A THOUSAND HILLS OF HEALTH INSURANCE

Including the poorest groups in Rwanda
through community based health insurance

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In November 2012 I received confirmation that I had the opportunity to do field research in my internship country of choice, Rwanda. The country, with is horrible past, has always intrigued me and I was excited to start my first trip to Africa to this special destination. In February 2013 I stepped on an airplane to Kigali with two of my fellow students, Frida Nyberg and Juliana Marquez Mancini and I could not have imagined what a great experience was in front of us. The three of us found a house in Kigali which became or home only after a few weeks. After field work preparation, struggles with bureaucracy and meetings with two students from the National University of Rwanda, we could finally start our fieldwork after six weeks. To conduct household questionnaires in remote villages in the valley during the rainy season, meeting people who had never been in contact with someone from Europe, made deep impacts on me. The experience in the field and the whole internship acquainted me with the beauty of Rwanda, her complex history, enduring problems and the strive to overcome poverty. I have had the pleasure of meeting new friends and gaining new insights along the way.

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Murakoze cyane!

Anouk Zeekaf
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Executive Summary

Community based health insurance is a hot-topic in the academic world of development experts. There are a lot of different insurance systems, empirical studies are scarce and comparative studies are especially hard to carry out as no health insurance system and no context is the same. Based on field research done in Rwanda and a theoretical comparative study of health insurance system in five other developing countries, the status of the health insurance system in Rwanda is analyzed, with a special focus on the poorest groups in society. The research which focuses on three different geographical spaces in and around Kigali tries to find the bottlenecks in the community bases health insurance system. In the developing world Rwanda's health insurance system is famous for reaching adhesion rates covering almost the entire nation and with that reaching the poorest groups in society.

Results of the field research and the theoretical comparative study show that the poorest groups in Rwanda are more included in the health insurance system than poor groups in other developing countries. Although one-third of the poorest groups is still not insured in Rwanda, specific pro-policies have beneficiated many of the intended target groups. The achievement of such high adhesion rates, even if they are lower than what the government claims them to be, is remarkable for a developing country. Although Rwanda has several context specific advantages that make health insurance policies and specific pro-poor policies easier to implement, different parts of the Rwandan system could be tried in other developing countries.

Key words: *CBHI, health insurance systems, barriers to access health care, equity, inclusion of the poorest groups, pro-poor policies, financial sustainability, urban-rural disparities, Rwanda*

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List of Abbreviations

CBHI	Community based health insurance
CDB	Central Business District
DHS	Demographic and Health Survey
DRC	Democratic Republic of the Congo
GDP	Gross Domestic Product
GoV	Government of Rwanda
HDI	Human Development Index
IMF	International Monetary Fund
MDGs	Millennium Development Goals
MdS	Mutuelle de Santé
MINALOC	Ministry of Local Government
MINECOFIN	Ministry of Economic Planning and Finance
MOH	Ministry of Health of Rwanda
NISR	National Institute of Statistics of Rwanda
NUR	National University of Rwanda
OECD	Organization for Economic Co-operation and Development
PBF	Performance Based Finance
RFP	Rwandan Patriotic Front
RWF	Rwandan Franc
RDB	Rwanda Development Board
UN	United Nations
UNDP	United Nations Development Program
UNFPA	United Nations Population Fund
UNICEF	United Nations Children's Fund
WB	World Bank
WHO	World Health Organization

1. Introduction

1.1. Introduction to the theme

This thesis, based on field work, focuses on health insurance for the poorest groups in society in three different geographical spaces (i.e. rural, peri-urban and urban). The underlying basis for this research is expressed in the World Health Report on Health systems (WHO, 2002): 'The denial of access to basic health care is fundamentally linked to poverty – the greatest blight on humanity's landscape'. The Millennium Development Goals (MDGs), the international objectives on poverty reduction adopted by the world community in 2000, show the importance of health care in relation to poverty. In the last decade, more and more research showed that not only economic growth can improve nation's health care status but that health care can in fact accelerate economic growth. Health insurance is one of the factors which improves access to health care, also subsidizing (part of) the health insurance system for specific target groups by national governments can help include poor groups in society rapidly. Health insurance can reduce financial barriers to health care access and provide protection of individuals and families against the risk of unpredictable health care expenditures (Ranson 2002; Xu et al. 2007). Having health insurance generally reduces the barrier to access health care and can in that way function as an effective development tool.

1.2. Objective and justification

Community based health insurance is a hot-topic in the academic world of development experts. There are a lot of different insurance systems, empirical studies are scarce and comparative studies are especially hard to carry out as no health insurance system and no context is the same. Based on field research done in Rwanda and a theoretical comparative study of five other developing countries, the status of the health insurance system in Rwanda is analyzed, with a special focus on the poorest groups in society. The research which focuses on three different geographical spaces in and around Kigali, Rwanda's capital, tries to find the bottlenecks in the community bases health insurance system. In the developing world Rwanda's health insurance system is famous for reaching adhesion rates covering almost the entire nation and with that reaching the poorest groups in society. The research tries to analyze if and how these achievements have been reached, which policy measures have been used and which setbacks had to be overcome. Comparing the Rwandan insurance system with other health insurance systems in developing countries will give insight in how different policy mechanisms influence adhesion rates amongst different population groups.

Analyzing these different health insurance schemes will hopefully give insight in which policy mechanism or which combination of policy mechanisms can maximize adhesion rates and ascertain the inclusion of the poorest groups in society.

1.3.   Organization of the study

This first chapter is an introduction to the theme of the thesis and explains the objective and justification of the study. The second chapter provides a background for the analysis made further on in the thesis. First, the relationship between health and development and between health insurance and development is explained in detail. Second, a comparison with health insurance systems in five other developing countries will be made to discover how different health insurance systems work in different contexts. A comparison with other countries that have experiences with CBHI schemes is done in order to try to learn from those experiences and find similarities or contrasts with the Rwandan system.

In chapter three the context of the study area will be described. A brief historical overview will be presented as well as a country profile. In addition, the Rwandan health system and the health insurance system will be explained along with a description of the selected study areas.

Chapter four of this thesis presents the methodology used for this research and elaborates on the process of research design and explains in detail the specific methods used for data collection during the field research period in Rwanda.

Chapter five, six and seven are an analysis of the results of the household questionnaire done in the field and the theoretical comparison made in chapter two. In order to provide a clear structure, the three analyses chapters are divided according to the sub questions presented in chapter four.

The conclusion in chapter eight, where the sub questions and the research question are answered along with some recommendations, finalizes this thesis.

2. Health & Development: a comparative overview

2.1 Introduction

This chapter provides a background for the analysis made further on in this thesis. In the first two paragraphs the relationship between health (insurance) and development is explained. This gives insight in why a sufficient health care system and universal health insurance is important for the economic and social development of a country. In paragraph 2.4 a comparison between five developing countries will be made to discover how different health insurance systems work in different contexts. To make sure these different systems are comparable at different levels, first several variables will be presented as a base for comparison. A comparison with other countries that have experiences with CBHI schemes is done in order to try to learn from those experiences and find similarities or contrasts with the Rwandan system. A discussion of this comparison and the link with the Rwandese system will be made in chapter 7.

2.2 Health & Development

The denial of access to basic health care is fundamentally linked to poverty – the greatest blight on humanity's landscape (WHO, 2000). This is one of the sentences from the World Health Report on Health systems and is a statement of how important health care is in relation to poverty. Good health is a crucial part of well-being, but spending on health can also be justified on purely economic grounds (World Bank, 1993).

Improved health contributes to economic growth in four ways. To start, it reduces production losses caused by worker illness. The most obvious sources of gain are fewer work days lost to illness, increased productivity, greater opportunities to obtain better-paying jobs, and longer working lives (World Bank, 1993).

Secondly, it permits the use of natural resources that had been totally or nearly inaccessible because of disease. Some health investments raise the productivity of land. Land which was first inaccessible due to diseases which were not under control in specific areas is now accessible again because of improvements in prevention and controlling of those diseases (World Bank, 1993).

Thirdly, improved health increases the enrollment of children in school and makes them better able to learn. Schooling pays off in higher incomes (World Bank, 1993). Poor health and nutrition reduce the gains of schooling in three areas: enrollment, ability to learn, and participation by girls. Children

who enjoy better health and nutrition during early childhood are more ready for school and more likely to enroll (World Bank, 1993).

And lastly, it makes room for an alternative use of resources that would otherwise have to be spent on treating illnesses. Spending that reduces the incidence of disease can produce big savings in treatment costs. For some diseases the expenditure pays for itself even when all the indirect benefits – such as higher labor productivity and reduced pain and suffering – are ignored (World Bank, 1993).

The goal of reducing poverty provides a different but equally powerful case for health investments. The adverse effect of ill health are greatest for poor people, mainly because they are ill more often, but partly because their income depends exclusively on physical labor and they have no savings to cushion the blow (World Bank, 1993). They may therefore find it impossible to recover from an illness with their human and financial capital intact. Spending on health is a productive investment: it can raise incomes, particularly among the poor, and it reduces the toll of human suffering from ill health. Good health is a fundamental goal of development as well as a means of accelerating it. Targeting health as part of development efforts is an effective way to improve welfare in low-income countries. Evidence gathered over the past thirty years indicates that in health, unlike income, the gap between poor and rich countries has been narrowing (World Bank, 1993). The detrimental effects of poor health on individuals and households and on the use of resources suggest that better health should lead to better economic performance on the national level (World Bank, 1993). The health status indicator is found to be a highly significant predictor of economic performance (World Bank, 1993). The health status variable is strongly correlated with the educational stock, but the significant association between income growth and health remains strong and of similar magnitude across time periods and for a range of model formulations (World Bank, 1993). In other words, the data does suggest that better health means more rapid growth (World Bank, 1993).

