land, harvesting, etc. The costs are mainly the costs for the inputs, payments of extra laborers (or providing food and drinks if farmers help each other), animal food (using animal for ploughing) and transportation costs (although if they use the donkey they do not have any transportation costs). In general, the farmers did not have a specific reason for producing a certain product, although later it became clear that the agricultural agents started informing the farmers that they should not produce the same product as their neighbors do, so some farmers just changed their production, although many farmers do not listen to the advice because they ‘do not want to produce a product that is not profitable’, or ‘can only produce certain products because I do not have irrigation (Participant Aa, 20-03-2015)’.

3. Processing and trading

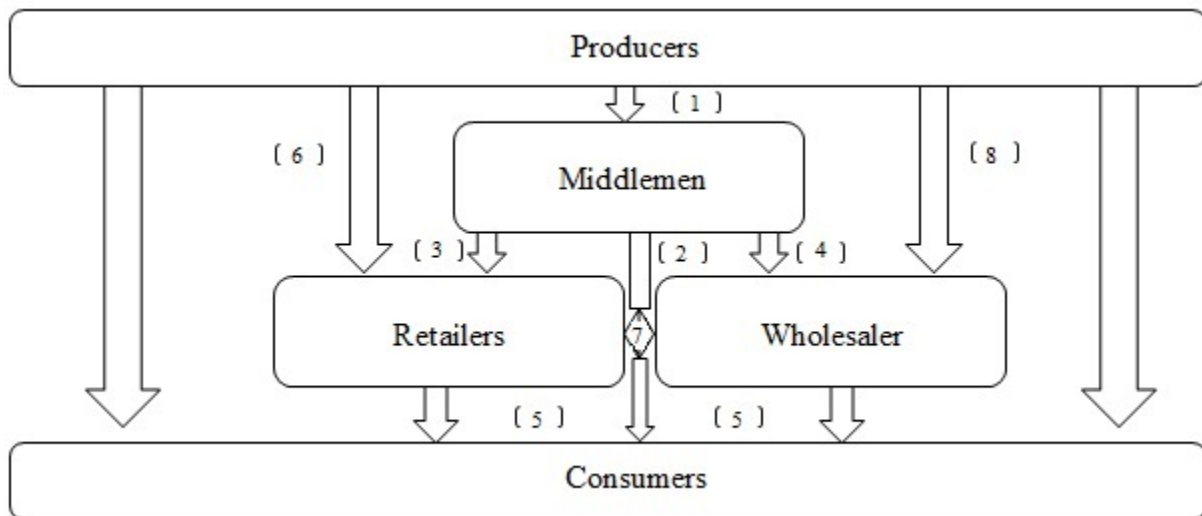
Within this value chain analyses, under the heading ‘processing and trading’, the roles of retailer, wholesalers and middlemen as traders are included, as well the providing services such as transportation. In this research, the definition of a retailer is a person that sells goods to the consumer, as opposed to a wholesaler who sells the goods to another business. A middleman acts

like an intermediary and buys goods from the producer and resells them to the retailer or consumer.

When analyzing a certain value chain; the role of a trader is central and quite influential for the farmers' income, at least in the case of both tahtai and laelai Adiksandid. All the respondents were mentioning their role; both positive and negative stories, although the latter seemed more common at the beginning of the research, however the former got more attention at the end. To make it all more clear, the different scenarios will be outlined below.

The first scenario (1) is that a middleman comes to the farmers in Adiksandid to buy their produce; the price that farmers receive is much lower than the price would be if the farmers themselves would sell their produce at the market in Wukro. However, this way the farmer saves time, energy and transportation costs. Still, it is debatable whether the middleman pays a fair price because 'they do not care about the farmers' and 'give too little money often' (Participant Ba, 16-03-2015)). The middleman can sell the products himself at the market (2), or he sells the whole produce to a retailer (3) or wholesaler (4), whereas they will resell the products to the consumer (5) (figure 6).

Figure 6: Different scenario's



In another case scenario (6), farmers themselves go to the market but sell their whole produce there to a retailer. Again, according to the farmers, they get a low price. This was different 2

years ago; farmers could get a good price for their products and could sell it themselves at the market. Currently, they have to use the services of the retailers because ‘there is no other option; the government only allows people to sell their products at the market if they have a permit (Participant Ca, 17-03-2015)’. Even the tabia head mentioned the difficult relation between the farmers and the different traders: ‘they want to buy the products of farmers for the lowest price, and if farmers do not want to sell their produce for that price and go to another market to sell against a better price, retailers and others call each other and block the farmers on the market. Once this happened to me as well: I went all the way to Mekelle with my products; got blocked there and lost all my money on transportation costs (Participant W, 21-03-2015)’.

Actually it turned out that, when interviewing the secretary of tahtai Adiksandid, that there are permanent sellers at the market in Wukro and they do not like it when farmers from other tabia’s that do not have a permanent license and also do not pay for one, block them at the market and start selling the same products in front of them, which makes sense. However, as this man was explaining, in contrast with the statement made before by Participant Ca, it is allowed to sell the produce at the market; this costs you 5 Birr to rent a place at the market. There is no obligation to get a fixed selling permit for a whole year; it is up to the farmers if they get one or not (Participant N, 18-04-2015).

Furthermore, Participant N was explaining about ‘good traders’, where they, as tabia administration, have some agreements with. The cooperative association, an organization that provides several services and goods to the people of Adiksandid, provides a storage room for good products and seeds and can call a reliable trader to come and get the products there for a fair price. Sometimes, as already mentioned before, traders sell the products for too high prices. If the people notice that a trader is asking for too high prices they can report this and the retailers will be punished and/or his shop will be closed. However, in most cases (with again some exceptions of course) the prices are fixed (e.g. 1kg of sugar is 16 Birr) and ‘has everyone equal opportunities’ and ‘agreements with retailers and therefore fixed prices (Participant Da, 13-03-2015)’. There were also other farmers that were actually quite happy with the traders because yes he will earn some more money but for him as a farmer it would be tiresome to sit at the market the whole and sell his produce, instead of saving time and sell his produce at once in the morning to a retailer or wholesaler (Participant Ea, 17-03-2015).

Traders with money can register at the UNION (a governmental organisation) for 2000 birr to register and 5000 birr as investment. With this registration, the traders are allowed to come to the tabia and do businesses there; they get a license and with that they are allowed to come to the tabia. This way it is profitable for the UNION, but also for the businessmen and for the farmers. The traders receive a certificate so that the farmers know that these people are good and reliable. Whether these traders are really reliable is debatable, and will be further discussed in the discussion below.

Among the private retailers situated at the market are some differences and again different scenarios: one never goes to the farmers to buy the produce, they only come to the retailer and buys their total output; other retailers have agreements with the farmers that they call each other to inform them about the produce, and sometimes the retailer himself goes to the farmer or he pays the transport costs of the farmer. Furthermore, there are also some differences in selling the products to others again: one retailer or wholesaler may sell the products directly to consumers or may sell large amounts of the total to another permanent seller at the market (7). The latter was among the retailers at the market in Wukro more common, while the profit margin is relatively low. One sack of onions is around 50kg and costs around 400 Birr (8 Birr per 1kg). The retailer sold these onions for 8.50 Birr per 1kg, but only sold them per 10 kg. Still, the profit is relatively low. The advantage of selling to other permanent sellers at the market is that they sell a large amount of the produce at once, instead of selling per kg and selling the whole day at the market, and may take the risk that at the end of the day you still have some products left. A disadvantage of this is in turn the profit; the price per kg onions at the market is 12 Birr, so a difference of 3.50 Birr (Participant Z, 23-04-2015). These private retailers operate in a so called retailers network, where they do market research and inform each other.

The last scenario (8) is the scenario that involves the wholesaler, where again different parties can be involved: either the producer brings the products to the wholesaler, whereas the wholesaler might deliver the products in turn directly to the consumer, or he can bring them to a retailer. Furthermore, as the figure shows, a middleman can also be involved in this scenario, where he acts as an intermediate between the producer and the wholesaler.

4. Consumers

The consumer part of the value chain analyses is mostly discussed already in the previous chapter about market access. For them, the impacts of the road are both positive and negative: positive because of the increased diversity of products and improved quality; negative because of the increased prices. The fact that they were complaining about increased prices, is in contradiction with the decreased prices where the farmers were complaining about, but also with ‘there are no changes, because the prices are fixed and ‘I have a fixed agreement with a trader’ (Participant Da, 13-03-2015). The explanation for this is, as the previous chapters explained, that the market prices for consumer goods decreased because of the increased market competition resulting in less income for the producers; and the increasing prices of especially clothes and other products that are not produced locally, is due to fact that traders are coming to the markets now asking for higher prices, because they know people are willing and forced to pay a bit more for these locally scarce products.

The above mentioned outcomes are also related to (the potential of) local market development, which will be discussed below, as these developments could lead to new and more employment opportunities as well.

9.2 Local market development

Three forms of local markets are (though small) or will be present in the future in laelai Adiksandid: (i) informal local market, (ii) semi-formal local market and (iii) formal local market; in tahtai only (ii) is present. Especially (ii) is an impact of the road, and (iii) could be a potential impact that needs further development, in the case of laelai. Again the impact of the road on these forms of local markets, are different for both tabia’s.

1. Informal local market

The informal market contains the occasionally informal local exchange of products between farmers, also known as bartering. This is not very common actually, which is especially inapprehensible in the case of laelai Adiksandid, as they are too far located from the market in Wukro, that you would expect some more local exchange. Even in the case of tahtai this is not the case, even though less needful as they are much closer situated to Wukro, still there are some parts even in tahtai that are quite isolated and hard accessible. Furthermore, as mentioned in the

previous section, some farmers have unwritten, not formal agreements with traders, where informal local exchange is happening. These agreements differ between the farmers of laelai and tahtai, as traders are more willing to make an agreement with farmers of tahtai, or farmers in laelai at places that are good accessible, instead of going to farmers that are difficult to come.

2. Semi-formal local market

As at the informal market some farmers might have some unwritten, informal agreements with traders, some farmers might also have, as mentioned in the previous section, formal agreements and are watched by the government, to protect the farmers. Again, the same is true in case of the agreements: the people that live close to the (main) road are more lucky to sign such an agreement.

Another part of the semi-formal local market, is that part of the 'market' that is controlled by and part of the cooperative association. If you are a member you can buy cheap products here, e.g. oil and sugar, because they are scarce and cannot be produced locally and therefore quite expensive. However, there are limits in how much products you can buy in the shops; you are only allowed to buy a certain amount of a good. Furthermore, all the products that this association is providing, can only and has to be bought here. However, 'one should not see this as an obligation, but as a service and therefore a positive thing, as people are benefitting from these cheap products (Participant Fa, 20-04-2015)'. The cooperative association only has a shop in tahtai Adiksandid; laelai Adiksandid does not have one yet and therefore also no shop where they provide these cheap products. The reason for this is because of the still recently separation of one tabia into two. However, they are planning to develop a cooperative association and thereby the shop in laelai Adiksandid too, although again this is a long and bureaucratic process.

3. Formal local market

The observation that was the most remarkable and incomprehensible was the fact that there was no formal local market in Adiksandid, especially in laelai. It does not make any sense that farmers went to the market twice a week with their whole produce, and that other people from the same tabia or even kushet went to that same market and travelled for at least one hour to just buy the products of his or her neighbor. It was especially incomprehensible because some kushets are still too far located from Wukro and have to walk for three hours to get there. However, they have plans to develop a local market; although this is a long bureaucratic process

and still needs to be approved. The head of the tabia thinks that the woreda government will approve the request, but the reason why they would not approve the plans is because they have too less inhabitants (<5000). Other reasons for not approving the plans, did not seem to be the case.

In tahtai Adiksandid they do not have plans to develop a local market; the farmers are productive enough themselves and want to sell their products at the market in Wukro or Negash, which is another town nearby, because they are close located to those places. Furthermore, if they will develop a market in laelai; farmers from tahtai will not sell their products at that market. However, if the farmers from tahtai want to sell their products there at the market in laelai; they are allowed. The tabia administration of tahtai is pro the plans of laelai: 'if laelai will develop the market, this will not have a negative impact on the farmers in tahtai; it will affect them positively as well; also because of the transportation etc., that will come along with this (Participant N, 18-04-2015)'.

9.3 The effect on employment

The two above sections showed the outcomes of the value chain analyses and discussed the market developments in both laelai and tahtai Adiksandid. This section will focus on the relation between feeder road development, market access and employment, taken the outcomes of the value chain analyses into account.

As we know from the literature, feeder road development could lead to increasing production (Rigg 2002), which could in turn lead to increasing demand for laborers and therefore more employment opportunities. However the production did not directly increase as a result of the road, as other factors e.g. the use of irrigation also had a positive influence on the production of the farmers, the demand for extra laborers did increase which did result in more employment opportunities. Furthermore, it became easier for people from other places to migrate to these two places for daily labor activities, which is in line with the study of Chmielinski (2013), who argued that improved access to labor markets could lead to increased daily, temporary or even permanent labor migration, because of improved access to nearby towns where more jobs might be available.

As the statistics in chapter 7 showed, labor outmigration for the people of Adiksandid decreased since the construction of the road, because, according to the respondents, more employment opportunities are now present in the villages. The assumption that labor migration might increase after road construction, because of the changed consumption pattern of the consumers (e.g. the substitution effect: buying products at the market in Wukro from producers elsewhere that people bought locally before) and therefore less demand for the products of the farmers in Adiksandid which leads to less income and less employment, forcing the farmers to seek for a job elsewhere, was not true for Adiksandid. The demand for the products is still the same, since not only more producers are arriving at the market, but also more consumers. Furthermore, people are visiting the market in Wukro since a long time already, even before the road was constructed. Therefore, the road seems to have no negative impact on this, as the road did not negatively influence the production of the farmers as they did not only produce for the local people before. The farmers were not forced to sell their products at the market in Wukro; they did it before already.