According to Sachs (2004) a revolution in public health thinking and practice is under way, as part of a broader campaign to end extreme poverty. There is a growing recognition worldwide that the time has come to fulfill the long-standing pledge to make health services available for all, including the poorest of the poor (Sachs, 2004). The Millennium Development Goals (MDGs), the international objectives on poverty reduction adopted by the world community in 2000, provide the broad context for this revolution in thinking and practice. The MDGs place a central focus on public health, in recognition of the fact that improvements in public health are vital not only in their own right but also to break the poverty trap of the world's poorest economies (Sachs, 2004). Moreover, the first

MDG — to reduce by half the proportion of the population in extreme poverty (so-called "dollar a day" poverty) by 2015 — cannot conceivably be accomplished if the health goals are not achieved. Societies burdened by large numbers of sick and dying individuals cannot escape from poverty (Sachs, 2004). Sachs (2004) states that there is another reason for developing countries to improve their health systems and for the rich countries to help them. The author states that the rich countries have to understand that there is no chance for political and social stability in the world if they do not help the poor to fight the war against disease. Disease leads to extreme poverty; extreme poverty leads to political instability; political instability leads to state failure; and state failure, alas, leads to violence, criminality, and havens for terrorism, not to mention the international transmission of disease itself (Sachs, 2004).

The establishment of the Commission on Macroeconomics and Health (CMH) of the World Health Organization (WHO) in 2000 also shows a renewed focus on the link between health and poverty. The Commission emphasizes the central role of health in securing economic development, identifying the poorest populations as disproportionally affected by disease and the financial hardships caused by disease (WHO, 2004). According to the Commission the links between ill health and poverty are now well known. Poor and malnourished people are more likely to become sick and are at higher risk of dying from their illness than the better off and healthier individuals are. Ill health also contributes to poverty. People who become ill are more likely to fall into poverty and remain there than healthier individuals are because debilitating illness prevents adults from earning a living. Illness also keeps children away from school, decreasing their chances of a productive adulthood. Today the epidemics of HIV/AIDS, malaria, and TB are worsening, and developing countries are experiencing a rapid erosion of the social and economic gains of the past 20 years (CMH Support Unit, n.d.). In 2000, the Commission on Macroeconomics and Health carried out research to examine the links between health and poverty and to demonstrate that health investment can accelerate economic growth. The Commission focused its work on the world's poorest people in the poorest countries. It demonstrated that impoverished people share a disproportionate burden of avoidable deaths and suffering; the poor are more susceptible to diseases because of malnutrition, inadequate sanitation, and lack of clean water, and are less likely to have access to medical care, even when it is urgently needed. Serious illness can impoverish families for many years as they lose income and sell their assets to meet the cost of treatment and other debts. The Commission also signaled that existing, lifesaving interventions, including preventive measures and access to essential medicines, do not reach the poor. The Commission states that over the coming decade the world can make

sizeable gains against the diseases which have a disproportionate impact on the health and welfare of the poor by investing more money in essential health services and by strengthening health systems. Until recently, economic growth was seen as a precondition for real improvements in health. But the Commission turned this notion around and provided evidence that improvements in health are important for economic growth. It confirmed that in countries where people have poor health and the level of education is low it is more difficult to achieve sustainable economic growth. Health is a cornerstone of economic growth and social development. The Commission showed that increased life expectancy and low infant mortality are linked to economic growth. Healthy people are more productive; healthy infants and children can develop better and become productive adults. And a healthy population can contribute to a country's economic growth. The Commission states that increased investment in health would translate into hundreds of billions of dollars per year of additional income which could be used to improve living conditions and social infrastructure in poorer countries. Improving people's health and life expectancy is an end in itself and one of the fundamental goals of economic growth (CMH Support Unit).

2.3   Health insurance & Development

Health insurance can reduce financial barriers to health care access and provide protection of individuals and families against the risk of unpredictable health care expenditures (Ranson 2002; Xu et al. 2007). Better health insurance will typically reduce inequalities, both in health and income (Deaton, 2003). Anything that helps people recover more rapidly from an illness will reduce the persistence of ill health, which reduces the long-term variance of health across population (Deaton, 2003). Better insurance arrangements can reduce such persistence, and so will not only improve population health, but also improve the distribution of income (Deaton, 2003). Health insurance schemes are supposed to reduce unforeseeable health care costs through calculable and regularly paid premiums. Previous studies have shown how insurance increases health-seeking behavior and reduces out-of-pocket (OOP) expenditures for medical treatment (Dekker and Wilms, 2010).
In countries with large formal sectors, insurance contributions can easily be collected through payroll deductions or taxation (Woolhandler and Himmelstein 2002). In many developing countries, large proportions of the population work in the informal sector, limiting the ability to generate financial resources through payroll deductions or taxes. Community-based health insurance (CBHI) collects resources from individuals who voluntarily enroll and are often employed in the informal sector. CBHI thus offers an alternative for health insurance in settings where taxes are paid on only a small portion of national income (Bennett 2004; Ekman 2004). The World Health Organization

has pointed out that in those countries with a small formal sector, the only viable way of promoting pooling of financial reserves is at community level (WHO, 2000).Community Health Insurance (CHI) is seen as a promising mechanism to increase access to health care and to generate additional financial resources for health services.

2.4   Comparison of health insurance systems in five countries

2.4.1. Overview

To analyze the supply side of the community-based health insurance (CBHI) system in Rwanda, a comparison will be made between the policies and the effectiveness of the health insurance system in Rwanda and five other developing countries. The health insurance systems of Ghana, the Philippines, China, Uganda and Colombia will be described in this chapter and analyzed and compared in chapter 7. The health insurance systems in the countries described above are different but all have some common features with the Mutuelle de Santé. As the five selected countries have different aspects in common with the Rwandan system, a basis for comparison had to be made. Five different variables which are important aspects of the Rwandan system were selected in order to have on overview of how and on which components the selected countries are comparable with the Rwandan system (See matrix 2.1 for an overview).

The first variable illustrates if the health insurance system in a country is community-based. In a lot of countries, different small-scale communities start their own system to pay for their health insurance. After some years, these small-scale initiatives blend with regional or even national insurance systems. As community based health insurance systems exist on various levels and scales, a country's health insurance system is also considered community based in this comparison if it only has small scale community based health insurance projects incorporated in their national system.

The second variable shows if the health insurance system in a country is a nation-wide system. In some countries there is no national (government) system but is risk pooling only an option in certain districts or even only in some villages. A health insurance system is considered a nationwide system when in principle every citizen has the possibility to join the same system.

The third and fourth variable look specifically at how the poorest groups in a country are included in the health insurance system. The third variable shows if the annual premiums are income dependent, in other words if there are specific premiums depending on people's income level. The fourth variable points out if the government has special policies to include (or pay for) the poor. This can for example mean that a national or local government pays (part of) the annual premium for the poorest groups under certain conditions.

The fifth variable demonstrates if the health insurance system is a decentralized system. Discussion between scholars exists if a decentralized health insurance system is more effective and has the possibility to reach higher adhesion rates than an insurance system which is not decentralized. For this reason, decentralization is an interesting variable to include in the comparison between all countries.

Matrix 2.1 is an overview of the five selected countries and the five selected variables. For each variable there is stated in the Matrix whether or not the variable is present in that specific country.

Matrix 2.1 Country comparison of health insurances based on five variables

	Community based	Nationwide system	Income dependent premiums	Special pro-poor policies/subsidies	Decentralized system
Ghana	√	√	X	√	√
Philippines	√	√	√	√	√
China	√	X	X	√	√
Uganda	√	X	X	X	√
Colombia	X	√	X	√	√

2.4.2 Ghana

The health insurance scheme

To reduce inequalities in health, to ensure equitable allocation of resources and to increase overall resources to the health sector, Ghana has over time implemented a number of financing reforms. Public user fees were introduced into the public health system in 1985 and were intended to fill the financing gap in the provision of comprehensive health services. However the benefits of user fees were extensively challenged with respect to equity in access of health care especially for the poor (Nyonator & Kutzin, 1999; Waddington & Enyimayew, 1990, 1989). In the 1990s Ghana started experimenting with various community based health insurance schemes in a series of pilot projects to study the effects and optimal design of CBHI. Subsequently, in fulfillment of the 2000 election campaign promise, the incoming patriotic party passed the National Health insurance Act (Act 650) in 2003 in a bid to eliminate user fees (associated with the opposition party) and improve access to health care especially for the poor and vulnerable. The Ghana National Health Insurance

Scheme (NHIS) is unique in that it is a combination of both Social Health Insurance and Mutual Health Insurance concepts. At the centralized level, the NHIS is regulated by the National Health Insurance Authority (NHIA), which also plays a key role in guiding management of the National Health Insurance Fund (NHIF) (Jehu-Applah et al., 2011).