However these rather positive outcomes, feeder road development can, as the above findings showed, also result in negative outcomes which influence the income of the farmers. Therefore, critical questions can be set by the known theories about road development, market access and employment, especially the theories about infrastructure and value chains. As Kaplinsky and Morris (2001) argued that with the knowledge of all the activities along the value chain of a certain good, effective and efficient agricultural development is possible, entailing all the positive results as win-win relations and maximum benefits for all the chain actors. This assumption is quite debatable in the case of Adiksandid, as this study showed many different outcomes: (i) equal benefits because of fixed prices; (ii) traders do benefit more because they underpay the farmers; (iii) traders do benefit more but that is fair because of the service they provide; (iv) consumers are suffering from increased prices; (v) consumers are benefitting of decreased prices because of the increased market competition.

In line with this critical reflection of the theory of Kaplinsky and Morris (2001), the same critical questions can be set by the theory of te Velde (2006), who argued that value chain linkages bring producers and consumer closer together. This is however also not the case in Adiksandid,

whereas these value chain linkages seem to make the gap between the farmers and consumers even bigger, since the role of traders and other service providers play an important role in the lives of the farmers and creating therefore a greater distance between the two, with all its consequences.

Besides the employment opportunities within a value chain that are accompanied with road construction and occurred also in Adiksandid (e.g. traders, middlemen, transportation, etc.), new infrastructures could also offer the opportunity to upgrade within a certain chain and therefore even create more or new employment opportunities. When trying to upgrade within a value chain, four major constraints can be identified: (i) market access restrictions, (ii) weak infrastructures, (iii) lacking resources and (iv) institutional voids (Trienekens, 2011). Although the infrastructure and market access improved, upgrading did not occur and was also not even possible for most of the farmers, because of the need for a permit at the market in Wukro and other constraints e.g. lack of money, time, specialized skills and market information, which is in line with Giuliano et al. (2005). Furthermore, because of the unutilized potential of local market development which could offer farmers the possibility to upgrade within the chain as farmers can deliver the products directly from producer to consumer this way, holding all the benefits themselves and saving service costs, the possibility for upgrading is therefore also unutilized. The fact that there is no local market developed yet is because of the bureaucratic process, but also because 'the road is of too bad quality and therefore other people do not come here (Participant B, 19-02-2015)'. This is in line with Trienekens (2011), who argued that weak infrastructures hamper efficient flows of products to markets and exchange of market information upstream in value chains (Trienekens, 2011). Even a small market for local consumers is not present: not as a result of weak infrastructure, but because of the bureaucratic government, according the respondents.

Besides new actors in a value chain and the possibility to upgrade within a certain chain, although unutilized in this case, there is also another way where road development leads to improved market access and therefore new employment opportunities: the establishment of shops along the road. However, unequal opportunities are offered to the people of tahtai Adiksandid, since they are far more located from the main road and because of the difficult

topography, it is difficult to bring products to this place. Therefore, more of these shops were observed in laelai Adiksandid, near the main road.

Since some parts of Adiksandid are better accessible, traders do businesses with those farmers located near the feeder road, whereas farmers of the less accessible places do not have those kind of agreements and need to go to the market themselves. This has both positive and negative consequences, as there are 'good' and 'bad' traders, where the people of the remote kushets might have a disadvantage because they are forced to go to the market themselves, but also have an advantage because they are not exposed to these 'bad' traders as well. The same is true for the possibilities to upgrade within the chain: if farmers live close to the feeder/main road, they might have more possibilities to upgrade since it is easier to go to the market themselves however they might have strict agreements with the traders, whereas people from the remote kushets do not even have the change to do businesses with a traders, but therefore might have the same or even more possibilities to upgrade within the chain, although still things like transportation are difficult.

9.4 The relations between improved market access and employment

This chapter showed the relation between feeder road development, improved market access and employment, where we have seen that feeder road development leads to improved market access that could in turn create employment opportunities e.g. new actors in the value chain, establishment of little shops along the road and labour migration. Not all of these new opportunities are however positive outcomes, especially the new actors in the value chain. Furthermore, the construction of the road could lead to even more employment opportunities than it did now: it has more potential that needs to be utilized, especially the potential of the local market development. Not even would it safe time and energy for the people of Adiksandid, but also because it could create employment opportunities e.g. selling their products at this market and therefore replace the role of traders themselves. The road could make this local market development possible, as it becomes easier to transport products that are not available in Adiksandid itself and people to this place. However, the road needs improvement to make the local market happen.

10 THE ROLE OF THE GOVERNMENT

This section will focus on the role of the government and will start presenting the findings, followed by a discussion of these findings and the existing literature. The measurement indicators for this part of the research were the role of different levels of governments, employment opportunities created by the government, interfering and mediating role at market, local policies and gaps, etc. (appendix 2, 6 & 7). By means of interviewing government officials and analyzing local policy and data reports, the following details were found.

10.1 The organization of the different levels of government

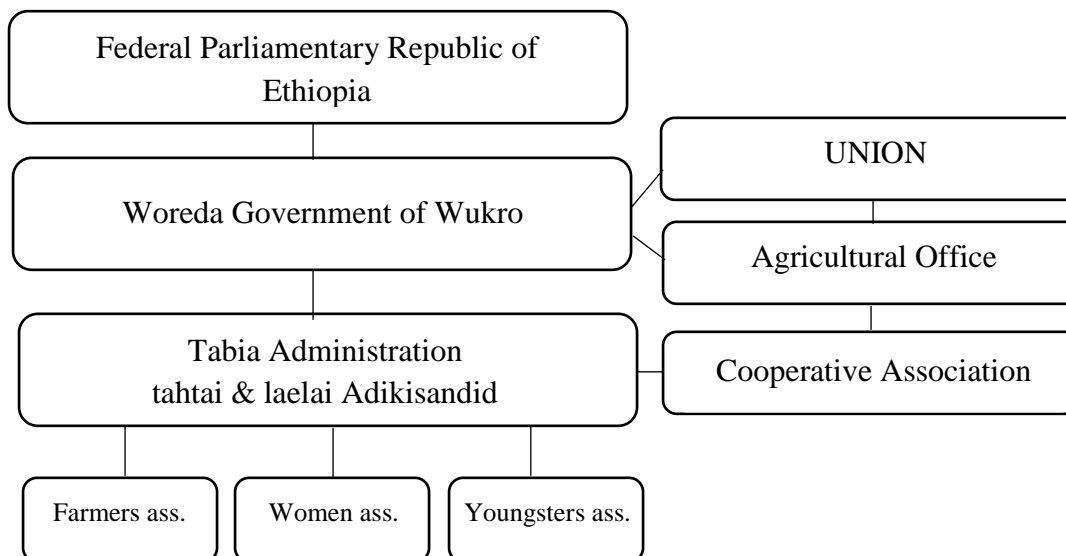
The government has several policies and strategies to stimulate the economic activity in Adiksandid by providing (i) loans, (ii) trainings and (iii) lessons about awareness and the attitude of the people. Furthermore, the government (iv) interferes at the market, where it tries to regulate the market at different levels and checks whether everything is going according the rules.

The national government seems to control almost everything (figure 7): the Federal Parliamentary Republic of Ethiopia controls and manages the woreda government in Wukro; the woreda government controls the tabia and the tabia controls the performance of the associations and kushets. By doing this, they transfer the woreda regulations and activities into the local associations and make sure all the activities and goals set by the national government are carried out.