The National Health Insurance Scheme (NHIS) is to replace out of pocket fees at point of service as a more equitable and pro-poor health financing policy. The NHIS is publicly financed by a national health insurance fund. The fund has three main sources. The first, making up about 70% of the fund is a 2.5% value added tax (VAT) known as the National Health Insurance Levy. The second, making up about 20 – 25% of the fund is 2.5% of contributions of Social Security and National Insurance Trust (SSNIT) contributors who are predominantly public and private formal sector employees. Because of the direct income deductions SSNIT contributors do not pay an out of pocket premium. The third is out-of-pocket premiums ranging between GH¢7 ($5) to GH¢48 ($34) from the non SSNIT contributors – who are mainly informal sector workers. In theory, non SSNIT contributor out of pocket premiums are income adjusted. In practice, to assess non formal sector incomes is almost impossible and many district scheme offices simply apply a flat rate. Additionally everybody, whether SSNIT or non SSNIT contributor pays an annual registration fee of approximately GHC 4 ($2) (Aryeetey et al., 2013).

Defining the poor

Ensuring equity in enrollment through identification of and premium exemptions for individuals and groups without adequate financial resources to pay referred to in the NHIS law (LI 1809) as indigents or the "poorest of the poor", is one of the stated goals of the NHIS. The effective realization of the goal of exempting the poorest of the poor from out of pocket health insurance premium payments remains a major challenge in part because of difficulties in identifying and therefore being able to target this group. This problem of identification is not new, and has beset the implementation of other policies targeting groups that may have difficulty in paying out of pocket fees for essential services in Ghana. According to the Legislative Instrument (LI 1809) that accompanied the NHIS, a person shall be identified as an indigent and exempted from premium payments under four main criteria. These are (i) that the person is unemployed and has no visible source of income, (ii) does not have a fixed place of residence according to standards determined by the scheme, (iii) does not live with a person who is employed and who has a fixed place of residence and (iv) does not have any identifiable consistent support from another person. Observation and experience over the years since LI 1809 was passed suggests that effectively these criteria do not identify the poorest of the poor in Ghana. Hardly anyone qualifies for an exemption with their strict application despite

observations that many are not enrolled because of difficulties in paying the non SSNIT contributor out of pocket registration fees and premium. (Aryeetey et al., 2013).

Enrollment and the poor

Since 2004 NHIS coverage has expanded significantly and by June 2009 there were a total of 145 District Mutual Health Insurance Schemes (DMHIS) and 55% of the population enrolled. Empirical evidence shows, however, the NHIS may not be pro-poor (Asante & Aikins, 2008; GSS, 2009; Sarpong et al., 2010; Sulzbach, Garshong, & Owusu-Banahene, 2005).

The study of Jehu-Applah et. al. (2011) shows some notable differences across income quintiles. Looking at the total sample 30% are currently enrolled, 14% are previously enrolled and 56% have never enrolled in the NHIS (Jehu-Applah et al., 2011). The researches have split up their sample group in five income quintiles where Q1 is the quintile with the poorest households and Q5 the quintile with the richest households. Households in the richest quintile are significantly more likely (41%) to enroll compared to the poorest quintile (27%) indicating inequitable access to NHIS (Jehu-Applah et al., 2011). Interestingly, the research reveals that among the poor, the core poor (Q1) have slightly better access (27%) compared to the poor Q2 (25%) (Jehu-Applah et al., 2011). They also find higher current enrollment in rural areas (19.2%) compared to urban areas (10.8%), even though overall 31.9% of rural residents have never enrolled compared to 23% of urban residents (Jehu-Applah et al., 2011). Inability to afford renewal payments was cited as the main reason, with the poorest households (68%) less able to afford compared to richest households (44%). Low satisfaction with provider care (6%) was another reason for non-renewal (Jehu-Applah et al., 2011).

Policy implications

The study of Jehu-Applah et. al. (2011) concludes with some policy implications. First, for the equity goal of the NHIS to be achieved better identification of the poor is needed and provision of premium exemptions needs to be more aggressively pursued. Second, to stimulate voluntary enrollment of the poor, policy should note that scheme factors have the strongest influence on decisions to enroll. Third, to attract and retain the rich policy should focus on provider factors such as quality of care in addition to scheme factors. Fourth, to retain members policy should allow flexibility of premium payments to make insurance more affordable to poor households. Finally, given that both current and previous enrollment are influenced by determinants differentially across socio-economic quintiles extending enrollment will require recognition of all these multiple factors as precursors to more effective interventions to stimulate enrollment.

2.4.3 Philippines

The health insurance scheme

The Philippines have initiated a social health insurance (SHI) programme 42 years ago and holds many lessons for the development of such schemes in other low and middle-income countries. PhilHealth is the national health insurer and was formed in 1995 as a successor to the Medicare programme as this scheme failed to extend coverage to the poor. The passage of the RA 7875 (National Health Insurance Act) in 1995 created PhilHealth, responsible for managing and developing the National Health Insurance Programme (NHIP)(Hindle et al., 2001). A major policy goal was to achieve universal coverage by the year 2010. Greater administrative efficiency was to come from merging strategic planning, operations and financial management functions. In 1998 PhilHealth set up regional offices, which initially only processed claims, but now also manages contributions, conducts marketing campaigns, and local operations research (Obermanna et al., 2006).

Defining the poor

PhilHealth has four membership categories: (i) Formally employed workers. Both employer and employee contribute 1.25% of the employee's salary to PhilHealth. (ii) Indigents. Central government pays 50–90% of the Peso 1200 (Euro 17) annual premium, while the Local Government Units (LGUS) pay 10–50% of the cost (depending on their financial status). (iii) Retirees, also referred to as non-paying members. This group includes all retirees (i.e. above 60 years), who have made a minimum of 120 monthly premium contributions. (iv) The individual paying program (IPP) is for all those not eligible for one of the three other programmes. The fixed annual premium of P 1200 is relatively cheap for self-employed professionals, but prohibitively expensive for many farmers and other workers in the informal economy. Under each member category, the legal dependants of the principal member (spouse and all children below 21 years of age, as well as parents and children above the age of 21 years, who are physically or mentally handicapped) are also entitled to standard benefits (Obermanna et al., 2006).

Enrollment and the poor

In 2004, the population coverage was around 70%, with formal sector workers comprising 65% of all enrollees (43% are private sector employees and 22% are government employees) (Obermanna et al., 2006). Political efforts since 2000 have led to large-scale enrollment of indigents, although sustaining this enrollment will be a major challenge. With respect to the role of community-based health insurance schemes in reaching universal coverage, PhilHealth has gradually moved from

cooperation and accreditation of such schemes towards their incorporation into the national program (Obermanna et al., 2006).

For the poor, the indigent's category, the annual premiums are (partially) paid by the national and local government depending on their financial status. However, there is an uncertainty in the out-of-pocket payments which makes the coverage of medical expenditures not always a certainty when enrolled in PhiHealth. At present, health care providers set prices for their services, which PhilHealth reimburses up to a fixed amount. PhilHealth thus fixes the risk that it bears. For the patient, however, there is considerable uncertainty about the extent of out-of-pocket payments and he effectively bears the risk of uncontrolled pricing (Obermanna et al., 2006).

Furthermore there is a lack of facilities which makes enrolling in PhlilHealth unattractive for the indigents, especially when living in rural areas. PhilHealth accredits hospitals, which meet certain (moderate) standards, without considering location and the needs of the health system. Once a hospital is accredited, PhilHealth reimburses claims provided the hospital follows administrative rules. Outside of the large cities, it can often be difficult to find a hospital in order to avail of the PhilHealth benefits. Thus, many politicians (who enroll the indigents) and patients alike do not see an immediate benefit in being a PhilHealth member. A good part of the low utilization of medical care can be attributed to the simple lack of facilities. With 65% coverage, PhilHealth comprises only 9% of total health care expenditures (Obermanna et al., 2006).

At last, the identification of the poor is time consuming and prone to political influence (the so called "politically indigent" enrolled by the Local Government Units). A quick and reliable identification mechanism would be useful (Obermanna et al., 2006).

Policy implications

Besides the need to improve PhilHealths technical and operational efficiency, the SHI has the advantage of being an income-related contribution scheme (thus promoting equity) and is compulsory. Whilst SHI is regulated by political decision, its daily management is largely independent from political interests since it is "ring-fenced" from the political bargaining process of allocating government tax expenditure (Obermanna et al., 2006).

The community based schemes in the Philippines were not financially viable in the long run and are highly dependent on the local political situation. A national scheme is the best possible risk pooling and allows for financial stability. It can also be administered more efficiently. However, cultural attitudes and health-seeking behavior should be taken into account (Obermanna et al., 2006).

Improvements in the quality of health services make the demand for services go up and with that the demand for health insurance (Obermanna et al., 2006). Therefore improvements in the health care quality should be made including the access to drugs, which is a pressing issue in this country. Besides this, as mentioned before, geographical accessibility is far from optimal right now and improvement will also help broaden coverage.

Despite many difficulties, the Philippine experience shows that it is more important to have the institutions in place than to get technical details right straight away. In the case of PhilHealth, a (small) group of dedicated people is now working on the margins, using any favorable political climate trying to achieve the corporation's goals (Obermanna et al., 2006).

2.4.4   China

The health insurance scheme

China has a long tradition of insurance schemes. From the 1950s through the 1970s, the Rural Cooperative Medical System (CMS) was an integrated part of the overall collective system for agriculture production and social services in China (You and Yasukia, 2009). The CMS was primarily financed by the welfare fund of the communes (collective farming). It organized health stations, paid village doctors to deliver primary care, and provided prescription drugs. Until mid-1970, CMS had covered 90% of all villages and provided widespread financial mechanisms for farmers to access basic health services in rural China (You and Yasukia, 2009). However, with the transition from the collective system to the Household Responsibility System in 1979, the communes disappeared, without its funding base, the CMS collapsed, leaving around 90% of all peasants uninsured (You and Yasukia, 2009). During the late 1980s and early 1990s, there was an attempt to re-establish CMS. These early insurance schemes typically pooled money from the whole population (10,000–50,000) of a township. The number of the schemes grew slowly, and they varied a great deal. However, most of these attempts were difficult to sustain for a long time, especially in the poor rural areas, because of inadequate funding, dwindling political interest and poor management (You and Yasukia, 2009). Very few of these schemes survived into the new millennium. In 2003, 96% of rural households in China lacked medical insurance (You and Yasukia, 2009). The ability to pay became an important determinant of access to health care. To address these problems, the China National Rural Health Conference was held in Beijing in October of 2002. The Central Committee of the Communist Party of China and the State Council released a "Decision on Further Strengthening Rural Health Work", the first document on rural health issues from the Central Committee since the founding of the People's Republic of China. This document confirmed the aim, focus and main measures of rural health work.

It stresses that the establishment and improvement of the New Cooperative Medical Scheme (NCMS) should be preceded by pilot projects at all localities and followed by an evaluation of experiences and the gradual promotion of the system (You and Yasukia, 2009). The NCMS began in 2003 and includes some features that distinguish it from the old CMS. The NCMS is a scheme of voluntary mutual assistance among participating farmers against catastrophic illnesses. The voluntary feature was adopted to overcome the public's resistance to paying any money into a government-run insurance program because people learn that local governments have imposed many taxes and fees on them and often misused the funds collected (You and Yasukia, 2009). The NCMS is guided, organized and conducted by the government and financed in part through flat-rate household contributions (the poor and certain other groups have their contributions subsidized) and in part through government subsidies (You and Yasukia, 2009). It operates at the county level rather than village level, and exhibits variations in design and implementation across counties. Management departments have been established from central to local governments to manage and supervise the implementation of the scheme. The NCMS is financed by the contributions from the central government, local governments, and individuals. In 2008, the central and local government will each subsidize RMB 40 (USD 5,6) per farmer and the farmer's paying will also be required to pay RMB 20 (You and Yasukia, 2009). The increase in government funding in the past years is expected to ensure that NCMS will cover the entire rural population of China by the end of 2008 (You and Yasukia, 2009).

Defining the poor

To improve medical relief for the poor, a medical assistance (MA) system has been established in some localities, emphasizing the supplementary relationship with the NCMS, rendering assistance to poverty-stricken rural residents, especially the poorest households through subsidizing the household premium using government funds and donations, or exempting them from co-payments for essential health care services (You and Yasukia, 2009). The MA scheme is aimed at assisting poor and certain other types of households, as well as near-poor households facing high health care expenses (Wagstaff et al., 2009). In this case, the annual premium is waived of those households who are identified as "poor" households (about 5% of total households) (Zhang and Wang, 2008). China's Premier Wen Jiabao, at the National People's Congress on March 5, 2008 announced that China will increase its healthcare spending by 25% in 2008, with a budget of RMB 83.2 billion ($11.7 billion) to make health care more affordable to the poor (You and Yasukia, 2009).

Enrollment and the poor

After the collapse of the old RCMS system, insurance coverage dropped to 12,8% for rural residents in 1993 and by 1998, only 9.5% of the rural population was insured (Liu, 2004). As a result of the modest program fee, government subsidy, strong government mobilization ability, and medical relief for the poor, participation rates are extremely high, even in poor areas. In the first three years, the participation rates were around 75%, and increased to 80,7% in 2006 and 85,7% in 2007 (You and Yasukia, 2009). As of June 30, 2007, 726 million farmers in 2448 counties had joined NCMS. However adhesion rates do not show the whole picture. Even if the poorest families have insurance, the co-payment for hospital care for example is so high that they cannot use those facilities because they have to contribute to much out-of pocket money themselves. The premium subsidy alone may not be able to address the issue of inequality of enrollment. Poor farmers are still left out of the scheme due to many possible reasons. First, the subsidized premium may be still too high for the poor households to join RMHC. Second, the co-payment rate might be too high for the poor to access health care service, and therefore they may choose not to join the scheme. Other studies also point out that the high co-payment rate is one of the major barriers for the poor to obtain the benefits from CHI in rural China. Therefore, the subsidized CHI scheme may still favor people who are relatively wealthy (Zhang and Wang, 2008).

Policy implications

While the NCMS reaches high adhesion rates in most counties, the voluntary participation principle of the NCMS leads to considerably high management costs. Another problem with the voluntary participation is that it might give problems with the sustainability of the system. The newly established CHI was a voluntary-based enrollment scheme because the government did not want to impose any financial burden on the farmers. However, there have been great debates on whether the scheme will be sustainable because of the potential impacts of adverse selection; the voluntary CHI scheme would attract a disproportionate share of relatively unhealthy people (Zhang and Wang, 2008).

 Another downside of the system is that local governments are free to choose the benefit package and administrative arrangements of their NCMS according to local conditions, as long as they follow two policy guidelines: voluntary enrollment and coverage of catastrophic illnesses (You and Yasukia, 2009). This can lead to huge varieties between counties and inequalities between people only because they are residents of another county.

Another concern with NCMS is that its budget is too small (only around 20% of the average per capita total health spending in rural areas) to reduce households' out-of-pocket health spending and the risk of catastrophic expenditure (You and Yasukia, 2009). Concerns have also been expressed that the scheme may do little to improve health care access and utilization by the less well off, because of the high co-payments of NCMS, reflecting large deductibles, low ceilings and high coinsurance rates. Indeed, it has been suggested that these costs may reduce the benefits of the scheme to the poor to such a degree that they may be less likely to enroll (You and Yasukia, 2009). Although some schemes exempt poor households from premiums, being poor and lacking the ability to pay additional out-of-pocket spending remains a significant barrier to access. Some people will choose not to go to clinics, or will cease treatment, even though they have joined NCMS. Some schemes might actually redistribute resources from the poor to the rich because the latter could afford to spend more on co-payments for medical care (You and Yasukia, 2009).

Based on the findings, the voluntary nature of individual contribution has strongly influenced the design of NCMS. It has limited the degree to which schemes can pool risk and redistribute resources between healthy and sick, and between rich and poor. The challenges in China are not only extending coverage to the uninsured, but also reducing waste and inefficiencies in health care delivery (You and Yasukia, 2009). More aggressive subsidy or reimbursement policies specifically towards the poor are desired in order to ensure equity of enrollment and access to health care services. In addition to subsidizing the entire premium, reducing co-payment rate of the poor might be another strategy to increase the enrollment of poor households (Zhang and Wang, 2008). Health education might be another strategy in order to increase awareness of the financial risk due to health problem and health care utilization (Zhang and Wang, 2008). However, the results show that under the voluntary-based enrollment policy, the goal of universal coverage of the CHI will not be achievable in the short-run if it is only based on the government subsidy to the premium (Zhang and Wang, 2008). The policy of compulsory enrollment with extensive premium, subsidy/waive and higher reimbursement rate for the poor, or free enrollment with tax-based financing scheme might be better options to reach the goal of universal coverage (Zhang and Wang, 2008).

2.4.5   Uganda

The health insurance scheme

Community Health Insurance (CHI) is one of the mechanisms envisaged in the Ugandan health sector strategic plan 2005/6-2009/10 to finance health services. The Ugandan government abolished user-fees in 2001 in the general wings of public hospitals (Basaza et al., 2008). The provider-based model

of CHI was introduced by these hospitals so as to offer a mechanism for paying for health care that does not directly relate to the time of need of care. Also, CHI was to provide a stable source of income for the hospitals. Despite abolition of user-fees, the out of pocket expenses have kept high thus financial accessibility has remained a challenge and unsustainable (Basaza et al., 2008). The Ugandan government has now put up a program to promote CHI schemes since 2005. A 2006 country inventory of CHI schemes showed low enrollment despite promotion of CHI schemes in Uganda since the mid 1990s. There are 40,000 people enrolled in the schemes out of a target population of over half a million in the districts with schemes (Basaza et al., 2008). Moreover, the total number of schemes has not exceeded 14.

However, an alternative model of CHI has been implemented in Uganda in recent years: the community-owned model where a member organization is actually the insurer (Basaza et al., 2008). A group is defined as people involved in an activity, having a register and minute record of their regular meetings. A group could also be a village (smallest administrative area with a population of 1000 people). There has not been a situation where two schemes operate in the same area. There are also no specific regulations in Uganda limiting the number of schemes. The Ministry of Health is in the process of formulating a draft bill to regulate CHI schemes. The umbrella organization of CHI Schemes in Uganda, Uganda Community Based Health Financing Association has not been able to steer the process of increasing the enrollment into schemes because of limited capacity in the skills and financial resources (Basaza et al., 2008).

Defining the poor

In a small research of two CBI schemes in Uganda Basaze et al. (2008) showed that the incapacity to pay the premium stands out as the single most contributing factor to inability to join the two schemes. Currently, there is no mechanism to enroll those who cannot afford the premium (Basaza et al., 2008).

Enrollment and the poor

Besides incapacity to pay the premium other factors were also important for people to not join the CHI. If the system does not work optimal and/or has many disadvantages, the barrier for the poorest groups to join a CHI are even higher. Disadvantages of the current health insurance which were mentioned in the research of Basaza et al. (2008) were, besides the high premium, long distance from the communities to provider health facilities, poor quality of health care (like cleanliness, long

queues, and absence of some prescribed medicines), lack of trust in financial organizations, poor involvement of the community in the management of the hospital-based CHI model and unattractive benefit packages. If the quality and the infrastructure of a health system are low then it is hard to convince people of the importance of a health insurance.