In light of the above, the government also controls the cooperative association. This association is established in 1996 to stabilize the market and to not rely on private retailers, wholesalers and middlemen anymore. Another reason was that that there was no protection and service for the consumers; prices were very high and shops were just opening and closing when the owners wanted to. The cooperative association tries to find the cheapest products of the best quality with the help of market researchers. The organisation is initially independent; it is part of the UNION and therefore indirectly also part of the government. However, according to the woreda government, ‘this is only technical help and no controlling’ (Participant Fa, 20-04-2015). The cooperative association organises, among others, trainings about agricultural topics (e.g. use of the fertilizer), but again these are organized by the woreda government. The cooperative

association has agricultural experts of the Agricultural Office and too they provide seeds and fertilizer. This cooperative association has strong linkages with the woreda; the market research is also mainly done by the woreda.

Figure 7: Organization of the different governmental levels.



As discussed in the previous chapter, the cooperative association also provides these cheap products for the people who are member of the association, which is an initiative of the local people. The fact that they are telling the people where to buy certain products (e.g. oil and sugar) ‘must not be seen as an obligation, but as a service’ (Participant Fa, 20-04-2015). The products in these shops come from different places and from different people: some are cheap products from Addis, others form a retailer in Wukro, who have agreements with the shop owners and are controlled by the government. The difference in prices between products of a private retailer and the products in the shop of the association is around 3-4 Birr per kilo. The profit they make as an association they share among the members (profit of 17.000 Birr in the last 6 months (consisting of monthly contribution of 10 Birr and profit of selling goods). There are limitations of the amount you can buy; if not enough products in the shop then you are allowed to get it from a private retailer.

Another association that is linked to the cooperative association is the loan & savings association located in Wukro. In order to get a loan from this is association; the tabia itself first has to save

15.000 birr, together with all the people. Furthermore, the tabia administration will do some research about what the people want to do with their loan, why they need it, etc. Only tahtai Adiksandid has a loan and saving association, again because of the recent separation and because only they have a cooperative association: only if you are a member of the cooperative association people can get a loan from the loan & savings association.

The cooperative association has 2116 members, only in tahtai Adiksandid. Laelai Adiksandid does not have a shop where people can buy these cheap products; that is because they do not have a license yet. The reason why they do not have the license yet is because of the above mentioned reasons. At the moment, the tabia is negotiating with the woreda to get the license: the requirements are at least 150 members and a board. Already, they are distributing oil and sugar by woreda level and UNION.

The UNION in Wukro organizes all the cooperative associations; they employ the market researchers as well, at least the agricultural office does; which is part of UNION (figure 7). The UNION researches the products and the market in for instance Addis Ababa and purchases them in large scale; therefore the cooperative association can provide these cheaper products. The UNION is also a governmental organisation; however it is funded by the farmers' payments. The government controls the organisation partly in its management. From each tabia there are 5 model farmers selected to take a seat in the UNION. This UNION is responsible for the total woreda of 19 tabia's. They do also research in order to provide good traders where farmers are more beneficial. The UNION stands for the rights of the farmers and are defending them against the 'bad traders' that give too little for their produce. The UNION also provides fertilizers (farmers are even obligated to get them for this organisation).

The representatives, which are the model farmers, cooperate with UNION. This is actually a negative aspect of the system and causes some limitations. These representatives are selected by the farmers' association because of their model farming and made a lot of progress. Their tasks as representative are doing market research in search for the cheapest products. For this task they got a 'per diem' payment and furthermore some benefits of selling these cheap products. However, these representatives were misusing their role and were not performing well: farmers were not well informed and market prices were increasing. The UNION is now controlling these

representatives to make sure that they fulfil the needs of the farmers and are providing the expected good services.

The market researchers are employed within the Agricultural Office. Their specific tasks are: market research about prices for vegetables and other products (table 4); organizing the farmers; contacting the UNION; and informing the cooperative association in the tabia about the situation at the market. According to the market researcher, the current market trends are: stable market, differentiation of products, fair price, good seeds and vegetables, and price fluctuations. Also, currently there is a good market for farmers, and mostly beneficial for the farmers only. It is good that the market researchers inform the farmers and others about a fair price to prevent overcharging.

Furthermore, the Agricultural Office distributes and provides seeds, fertilizers and other chemicals and thereby employs agricultural experts who search for the best seeds. 90 percent of the farmers in Kilde Awlaelo get their seeds here, because the seeds (both normal and improved) are of high quality. The UNION and the Agricultural Office work closely together and are sub divisions of the government, although 'limited control and independent' (Participant Ha, 18-04-2015). They have a special role at the market by helping the farmers sell their produce and connecting them with the market.

Table 4: example of doing market research

Vegetables	Highest price	Lowest price	Average price
Potato	1540	1450	1495
Tomato	1250	1200	1225
Pepper	800	750	775
Cabbage	1020	950	985
Salad	510	480	455
Carrots	710	700	705
Onion	800	7800	790

Source: Participant Ia, 23-04-2015

Besides these organizations and institutions that help the government controlling the market and tries to intervene where and when necessary, the government also arranges some extra employment, like the Safety Net Program that includes irrigation works, soil and water conservation, road construction and maintenance, etc.

Summarizing, some of the roles of the different levels of governments are:

- 1) Providing loans within micro financing organisations and the loan & saving association, and stimulating e.g. the development of small businesses;
- 2) Providing trainings and extra lessons about several topics;
- 3) Intervening and regulating the market by means of market research;
- 4) Controlling the retailers, wholesalers and middlemen;
- 5) Proving employment opportunities.

However these activities implied by the government in order to help the farmers and others, not all people are positive about their role as government. As to the concerns of the farmers: ‘it would be nice if the government motivated us to sell our produce at the market instead of selling the whole produce to a wholesaler or retailer at the market, but we cannot get a permanent place to sell it and besides the permits are very expensive (Participant Ja, 16-03-2015)’. Furthermore, ‘the government and [...] do not care, it is a very difficult situation but no alternative is offered (Participant Ka, 16-03-2015)’. It is important that the government interferes in these problems and makes agreements between the farmers and traders.

10.2 Policy gaps

As the above results have shown, the government of Ethiopia seems to controls almost everything. Even though it is needed, not all the approaches seem to be the best approaches, (also) according the local people. As outlined in the previous section, traders with money can register at the UNION for 2000 birr and 5000 birr as investment. With this registration, traders are allowed to come to the tabia and do businesses there: they receive a certificate so that the farmers know that these people are good and reliable. In this world of traders, it is not only about good or bad traders, but it is moreover about having money: ‘money is power’ (Participant N, 18-04-2015). Using this approach, it becomes profitable for the UNION because of the payments of the farmers, traders and profits they earn by providing the cheap products (profit of 3.000.000 birr in the last 6 months, conducted in 17 tabia’s), but also for the traders because they can do businesses in the tabia’s in contrast with other traders and for the farmers, because only good and reliable traders can come to the tabia now. Especially this last assumption that this approach is

profitable for the farmers is actually not completely true in the case of Adiksandid, as corruption is common in these organisations and not only good traders get certificated. Furthermore, the model farmers that were selected by the farmers' association for the UNION, who were also misusing their role and did not inform the farmers well, was also a result of nepotism. Thereby is the UNION an organisation making profit by obligating people to buy products they provide and not to buy them elsewhere.