As in other developing countries a problem in Uganda is also the lack of information and poor understanding of the concepts of CHI (Basaza et al., 2008). A large selection of the communities poorly understand the concept of pooling contributions, even prepayment is associated with inviting diseases (Basaza et al., 2008). Not only is there a misunderstanding of inviting diseases when having health insurance, the study of Basaza et al. (2008) also pointed to misunderstanding of the benefit of CHI: people would complain not to have benefited from the scheme if they do not fall sick – as if one would wish for sickness in order to benefit from the scheme.

A part from misunderstanding it is also not easy to meet the requirements to enroll in a CHI scheme. Most of the schemes in Uganda fixed the requirement that at minimum 60% of any group must join a scheme before enrollment as a measure against adverse selection (Basaza et al., 2008). There are no provisions for alternative contributory arrangements for those who wish to join as single families or groups that cannot enroll up to 60% or 100 families.

Policy implications

It is clear that the health system and with that the health insurance system in Uganda is underdeveloped and a lot of improvements have to be made. The study of Basaza et al. (2008) provides some elements for the inclusion of the development of a national policy on CHI in Uganda. Such CHI policy could be part of a health financing strategic plan with a clear roadmap of how it plans to transit from the current health financing state dominated by inequitable, catastrophic and impoverishing direct out-of-pocket payments to a visionary scenario of universal coverage (Basaza et al., 2008). Besides improving the quality and infrastructure of the health care system, information is needed to raise the understanding of the concepts and principles of CHI, in particular concerning the pooling of contributions and the prepayment of the premiums. The Ministry of Health and the concerned District Health Teams with support of development partners should dialogue with the communities, scheme staff and providers to improve enrollment in the plans (Basaza et al., 2008). Subsidies to the poorest members of the community could increase enrollment and thus access to care (Basaza et al., 2008).

2.4.6 Colombia

The health insurance scheme

In Latin America, medical care is typically provided by public institutions and paid for by governmental single payer institutions. Colombia is an exception: faced with efficiency, equity, and quality problems in the delivery of medical services, in 1993 its government decided to profoundly reform the state-dominated health care sector (Trujillo, 2005). It chose a regulated competition approach, increasing the participation of private health insurers in a way that is, to date, unique in the region (Trujillo, 2005). Reformers hoped competition would lower health care costs and increase quality, while state involvement ensured equity (Trujillo, 2005). The Colombian health reform of 1993 addressed inequities in access to health services by establishing a segmented health insurance policy with solidarity financing by means of a crossed subsidy whereby high income workers contribute a portion of their pay to the poor population. It consisted of health insurance expansion from the worker to the entire family through payroll-linked insurance, formerly limited to the worker (Contributive Regime) and the establishment of a subsidized health insurance for the poorest, selected through a focalization and classification process (Subsidized Regime) (Ruiz et al., 2006).

Financing for the Colombian health system comes from several governmental taxes and individual's contributions through payroll. The contributive plan is financed through a compulsory contribution of 4% of each individual's salary. Workers also contribute with an additional 1% of solidarity contribution for financing subsidies. The subsidized regime also receives financing from general and local taxes. The actual value of the annual contributive plan coverage premium was USD 128.95, the annual subsidized plan coverage premium was USD 69.41 (2001). Colombian Health Social Insurance was intended as a progressive policy with sequential coverage of the population through rapid expansion of Subsidized and Contributive Regimes (Ruiz et al., 2006).

Defining the poor

By the end of 1995, most of the legislation of the Colombian health reform of 1993 had been implemented, resulting in as system with three tiers: (1) a contributory social insurance regime financed by mandatory payroll taxes; (2) a subsidized regime that targets low-income and disadvantaged groups and that, for the most part, is financed with general taxes; and (3) a publicly-financed safety net that provides basic medical services for the uninsured (Trujillo, 2005).

The Subsidized Regime targets its indented population through a system that combined individual means-testing with elements of both categorical targeting (tagging) and self –targeting (Londoño et

al., 2001). There is a crude welfare index that ranks families according to a set of household characteristics, human capital endowment, and reported income. Municipal governments are responsible for conducting a survey among the poorest neighborhoods in the country. All the surveyed families are then ranked into six levels and, in principle, only families in levels 1 and 2 (the poorest) are eligible for subsidized health insurance. Those in level 3 may receive the subsidy only if funding is available and those in the two lowest levels have been taken care of (Londoño et al., 2001). Because there is no guarantee that local governments will receive enough funding to grant the subsidy to all eligible individuals, the subsidized regime gives priority to certain groups defined by easily identifiable characteristics or tags (Londoño et al., 2001).

Enrollment and the poor

Law 100 of the Colombian health reform of 1993 specified a compulsory universal coverage objective, to be obtained by 2001. This universal coverage implies insuring all the population and equaling all health plans to the contributive health services package. Universal coverage under the Contributive Regime is projected for the whole Colombian population in the long term. Empirical evidence from different surveys, such as the Colombian Household Survey (CHS), suggests insurance coverage growth during the first seven years from 15,7% in 1990 (Ministry of Health, 1990) to 57% of the total population (Ruiz et al., 2001). This expansion was due to both new family members affiliated to the Contributive Regime and to poor population covered by the Subsidized Regime. This last group represented 12 954 900 persons for the year 2004 (July) (Ruiz et al., 2006). The largest proportional gains were registered in the lower income quintiles (Londoño et al., 2001). However coverage expansion was stagnant during the 1998–2003 period. This was due to health budget general tax component restrictions, plus the effects of a macroeconomic recession which reduced the formal employment (Ruiz et al., 2006).

Policy implications

The Subsidized Regime improves medical care use for vulnerable groups such as children, women and elderly-groups (Londoño et al., 2001). The research of Londoño et al. (2001) also indicates that the screening of low-income families using decentralized systems and conducted by local authorities is successful in targeting poor individuals in Colombia.
However in the analyses of Ruiz et al. (2006) different notes are made to improve the insurance system in the future. Several socioeconomic variables such as family size, working conditions and family status may restrict access (Ruiz et al., 2006). These conditions should be considered in the

insurance expansion policy (Ruiz et al., 2006). When Colombia made its choice for a social insurance scheme with solidarity financing, it was assumed that universal insurance coverage would be attained at a short term. Social insurance policy included a strategy for the segmentation of the non-insured population in different benefit plans, and an equalization of progressive plans that would be reached in a determined scenario of economic growth and high employment rates. Despite impressive initial gains in insurance coverage, as long as the economy was slow, affiliations were at a standstill. These events led to a multi-segmented social security with unequal gains in wellbeing for the different population groups. This is the scenario of a policy deadlock where the social insurance scheme is continuously forced to expand access while it has to maintain equity and feasibility (Ruiz et al., 2006).

2.5   Conclusion

The denial of access to basic health care is fundamentally linked to poverty. Improved health contributes to economic growth in different ways (reduces production losses, (re)use of natural resources, enrollment of children in school etc.). There is a growing recognition worldwide that the time has come to fulfill the long-standing pledge to make health services available for all, including the poorest of the poor. Health insurance schemes can have a huge influence on the development of health care and access to health care for all groups in society. Health insurance can reduce financial barriers to health care access and provide protection of individuals and families against the risk of unpredictable health care expenditures. Better health insurance will typically reduce inequalities, both in health and income.

To discover how different developing countries try to improve their health care system and especially there health insurance systems, five countries (Ghana, Philippines, China, Uganda and Colombia) were selected and compared on five different variables. The selected variables are components of the Rwandan health insurance system and will be used later on to try to compare all the different systems.

The description of the five different countries shows that CBHI systems exist in many different forms and on many different scales. The way health insurance schemes are built can have important effects on the success factor of a health insurance system. In addition, the manners in which specific population groups are targeted, for example through pro-poor policies can influence the adhesion rates in various ways. The description of the five insurance schemes made in this chapter is a base to compare the five systems on different variables. Through this comparison, which is done in chapter 7, lessons can be learned for each separate variable and the Rwandan system can be tested on those variables.

3. Study area and contextual framing

3.1 Historical overview

3.1.1 Colonization

The great-lake region of Central Africa was ruled by several independent kingdoms before its colonization. The Kingdom of Rwanda had evolved into a powerful expanding reign with its power base in the country we now know as Rwanda. The expanding drift of the former kingdoms is one of the reasons why the historic cultural territory of Rwandese stretches beyond the contemporary borders of the modern Republic. The region has for a long time been an attractive area for human settlement and development due to its favorable climate and fertility.

The German Empire colonized Rwanda in 1980 and it became part of the German East Africa together with Burundi and Tanzania. The German colonization lasted until the First World War. In 1923, Belgium accepted to govern the former German territory along with its existing colony of Congo to the west of Rwanda. In comparison with the Germans, the Belgians paid relatively more attention to the colony to make it more profitable. The Belgians introduced large scale projects in health and education and also brought new crops to the land. Eventually, coffee was also introduced as an export commodity. However, forced adjustments to the food production and labour division did not improve the regional economy and severe famines followed as a consequence. In 1928 and 1929, 30.000 people died and 100.000 people (at that time 7% of the total population) were pushed to migrate to English governed Uganda in the north and the Belgian Congo in the west. Another severe famine took place in 1943 and also caused many Rwandans to move into Congo (Pottier, 2002). Additionally, an unidentified number of Rwandans had left to work in cotton plantation in East Africa and the Congolese mines between 1918 and 1959 (UNFPA, 2005).

In order to ensure their grip of power and control in the colony during times of unrest and starvation the Belgians continued to artificially emphasize the hierarchical power organization, also used by the Germans, this divided people into Tutsi and Hutu. In general, Tutsi were assigned as the elite governing class of the colony because of their supposed difference in ethnicity or the Hamitic myth (Shyaka, 2005). This systematic division of Tutsi and Hutu became a source of political conflict, especially in the period of destabilization after the Second World War. After the Second World War, Rwanda stayed under Belgian administrative authority as an UN mandate until the 1961 referendum which decided if the country should become a kingdom or a republic. Meanwhile, Belgian reformist

tried to stimulate democratic political elections. However, the social stratification of Rwanda's population resulted in violent sequence of events marking the first few decades of independence. The last two years towards the date of the referendum saw the first waves of refugees leaving Rwanda. This marked the beginning of a period of unrest, war and insurgency (UNFPA, 2005).

3.1.2 Independence

In 1962 the Republic of Rwanda officially gained independence. The first decades were marked by cycles of violent conflict between several political fractions. As a result as much as 600.000 refugees left the country in the period between 1959 and 1973 (UNFPA, 2005). Many people of the suppressed groups – in some cases Hutu and in other Tutsi – became refugees in Congo, Uganda and Tanzania. After a military coup in 1973, Rwanda fell into the hand of military leaders. However, Rwandese refugees in Uganda became organized in the Rwandan Patriotic Front (RPF). In 1990 the RPF invaded northern-Rwanda initiating violent conflict (Gérard, 1995). A ceasefire had been signed in 1994 when both sides of the conflict could not get the overhand. Nevertheless, in the same year, the shot down of the plane of the President was the catalyst for the Rwandan Genocide within a few hours. In a course of 100 days between 500.000 and 1 million Tutsi and politically moderate Hutu were slaughtered. International powers failed dramatically to intervene (Henley, 2007).

When the RPF regained control, the former regime with approximately 1.7 million Rwandans fled to Tanzania and the Democratic Republic of Congo (DRC) in fear of repercussions. As order in the country was slowly being re-established it became clear that the entire Rwandese society had been affected. Almost every household lost members and many people were displaced or became refugees through a history of violent conflict that climaxed in 1994. In 1997 and 1998 it was estimated that 80% of the population was internally displaced (Uwimbabazi & Lawrence, 2011). Needless to say, Rwanda had to be rebuild in order to make sure that no Rwandese should ever go through the dreadful days of the 1994 genocide again.

3.1.3 Reconciliation and reform

Rwanda has managed to enter into a period of reconciliation and reforms. In 2003, a national referendum accepted the current reformed constitution. In the same year, Paul Kagame, member of the RPF, became president in the first post-genocide presidential and legislative elections that took place in 2003.

In 2001, the Rwandese government made a start with the Rwanda Global Diaspora Network. The network intended to promote productive investments and savings by establishing a Diaspora Investment Bank (UNFPA, 2005). Furthermore, the network aims to attract knowledge and skills of Rwandese living abroad. However, the majority of displaced people preferred not to return to their original home areas, instead urbanized areas like the capital of Kigali became the major destination for immigration accompanied with economic development (Uwimbabazi & Lawrence, 2011).

As peace has returned in Rwanda itself, the region is far from stabilized. The eastern region of the DRC has since the mid-1990s turned out to become a notorious scene of unrest, with tension and fighting between various rebel groups, former soldiers and the Congolese army. The large presence of natural resources in the area has played a role in the wars in the region and the situation still persists today. In 2008, a UN report accused both Rwanda and the DRC for supporting Tutsi rebel fighting in the DRC. Accusations against Rwanda for supporting rebellions (in particular the rebel group M23) in the DRC has reoccurred and halted foreign donor aid, amongst others from the UK and the Netherlands, to Rwanda in 2012. Rwanda has denied all charges for taking part and financing rebel activities in the DRC. In August 2013, the increased tensions in the region and especially in the city of Goma were even felt on the Rwandan side of the border as Rwandese army troops steered their way towards the border

In terms of political stability Rwanda has received much appraisal and the country is currently considered as one of the safest and most stable countries on the African continent. The current political lead has received appraisal for having achieved strong economic growth and improvements in sector such as health and education. Critics of the current political situation in the country have however pointed out the lack of acceptance of opposition, which is for example reflected in restrictions on freedom on both expression and political association (Human Rights Watch, n.d.)

3.2   Country profile

3.2.1 Geography of Rwanda

Rwanda, also known as the 'Land of a Thousand Hills', is a small landlocked country located in the great-lake region of central Africa south of the Equator. Rwanda is about 70% of the surface of the Netherlands, in absolute terms a surface of 26.228 km^2 (CIA Factbook, 2013). The country borders with Uganda to the North, Burundi to the South, the Democratic Republic of the Congo to the West and Tanzania to the East. Map 3.1 shows the political map of Rwanda and its neighboring countries. The capital city, Kigali, lies at the heart of the country. It represents the political and economic centre of development.

Map 3.1 Political map of the Republic of Rwanda 2012

Source: Men Who Killed Me (2012)

Rwanda is not called 'Land of a Thousand Hills' without a reason, the terrain is dominated by hills and the country lies at an average altitude of approximately 1700 meters above sea level. Rwanda has two rainy seasons per year and vegetation ranges from equatorial forest in the northwest to savanna

in the east. In the periphery zones near the borders some natural reserves can be found, with in the west lake Kivu, to the east Akagera National park, in the south Nyungwe national park and to the northeast the famous National Volcanoes park that with its rich biodiversity constitutes the home for the world's only mountain gorillas.

Rwanda has over the past year put much emphasis on decentralization and since 2006 a new administrative division has been enforced. The administrative division of Rwanda is hierarchical and consists of 5 provinces (North, South, East, West and the city of Kigali), 30 districts, 416 sectors, 2148 cells and nearly 15.000 villages. The village or the 'umudugudu' is the smallest administrative level of the country. The term 'village' might however be somewhat misleading but is must be understood that villages are found both in rural and urban areas (MINALOC, 2013).

The villages are aimed to settle refuges, internally displaced persons and at the same time change the spatial settlement pattern (Uwimbabazi & Lawrence, 2011). Traditionally Rwanda does not have patterns of profiled settlement. Instead, famers used to build their houses near their small scale plot of lands which they cultivate. Sometimes, only small concentrations of houses from the same family could be found but no concentrated villages (ACCRON, 2011).

One aimed benefit of the villages is to make basic serviced to all Rwandese citizen more easy and affordable. Other underlying reasons are also believed to be security, as it is easier to manage more concentrated settlements instead of a widely scattered population. The hierarchical structure of Rwanda makes it also easier to reach people. As every village has their village leader, every cell their committee and every district their board etcetera, policy changes or instructions from the top level can reach the lowest level, and with that a huge part of the nation, in a relatively short period.

3.2.2 Poverty status and social indicators

The Human Development Index (HDI) positions Rwanda in 2012 at 167 out of 187 countries and territories (Human Development Report, 2013). Between 1980 and 2012, Rwanda's HDI value increased from 0.277 to 0.434, an increase of 57% or average annual increase of about 1,4%. Figure 3.1 shows the trends of some HDI indicators from 1980 till 2012. The impact of the genocide in 1994 becomes clear in this figure but also the fast recovery and ongoing positive trend afterwards. However, Rwanda's 2012 HDI value is below the average of countries in the low human development group and below the average of countries in Sub-Saharan Africa (Human Development Report, 2013).

Figure 3.1 Trends in Rwanda's HDI from 1980 till 2012
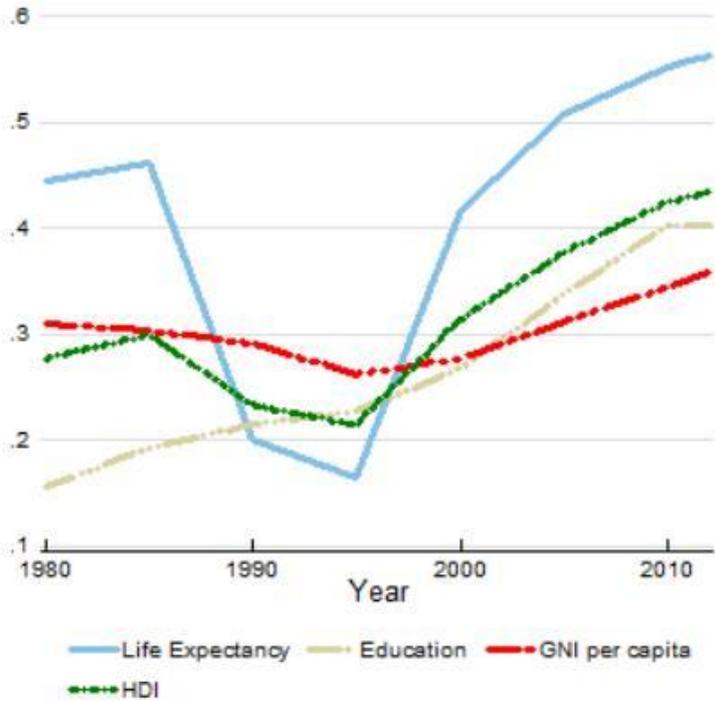
Source: Human Development Report, 2013

In 2006, 56,8% of the Rwandese were living below the national poverty line (UNDP, 2011). Most of this poverty was found outside the cities as 81,1% of the total population lives in rural areas and most of this population is very young, as 42,2% of the total population is aged between 0 and 14 years (UN-Stats, 2011). The challenge for Rwanda's future development is to include this large rural population living from subsistence agriculture into the benefits of perceived economic growth (World Bank, 2011). In addition to this challenge, the population is expected to increase with an average population growth of 2.7% annually between 2010 and 2015 (UN-Stats, 2011).