Another important task of the government is setting minimum prices, as it will prevent farmers from traders that are not willing to pay them a fair price. As Wondemu et al. (2012) argues, one of the other key mechanisms at the market is the interaction through price changes and therefore are the institutions that support them very critical. This means that to maximize the developmental impact of road projects, reforms that address the governmental constraints that give rise to inefficient spatial integration of markets are required and therefore needs to be done in the case of Ethiopia, Adiksandid in particular.

Lastly, the government introduced market researchers in order to inform the farmers about the current market trends. As Grunert et al. (2006) argued, a key condition for producers to be included in successful value chains is that they have access to market information and possess the ability to translate it to market intelligence. The latter is actually missing in the strategies of the market researchers: they only inform the farmers, but 'what the farmers do with that information is up to them (Participant La, 04-04-2015)'. The government should interact more in this and help the farmers transfer this information into market intelligence as well, as producers will learn to diversify their production when competition is high, etc. This way, sharing market information by informing the farmers will have more impacts.

In all the previous mentioned positive outcomes of employment opportunities created by road construction, the role of different levels of governments seemed to be of great importance, e.g. construction of the road itself, providing loans for the establishment of little shops, informing farmers with market information, etc. However the positive impacts of road construction on employment and the facilitating role of the government in this, their role could be much more. Mu & van de Walle (2011) suggest that feeder road projects could have a vastly larger impact on local market development if they are accompanied by policies aimed at improving certain characters or by reducing the barriers that reduce the impacts road improvements. The same is

true for this study, as the bureaucratic system of the government still did not approve the plans to develop a local market and does not facilitates services to help them develop one. Furthermore, the government could also play a more facilitating role in helping the people by approving and providing a regular bus line, so that all the people have equal access to transportation. Thereby it is of great importance that the road will be upgrade to a better quality road, and expanded to all the remote kushets.

10.3 The role of the government in facilitating new employment opportunities

This chapter showed the role of different levels of governments in facilitating employment opportunities through feeder road development, e.g. by providing loans and trainings, intervening and regulating the market by means of market research and by controlling the retailers, wholesalers and middlemen. This way not only new employment opportunities are stimulated (e.g. starting your own small business), but also the producers within a certain value chain (e.g. farmers) are protected this way and will their employment and income be secured. As the above findings have shown, especially when looking at the organisation of the different levels of government (figure 7), it is quite clear that the different levels of government are highly integrated in the process of a value chain. Not only in interfering at the market and controlling traders, but it starts already at the input suppliers, where the government supplies seeds as well, through the Agricultural Office. Furthermore, the government is of great importance in offering sufficient transport services as they make the decisions about regular bus lines etc., but also because they are responsible for the quality and maintenance of the road. These issues are again all related to the actors of a value chain, and therefore the role of the government is crucial, especially regarding the facilitation of new employment opportunities. Some important strategies are still missing in the current policies and to utilize the potential of feeder road development and employment, strategies such as providing transportation and trainings about market intelligence need to be implemented.

11 CONCLUSION

This chapter will give an answer on the main question of this research: what is the impact of feeder road development on employment in the Tigray region of Ethiopia? Furthermore, policy recommendations will be provided in order to manage, coordinate and stimulate employment opportunities through feeder road development, and in order to utilize the potential. Lastly further research ideas will be presented that go beyond the case of Adiksandid, as many topics, relations and places are still under researched and therefore further research is needed to gain an even better understanding of the complicated relations between feeder road development, market access and employment.

11.1 The impacts of feeder road development on employment in Adiksandid

In light of all the above, provision of feeder roads leads to employment opportunities such as (i) new transportation possibilities, (ii) the establishment of little shops and small cafes along the road, (iii) jobs that became available in other areas because of the road and the possibility to migrate for daily, temporary or permanent labour, (iv) stone grinding activities and (v) providing services along the value chain. However, these opportunities are not equally divided among the citizens of Adiksandid and thereby, not all these new opportunities (e.g. labour migration) seem to be even that positive.

The potential of feeder road development on employment can be even greater, when including and analysing the influence of the road on market access as well. As the results have shown, feeder road development leads to improved market access and therefore the quantity, quality and diversity of the goods increased as well. In light of the previous discussion, improved market access does not only lead to positive developments, as this also means increased market competition and therefore decreasing prices for the farmers resulting in a lower income.

As we have seen, improved market access could in turn also create to new employment opportunities e.g. new actors in the value chain, the establishment of little shops along the road and by the means of labor migration. Not all of these new opportunities are however positive outcomes, especially the new actors in the value chain. Furthermore, the construction of the road could lead to even more employment opportunities than it has now: it has more potential that needs to be utilized, especially the potential of the local market development. Not even would it

safe time and energy for the people of Adiksandid, but also because it could create employment opportunities e.g. selling their products at this market and therefore replace the role of traders themselves. The road could make this local market development possible, as it becomes easier to transport products that are not available in Adiksandid itself and people to this place. However, the road needs improvement to make the local market happen.

We conclude that the construction of the feeder road in Adiksandid has led to several new employment opportunities. However, there are great differences between laelai and tahtai Adiksandid and therefore the opportunities and benefits are not equally divided among the people. Furthermore, as we have seen, the road did not result in positive outcomes only, as the role of traders became more influential, market competition increased and prices decreased. For these mentioned differences between the two tabia's and the negative outcomes of feeder road development, review of the current policies is needed and therefore some new policy recommendations are provided below.

11.2 Policy recommendations

This study showed the role of different levels of governments in creating employment opportunities through feeder road development. However the activities implied by the government in order to help the farmers and others, not all people are positive about their role as government. As we have seen, the government controls almost everything, which has some negative consequences and leads to corruption in some cases. Furthermore, some important strategies are still missing and to utilize the potential of feeder road development and employment, strategies such as providing transportation and trainings about market intelligence need to be implemented.

For the very most remote villages e.g. tahtai Adiksandid, it might be a solution to provide all kinds of services there in place, instead of making the assumption that the road will make these services more accessible, as they are still too far away to use them and therefore not true for all. These services include, among others, the development of a local market. The government could play a providing and stimulating role concerning this by (i) improving the quality of the road; (ii) connecting remote kushets as well; and (iii) providing a regular bus line and other transportation that is accessible and affordable for everyone. Furthermore, trainings are needed to learn the farmers how to be an entrepreneur themselves, how to develop this local market and why it could

be beneficial for them, as one of the interviewed farmers answered when asking him about local exchange: 'I have never thought of exchanging my products locally, I just only thought of selling my products at the market in Wukro (Participant Ma, 15-03-2015)'. That's why trainings as such are important and necessary, in order to utilize the potential of feeder road development.

11.3 Beyond the case of Adiksandid

As already mentioned a few times, the impact of the road could be much more (e.g. the development of a local market, more small businesses, etc.) especially if the government would implement the above mentioned policy recommendations. However, one should keep in mind that in the case of Adiksandid, a URRAP and therefore a relatively 'young' road was studied. Therefore, some of the outcomes could be somewhat limited, as it may take some more time for other impacts to develop and occur. Because of these reasons it would be very interesting to include a non-URRAP road in further research to see what the impacts could be even more.

Furthermore, as this value chain analyses stopped at the market in Wukro, it would be very interesting to follow the flow of products to other places e.g. Mekelle, Addis Ababa, or even beyond Ethiopia and include other countries, as this may have, especially for the small local farmers, great impacts on their production, and therefore prices, income, etc., and or the roles of the traders and other service providers of great importance and therefore considered to have a great impact on the farmers as well.

Lastly, one should keep in mind that every region or place is unique, and therefore the outcomes of this and other studies are very context specific. As this research was for example conducted in the other woreda, Raya Azebo, other outcomes were expected to be found there. Not only because of the age of the road, but also because of the geography, the climate, etc. Therefore, a comparable study would be interesting between two totally different regions, as many things can influence the outcomes of the impacts of feeder road development.

11.4 Summarizing

This research focused on the impacts of feeder road development on employment. The main objectives were to determine the impact of the feeder road on employment, the impact of the feeder road on market access and the relation between these two. The identification of these aspects of feeder roads, employment and market access are useful because not many studies were

conducted about these kinds of relations and therefore this study contributes to fill-up the knowledge gap.

We can conclude that roads do result in new employment opportunities. However, it is not the solution for unemployment and not a way out of poverty itself, although it has great potential. One should implement policies to utilize this potential. Furthermore, even though the road results in new employment opportunities, these are not equally divided: for some places is the road of greater influence. However, as all countries, regions and places are unique in their kind, outcomes of this study are very context specific and should not be generalized.

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APPENDICES

Appendix 1: single issue oral testimonies (SIOT)

Single issue testimonies are interviews that deal with an important issue or event and its influence on the respondents' life. In this research this event is the construction of a feeder road in remote rural areas.

Because it wants to explore how peoples life are affected and how people think about that, closed questions or predefined categories would influence the outcomes . SIOT therefore only uses open questions, and start with general question without mentioning the road. Examples of such very basic questions are:

1. What are the changes in this tabia in general?
2. Road use:
 - a. Do you use the road?
 - b. Why or why not? For what purposes? What distances?
 - c. How often do you use the road?
 - d. On any specific days (e.g. market day) of the week?
2. About the road
 - a. How old is the road?
 - b. What kind of road was there before this road was constructed?
3. Influence of the road
 - a. Did you have expectations about how the road would affect your life?
 - b. If 'yes', what expectations?
 - c. Did anything change after the road construction? If 'yes'; how/why?
 - d. What does the road bring you (e.g. goods/people/services)?
 - e. What is good and bad about the road?

Crucial in this method are the follow-up questions that mainly ask people to further elaborate on their statements.

The questions above are the core questions that should bring up the different narratives. However, as introducing questions that will provide information about the respondent, first starting with some general information about the respondent and his or her daily activities.

In an exploratory phase of research, single issue oral testimonies are relevant because they move beyond generalizations because they result in very personal data. The advantage is that without predefined ideas of what kind of development a certain event might bring, this method explores the perceptions and experiences of local people. This is useful in defining narratives or variables that are relevant for further indebt research.

For this research, anyone above 18 years old, both male and female, can and will be included. It is the responsible of the researcher to assure the widest possible variety in respondents by

- Age;
- Gender;
- Different times of day;
- The place along the road.

As described above, this method only uses open questions and no predefined categories or narratives. However, it is useful for preparation to think of potential themes that respondents might relate to. The findings in literature suggest that the following topics might be brought up by the respondents:

- Employment;
- Income diversification;
- Increased production;
- Improved market access;
 - a. Import
 - b. Export
- New and more diversified products;
- Migration;
- Local market development;
- Improved healthcare;
- Increased access to education;
- Etc.

Appendix 2: topic list households Adiksandid

Data collection type: semi-structured interviews

Topic: Market access, employment and role of government (general)

Sub-question(s): 1,2,3,4

Location: Kilde Awlaelo –Adiksandid

1. Employment [only proceed if not yet heard before [some data already covered]]:
 - a. Profession;
 - b. Where;
 - c. Since when;
 - d. Before (employment before road construction, any changes);
 - e. Changes in employment opportunities itself (because of road).
2. Market access [some data already covered]:
 - a. Changes:
 - i. Demand/supply (in/ outputs);
 - ii. Production/consumption;
 - iii. Prices and costs;
 - iv. Income.
 - b. Diversity of products;
 - c. Local market development [not in AK];
 - d. Exchange of products and goods;
 - e. Improved quality;
 - f. Value chain market linkages (see topic list 2);
 - g. Increased competition;
 - h. Etc.
3. Market access and employment:
 - a. Effects on employment:
 - i. Opportunities;
 - ii. Losses;
 - iii. Who, where, kind of jobs, etc.
 - b. Substitution effect:

- i. Changes in consumption;
 - ii. Changes in production.
 - c. Labour migration:
 - i. Daily, permanent or temporary;
 - ii. Differences in distances/kushets.
 - d. Role of whole sellers/traders/retailers.
- 4. Role of government:
 - a. (Local) policies (on employment- market access, road-market):
 - i. Some examples of policies:
 - 1. Market and business regulations;
 - 2. Support services;
 - 3. Providing transportation;
 - 4. Providing credits/loans;
 - 5. Stimulating ownership;
 - 6. Motivating;
 - 7. Trainings;
 - 8. Mediating;
 - 9. Etc.
 - ii. How do these policies result in employment?
 - b. Policy gaps;
 - c. Recommendations.

Appendix 3: value chain analysis

Data collection type: semi-structured interviews

Topic: Value-chain analysis

Sub-question(s): 2, 3

Location: Kilde Awlaelo –Adiksandid

1. Input suppliers:
 - a. Activities;
 - b. Who are your buyers and where are they located;
 - c. Where you get your inputs and how (process);
 - d. Costs;
 - e. Volume production and per unit price;
 - f. Reason for producing this product;
 - g. Changes:
 - i. Income;
 - ii. Prices/costs;
 - iii. Quality;
 - iv. Amount.
 - h. Services required and providers;
 - i. Enabling policy environment and other supporting agencies;
 - j. Infrastructure support.
2. Producers of [product]:
 - a. Activities;
 - b. Who are your input suppliers;
 - c. Who are your buyers and where are they located;
 - d. Costs;
 - e. Volume production and per unit price;
 - f. Reason for producing this product;
 - g. Services required and providers;
 - h. Changes:
 - i. Income;

- ii. Prices/costs;
 - iii. Production;
 - iv. Quality;
 - v. Amount;
 - vi. Input suppliers.
 - i. Enabling policy environment and other supporting agencies;
 - j. Contribution of [product] in local economy (employment (who, share));
 - k. Competitiveness of [product];
 - l. Market trends: production, consumption, markets, im/exports, supply/demand, trends, prices;
 - m. Market price: how determined and who determines the price, practice of price fixations, payment, reliability of buyers;
 - n. Constraints/weaknesses/potential along the value chain;
 - o. Market imperfections (entry barriers, role of brokers, lack of market information);
 - p. Infrastructure support;
 - q. Satisfaction;
 - r. Possibilities to upgrade within the chain.
3. Processing & Trading:
- a. Activities;
 - b. Who are your producers;
 - c. Who are your buyers and where are they located;
 - d. Costs;
 - e. Volume production and per unit price;
 - f. Reason for processing/trading this product;
 - g. Services required and providers;
 - h. Process;
 - i. Changes:
 - i. Income;
 - ii. Prices/costs;
 - iii. Production;
 - iv. Quality;