Rwanda's latest data supports believe in significant change. Government reports reveal that in 2011, 44,9% of the total population was living below the national poverty line. This shows an enormous improvement in the living standards of citizens over the past five years and progress towards the achievement of the MDG's in 2015. Additionally, more people have gained access to safe drinking water from 64% of the population in 2006 to 74.2% in 2010-2011. Rwanda has also made significant progress in reducing maternal mortality, globally the worst performing MDG-goal. Rwanda has managed to bring the rate of 1071 deaths per year in 2000 down to 487 in 2010-2011 (UNDP, 2011). Table 3.1 sums up some of the social development indicators of Rwanda provided by the UN-Stats (2011) and UNDP (2011).

Table 3.1 Social development indicators of Rwanda

Social Indicator	Year(s)	Ratio
Human Development Index (rank out of 187 countries)	2011	0.429 (166th)
Poverty rate (% of total population)	2011	44.9
Population growth rate (average annual %)	2010-2015	2.7
Rural population (% of total population)	2010	81.1
Population aged 0-14 years (% of total population)	2010	42.4
Life expectancy at birth (females/ males in years)	2010-2015	53.9 / 50.0
Access to safe drinking water (% of total population)	2011	74.2
Primary-secondary education gross enrolment ratio (females/males per 100)	2005-2010	93.4 / 93.1
Female third-level education students (% of total students)	2005-2010	43.5

Source: UN-Stats (2011); UNDP (2011)

3.2.3 Economic growth and development

The economy of Rwanda has become one of the fastest growing economies in Africa. The estimated economic growth rates for the last years were 11,2% in 2009, 4,1% in 2010, 6,5% in 2011 and 7,7% in 2013 (CIA Factbook, 2012). Lower growth rates in 2009 can be explained through a delayed impact of the global economic crisis in 2008. Nevertheless, through the last decade Rwanda's economy has proven to be resilient as the average growth rate in the period 2006-2010 was 7,3% annually. This sustained macroeconomic stability is a good sign towards the development of a healthy growing economy; as such the IMF has projected a real GDP growth around 6,8% for future medium-term. The estimated size of the economy in GDP was $5,63 billion in 2010, generating a Gross National Income of $1,150 per capita PPP (World Bank, 2011). The economic growth between 2000 and 2010 is also given in figure 3.2, since 2000 Rwanda has witnessed high growth of GDP, the GNI per capita PPP had doubled. Contemporary, Rwanda's main concern are high global food and oil prices resulting in increased inflation deflating GDP's growth and increasing the daily costs of living.

Figure 3.2 Rwanda's economic growth in GDP and GNI per capita PPP from 2000 till 2010
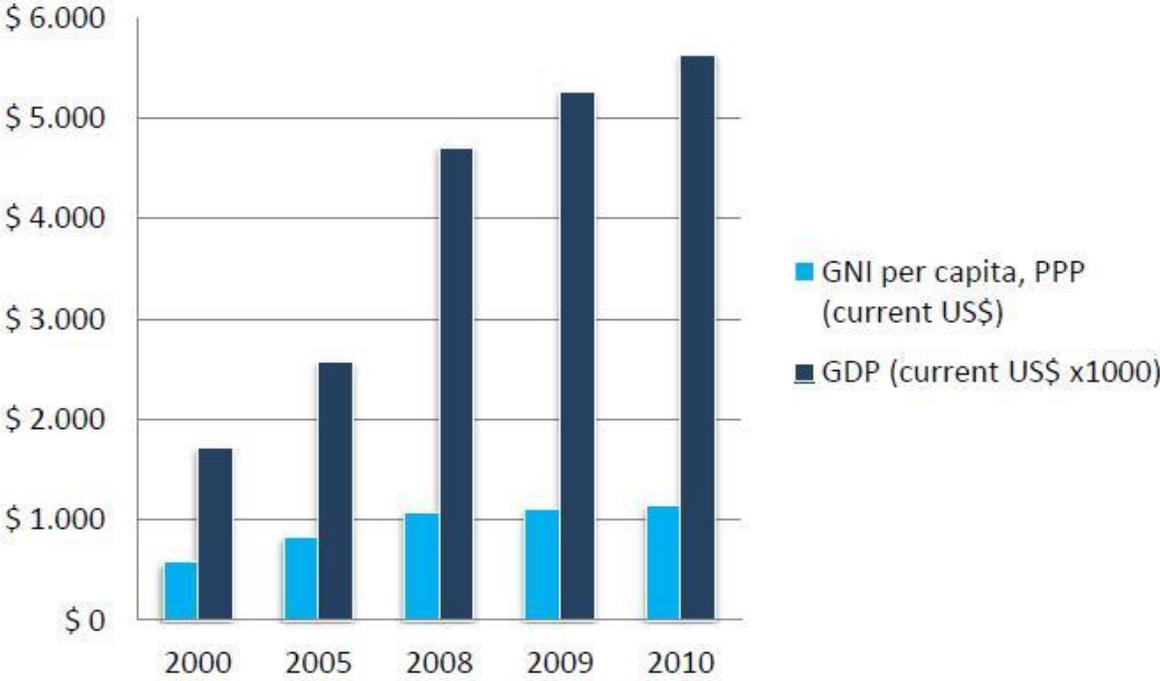
Source: World Bank (2011)

Since 2006, the services sector has made the largest contribution to the economic growth of almost 46% in 2010. This can be explained through a favorable business environment attracting foreign investments in mainly finance and insurance, transport and communications. The industry sector

accounted for only 13,8% of the economic growth in the same year (World Bank, 2011). However, the secondary sector has demonstrated individually the greatest expansion of 15% in 2011 and is thus of growing importance (UNDP, 2011). The main performers in industry are construction, mining and manufacturing.

The contribution of the agricultural sector to Rwanda's economic growth is slowly decreasing but important. The primary sector represents 34,6% of the total GDP value (World Bank, 2011; MacMillan, 2009). The overall contribution in percentage of the total GDP of the service, industries and agriculture for the years 2000, 2005, 2008 and 2009 are displayed in figure 3.3.

Figure 3.3 Rwanda's added value of services, industry and agriculture to the GDP in % for the years 2000, 2005, 2008 and 2009
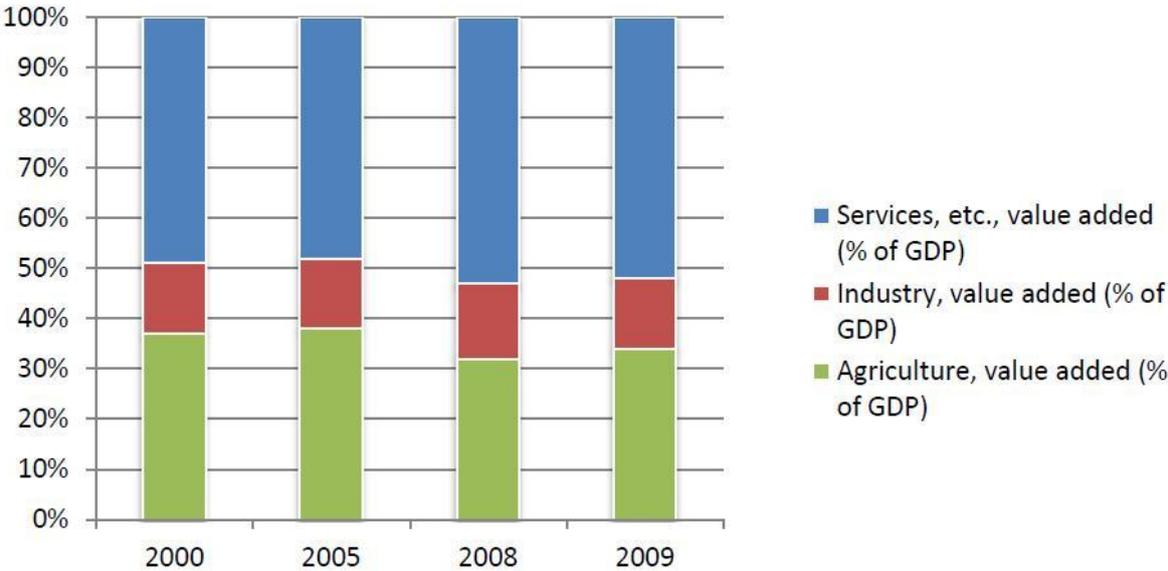
Source: World Bank (2011)

Though the added value of agriculture to the GDP is slowly decreasing, the importance of the primary sector should not be underestimated. About 80% of the population is employed through agriculture and most of the Rwandese population depends heavy on their own food production. Dominant food crop productions are bananas, Irish potatoes, fruits and vegetables, sweet potatoes and cassava. Additionally, coffee and tea (some regions also grow sugar cane and pyrethrum) and different minerals are the most important cash crops. Besides the export of cash crops and minerals, Rwanda does not have very many natural benefits that provide the country a sustainable future. The Rwandese government is trying to expand the range of opportunities by increasing agricultural outputs, both for consumption as for trade. In 2007 Rwanda entered the East-African Community

promoting free trade between five East-African nations (IFAD, 2012). Major trading partners of Rwanda in percentage of exports are Kenya (15,1%), Belgium (13,7%) and Sudan (13,6%) (UN Data, 2011).