- v. Amount.
 - j. Enabling policy environment and other supporting agencies;
 - k. Contribution of [product] in local economy (employment (who, share));
 - l. Competitiveness of [product];
 - m. Market trends: production, consumption, markets, im/exports, supply/demand, trends, prices;
 - n. Market price: how determined and who determines the price, practice of price fixations, payment, reliability of buyers;
 - o. Constraints/weaknesses/potential along the value chain;
 - p. Market imperfections (entry barriers, role of brokers, lack of market information);
 - q. Infrastructure support;
 - r. Major production districts;
 - s. Major collection and market centers;
 - t. Satisfaction;
 - u. Possibilities to upgrade within the chain.
4. Consumers of [product]:
- a. Activities;
 - b. Where do you buy [product];
 - c. Per unit price, and other (indirect) costs (transportation, time);
 - d. Changes:
 - i. Prices/costs;
 - ii. Quality;
 - iii. Consumption;
 - iv. Location.
 - e. Enabling policy environment and other supporting agencies;
 - f. Competitiveness of [product];
 - g. Major production districts;
 - h. Major collection and market centers;
 - i. Satisfaction.

Appendix 4: topic list consumers market Wukro

Data collection type: semi-structured interviews

Topic: market development

Sub-question(s): 2&3

Location: Kilte Awlaelo – Adiksandid (tahtai and laelai)

1. Value chain:
 - j. Activities;
 - k. Where do you buy product (other than Wukro?);
 - l. Per unit price, and other (indirect) costs (transportation, time);
 - m. Changes (explanation!):
 - i. Prices/costs;
 - ii. Quality;
 - iii. Consumption;
 - iv. Benefits;
 - v. Location.
5. Enabling policy environment and other supporting agencies;
6. Market competition (what do they think of the effect?);
7. Role of traders;
8. Major production districts;
9. Major collection and market centres;
10. Opinion local market development;
11. Role of government
12. Satisfaction.

Appendix 5: topic list farmer association

Data collection type: semi-structured interviews

Topic: Market access, market development and the role of government

Sub-question(s): 2&4

Location: Kilde Awlaelo – Adiksandid (tahtai and laelai)

1. Local market:

- a. Informal (exchanging local products):
 - i. Why informal?
 - ii. Not allowed by government?
 - iii. Forced to buy products at market Wukro?
- b. Semi-formal (near storage, meeting place, cheap products provided, etc.):
 - i. What do the farmers think of these shops;
 - ii. 'good retailers';
 - iii. Obligated to buy these products;
 - iv. Influence on own production;
 - v. Role of government.
- c. Formal local market development (only plans):
 - i. Why not here already?
 - ii. Oppose/forbidden by Woreda government?
 - iii. Force of Woreda to integrate at national market?

2. Production & market:

- a. Enabling policy environment and other supporting agencies;
- b. Contribution of [product] in local economy (employment (who, share));
- c. Market competition;
- d. Market trends: production, consumption, markets, im/exports, supply/demand, trends, prices;
- e. Market price: how determined and who determines the price, practice of price fixations, payment, reliability of buyers;
- f. Constraints/weaknesses/potential along the value chain;
- g. Market imperfections (entry barriers, role of brokers, lack of market information);

- h. Infrastructure support;
 - i. Satisfaction;
 - j. Possibilities to upgrade within the chain.
3. Role of government (include UNION and questions about organisation in general);
 4. Statistics, e.g.:
 - a. Who produces for market and who only for own consumption;
 - b. Own land;
 - c. Etc.

Appendix 6: topic list government officials

Data collection type: semi-structured interviews

Topic: Market access, market development, employment and the role of government

Sub-question(s): 2, 3 & 4

Location: Kilde Awlaelo – Adiksandid (tahtai and laelai) & Wukro

1. (Local) policies (on employment- market access, road-market):
 - a. Some examples of policies:
 - i. Market and business regulations;
 - ii. Support services;
 - iii. Providing transportation;
 - iv. Providing credits/loans;
 - v. Stimulating ownership;
 - vi. Motivating;
 - vii. Trainings;
 - viii. Mediating;
 - ix. Etc.
 - b. How do these policies result in employment?
2. Market:
 - a. Enabling policy environment and other supporting agencies;
 - b. Market price: how determined and who determines the price, practice of price fixations, payment, reliability of buyers;

- c. Constraints/weaknesses/potential along the value chain;
 - d. Market imperfections (entry barriers, role of brokers, lack of market information).
3. UNION Wukro (organisation in general):
 - a. Retailers (also in general; do they have certain agreements);
 - b. Providing cheap products;
 - c. Etc.
4. Role of market researchers and cooperative association;
5. Local market development:
 - a. Reasons for developing one;
 - b. Why not yet present;
 - c. Regulations;
 - d. Better not to have local market?
6. Employment:
 - a. Opportunities created (since when, where, stability, etc.):
 - i. Day labourers;
 - ii. Migration;
 - iii. Small businesses.
7. Differences in policies and opportunities between TT and LL;
8. Policy gaps;
9. Recommendations;
10. Statistics:
 - a. Migration;
 - b. Employment;
 - c. General demographics.
11. Local and Woreda official reports and documents.

Appendix 7: topic list market researcher

Data collection type: semi-structured interviews

Topic: Market and the role of government

Sub-question(s): 2, 3 & 4

Location: Kilde Awlaelo – Adiksandid (tahtai and laelai) & Wukro

1. Organisation in general:
 - a. Tasks;
 - b. When established;
 - c. Funds;
 - d. Role of government;
 - e. Etc.
2. Activities:
 - a. How informing farmers;
 - b. Who benefits from this information;
 - c. What is the impact;
 - d. Changes.
3. Market related questions:
 - a. Market trends, etc.
4. Influence of the road;
5. UNION (organisation in general):
 - a. Providing cheap products (impact, opinion about org., etc.);
 - b. Role of retailers (specific tasks for association, like agreements);
 - c. Influence on small businesses (obligate them to sell these products, any benefits)?
6. Increased market competition;
7. Changes in prices and income;
8. Market development (informal, semi-formal and formal):
 - a. Why not yet market;
 - b. Influence government;
 - c. What they think;
 - d. Etc.

9. Positive and negative effects improved market access:
 - a. Opportunities and benefits;
 - b. Losses;
 - c. For who, where, etc.
10. Role of government
 - a. Not within organisation but in general (market, etc.);
 - b. Policy gaps;
 - c. Recommendations.

Appendix 8: topic list retailers

Data collection type: semi-structured interviews

Topic: Market, employment and the role of government

Sub-question(s): 2, 3 & 4

Location: Kilde Awlaelo – Adiksandid (tahtai and laelai) & Wukro

1. Role of retailer:
 - a. Activities & process;
 - b. Who are your producers;
 - c. Who are your buyers and where are they located (why coming to farmers, etc.);
 - d. Costs & benefits;
 - e. Reason for processing/trading this product;
 - f. Strategies;
 - g. Represented by certain organization (e.g. agreement with tabia);
 - h. Operating in certain networks only (and their reasons for that);
 - i. Changes:
 - i. Income;
 - ii. Prices/costs;
 - iii. Quality;
 - iv. Amount;
 - v. Their role in general (since when present, etc.).
 - j. Enabling policy environment and other supporting agencies;

- k. Market competition;
 - l. Market trends: production, consumption, markets, supply/demand, prices;
 - m. Market price: how determined and who determines the price, practice of price fixations, payment, reliability of buyers;
 - n. Constraints/weaknesses/potential along the value chain;
 - o. Market imperfections (entry barriers, role of brokers, lack of market information);
 - p. Infrastructure support;
 - q. Major production districts;
 - r. Major collection and market centres;
 - s. Satisfaction;
2. Local market development in Adiksandid
 - a. Include questions about the informal, semi-formal and formal market;
 - b. Any changes (e.g. before bigger informal local market).
 3. What is their view about the farmers at the market, etc.

Appendix 9: topic list small businesses

Data collection type: semi-structured interviews

Topic: Market access, employment and the role of government

Sub-question(s): 2, 3 & 4

Location: Kilde Awlaelo – tahtai Adiksandid

1. General questions business:
 - a. Since when;
 - b. How established (governmental support);
 - c. What kind of products;
 - d. Costs and income;
 - e. Inputs;
 - f. Retailers.
2. Influence of road;
3. Differences within and between the two tabia's;
4. Why owners mainly women;

5. Market competition;
6. Changes in prices and other market trends;
7. Local market development (include semi-formal governmental cheap products!)
 - a. Influence UNION or other governmental organisations;
 - b. Impact;
 - c. Obligated to sell those cheap products;
 - d. Benefits;
 - e. Satisfaction.
8. Governmental shops providing cheap products etc.:
 - a. Who are the owners;
 - b. What do they sell;
 - c. What are their activities and how do they get their products;
 - d. Paid and supported by government;
 - e. Other governmental support;
 - f. Benefits;
 - g. Obligated, why selected;
 - h. Out of own interest;
 - i. Since when, how established, etc.
 - j. Satisfaction.

Appendix 10: topic list youngsters association

Data collection type: semi-structured interviews

Topic: job opportunities and labour migration

Sub-question(s): 1, 2, 3

Location: Kilde Awlaelo – Adiksandid (tahtai and laelai)

1. Job opportunities:
 - a. What;
 - b. Where;
 - c. Who;
 - d. Wages;

- e. Influence of the road;
 - f. Statistics.
- 2. Labour migration (distinguish short vs. long term; focus only on national scale):
 - a. What;
 - b. Where;
 - c. Who;
 - d. Wages;
 - e. Etc.;
 - f. Influence of the road;
 - g. Statistics.
- 3. Day labourers (and other (long term) labour migrants):
 - a. Opportunities;
 - b. What;
 - c. Where;
 - d. Wages;
 - e. Since when;
 - f. Stability;
 - g. Reasons;
 - h. Positive or negative;
 - i. Influence of the road;
 - j. Statistics.
- 4. Negative effects of road on employment:
 - a. Besides opportunities and benefits; also losses?
 - i. For who, where, kind of jobs, etc.
- 5. Increased market competition;
- 6. Changes in prices and income;
- 7. Local market development;
- 8. Role of retailer in general;
- 9. Role of government.

Appendix 11: list of participants

Participant	Gender	Age	Field of Expertise	Date	Location	Translator
Participant A	male	24	-	11/02/2015	Bagea Delwo	Kebede Manjur
Participant B	male	20	-	19/02/2015	laelai Adiksandid	Teklegiorgs Gebremeskel
Participant C	female	40	-	23/02/2015	May Quiha	Teklegiorgs Gebremeskel
Participant D	female	32	-	27/02/2015	Hade Alga	Teklegiorgs Gebremeskel
Participant E	female	18	-	19/02/2015	tahtai Adiksandid	Teklegiorgs Gebremeskel
Participant F	female	30	-	28/02/2015	Were Abaye	Teklegiorgs Gebremeskel
Participant G	female	25	-	28/02/2015	Were Abaye	Teklegiorgs Gebremeskel
Participant H	male	48	-	23/02/2015	May Quiha	Teklegiorgs Gebremeskel
Participant I	male	26	-	28/02/2015	Were Abaye	Teklegiorgs Gebremeskel
Participant J	male	63	-	27/02/2015	Hade Alga	Teklegiorgs Gebremeskel
Participant K	female	20	-	27/02/2015	Hade Alga	Teklegiorgs Gebremeskel
Participant L	female	20	-	24/02/2015	May Quiha	Teklegiorgs Gebremeskel
Participant M	male	48	-	23/02/2015	May Quiha	Teklegiorgs Gebremeskel
Participant N	male	38	secretary tabia administration	18/04/2015	tahtai Adiksandid	Bahta Setegn
Participant O	male	44	secretary tabia administration	02/05/2015	laelai Adiksandid	Bahta Setegn
Participant P	male	42	owner of a shop	18/04/2015	tahtai Adiksandid	Bahta Setegn
Participant Q	male	35	chairman youngster association	04/05/2015	tahtai Adiksandid	Bahta Setegn
Participant R	male	38	rural development worker	19/03/2015	laelai Adiksandid	Bahta Setegn
Participant S	male	50	-	13/03/2015	laelai Adiksandid	Bahta Setegn
Participant T	female	35	-	14/03/2015	laelai Adiksandid	Bahta Setegn
Participant U	male	50	-	13/03/2015	laelai Adiksandid	Bahta Setegn
Participant V	male	50	-	13/03/2015	laelai Adiksandid	Bahta Setegn
Participant W	male	39	tabia head	21/03/2015	laelai Adiksandid	Bahta Setegn
Participant X	male	59	-	13/03/2015	laelai Adiksandid	Bahta Setegn
Participant Y	female	25	-	28/02/2015	Were Abaye	Teklit George
Participant Z	male	36	retailer	23/04/2015	Wukro	Bahta Setegn
Participant Aa	male	33	-	20/03/2015	tahtai Adiksandid	Bahta Setegn
Participant Ba	female	30	-	16/03/2015	tahtai Adiksandid	Bahta Setegn
Participant Ca	male	37	-	17/03/2015	tahtai Adiksandid	Bahta Setegn
Participant Da	male	50	-	13/03/2015	laelai Adiksandid	Bahta Setegn
Participant Ea	male	56	-	17/03/2015	tahtai Adiksandid	Bahta Setegn
Participant Fa	male	42	woreda government expert	20/04/2015	tahtai Adiksandid	Bahta Setegn
Participant Ga	male	25	-	16/03/2015	tahtai Adiksandid	Bahta Setegn
Participant Ha	male	46	agricultural expert	18/04/2015	Wukro	Bahta Setegn
Participant Ia	female	44	market researcher	23/04/2015	Wukro	Bahta Setegn
Participant Ja	female	22	-	16/03/2015	tahtai Adiksandid	Bahta Setegn
Participant Ka	male	45	-	16/03/2015	tahtai Adiksandid	Bahta Setegn
Participant La	male	38	chairman cooperative association	04/04/2015	laelai Adiksandid	Bahta Setegn
Participant Ma	male	32	-	15/03/2015	tahtai Adiksandid	Bahta Setegn