3.2.4 Challenges for future development

Rwanda's positive development trend is admirable and many believe that the Rwandese approach to promote inclusive and stable politics is at the base of current progress. The country's leadership has articulated a vision of unity summed up in a visionary document named Vision 2020. Thus far, these efforts seem to be successful. Rwanda has emerged as one of the most stable and safe countries on the African continent making it attractive for foreign visitors and foreign investment. Rwanda has also become a so called 'donor-darling' receiving a good share of international aid from industrialized countries. Simultaneously, the country's external debt stock has lowered relieving pressure of government expenditures. Figure 3.4 shows the total amount of foreign aid and external debts of Rwanda over the years 2000, 2005, 2008 and 2009.

Figure 3.4 Rwanda's dependency on foreign aid and external debts for the years 2000, 2005, 2008 and 2009
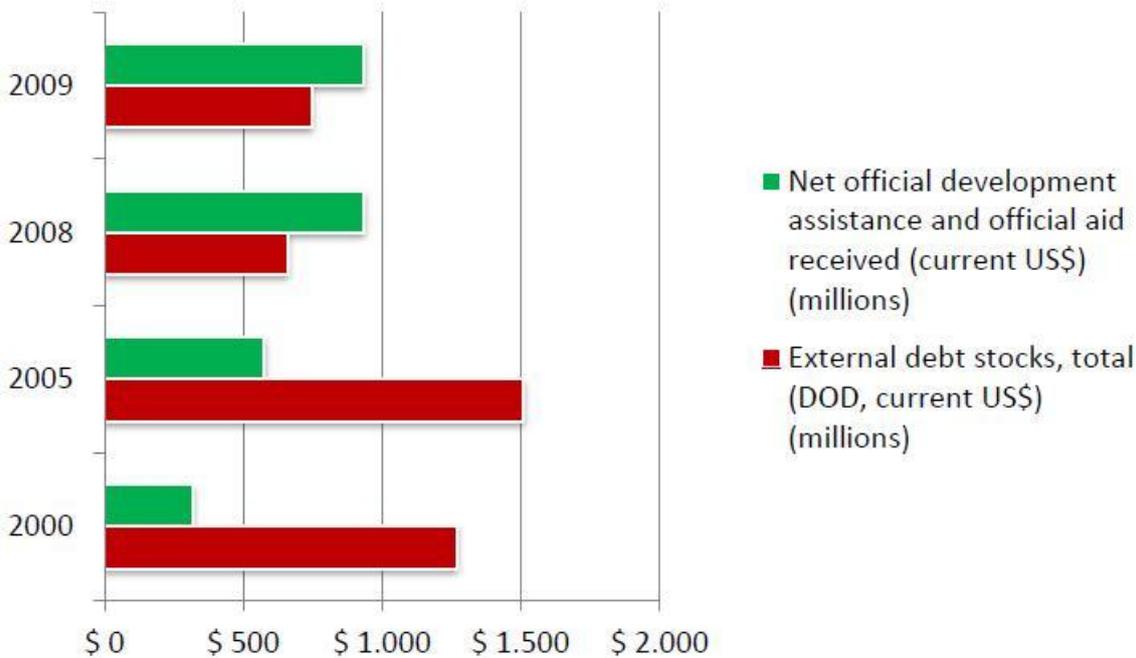
Source: World Bank, 2011

Besides all positive trends, there are a great number of challenges to Rwanda's future development. Despite social progress and economic growth, Rwanda remains a poor country. The government budget continues to depend on foreign aid flows for approximately 20% and the country's narrow export base continues to feed into a large trade deficit (especially with the USA) which will in the long run continue to lead to external debts. Additionally, neo-liberal politics point out the government is still the main driver behind real GDP growth and there is little endogenous driven growth (IMF, 2011). Other challenges are the lack of key labour markets (75% of the Rwanda's labour force is unskilled), high transport costs and a weak administrative capacity on lower district governments (World Bank, 2011).

One specific challenge for Rwanda is the high demographic pressure combined with a high dependency on the renewable natural resource of the land. This makes the delinquent balance between population size and food security one of the most acute problems for the immediate future. Most people are dependent on subsistence agriculture and famines are not unfamiliar to Rwanda's history.

The current estimated population is a little over 12 million people and is one of the smallest countries on the African continent. With 479 inhabitants per square kilometer, Rwanda is the most densely populated country in Africa (CIA Factbook, 2012). However as Rwanda is aware of this density problem and the continuing population growths, campaigns to bring the fertility rate down have showed success in the last years. The number of births per woman declined from 8,2 in 1970 to 6,8 in 1990 and 5,3 in 2009 (UN Data, 2011).

The changing relationship between land and population developed into some negative trends. The first is fragmentation, as farm holdings decrease in size and are divided between more people. This fragmentation is partly the result of degradation of the quality of land through erosion, intensive use with the lack of natural fertilizers and through the inheritance system that divides family land between many children. At the root of the problem lies poverty, one measure of the government is to provide one cow for the poorest households so they don't have to rely on harmful chemical fertilizers. However, it becomes clear that in the future no longer all people in rural areas can continue to rely on subsistence agriculture. Therefore, a growing number of young people seek to expand their livelihoods in the cities. It is estimated young people, under the age of 25, account for 67% of rural-urban migration flows (Mutandwa et al., 2011).

3.3 Structure of the health care system

The Rwandan health sector was, as the whole country, heavily affected both in terms of health infrastructure and human resources during the events of war and genocide in 1994 and in the aftermath of the events, health outcomes of the population worsened dramatically. Today, the Rwandan health sector receives much attention for both its past and current developments and achievements. The health sector improvements sometimes referred to as 'one of Rwanda's recent success stories' and appraised both in regional and international spheres, have even been considered to belong to the most drastic improvements of health in history (The Atlantic, 2013).

After the genocide, the new government re-adopted the district health model to rebuild the health system. The destroyed health sector was build up in accordance with the Lusaka Declaration of the World Health Organization which emphasizes decentralization of health care delivery. These reforms implied that the primary health care strategy would be implemented through districts that worked as autonomous planning and implementation units dealing with the health problems of the population in their catchment area (Pose and Samuels, 2011). The current National Health Policy of Rwanda, which serves as a basis for all national health planning and interventions is based on decentralization and community participation.

The Rwandese health sector is structured and led by the Ministry of Health (MOH) that supports and coordinates all efforts and interventions to improve the health situation of the Rwandese population. The organization of the system is based on a pyramidal referral structure with different packages of activities offered at the different levels of the system (Government of Rwanda, 2005).The Rwandan health system has a pyramid structure with three levels: central, intermediate and peripheral. The central level consists of an administrative entity and a technical/clinical entity. The administrative entity includes the five directorates of the Ministry of Health and the Minister's private office and has the role of developing national health policy and the strategies and plans for its implementation (Musango et al., 2006: 94). The technical/clinical entity, comprising three referral hospitals – the teaching hospitals at Butare (CHUB) and Kigali (CHU/CHK) and the neuropsychiatric hospital at Ndera – deals with cases referred by the district hospitals (serving the community). The referral hospitals also have a teaching and research role. The King Faisal Hospital is a private medical establishment which also has links with the central level. It offers a higher technical level than at the national referral hospitals and is therefore the highest referral hospital for both the public and private sectors.

It should, in principle bring down the numbers of patients transferred abroad (Musango et al., 2006: 94).

The intermediate level is a regional administrative level and does not include any healthcare units. The country has 12 regional health authorities corresponding to the former 12 administrative provinces. These regional health authorities are responsible for implementing national health policy in their regions, coordinating activities at district level and providing technical, administrative and logistical management for them (Musango et al., 2006: 94).

The lowest level, the peripheral level is represented by 39 health districts, each with a district management team. A health district includes an administrative base, a first referral hospital and health centers proving primary health care (Musango et al., 2006: 94). There are 430 peripheral healthcare establishments (health centers and dispensaries) responsible for providing a minimum package of activities (MPA). The complementary package of activities (CPA) can be found in 29 of the 39 district hospitals.

Health services are provided by the public sector, the non-profit making "approved" establishments like NGOs and churches (40% of peripheral health establishments are run by this sector), the profit-making sector, and traditional healers (Musango et al., 2006: 95).

3.4 Health insurance system

3.4.1 Introduction

One of the main objectives of the National health strategy of Rwanda is to ensure universal access to health care services for all Rwandans. The government of Rwanda has recognized the role that health care coverage has to play in order to achieve this objective.

Rwanda has two sickness insurance systems: the official, institutionalized schemes and the mutual benefit structure organized around the community, also known as 'Mutuelle de Santé' (MdS). The official social protection system is made up of the Rwandaise Health Care Insurance (RAMA) together with a number of other institutions providing entitlement to state-funded healthcare for needy victims of the genocide and massacres, elected community representatives, soldiers and their families, and prisoners (Musango et al., 2006: 96).

3.4.2 Mutuelle de Santé

The 'Mutuelle de Santé' is a community based health insurance (CBHI) plan that was started during the transition period in 1999 and draws on a centuries-old tradition of mutual aid programs that were prominent throughout many parts of Africa in the 18th and 19th centuries (Ensign and Bertrand, 2010: 103). The 'Mutuelle de Santé' system was stimulated to increase access to health care and deal with the financial problems that caused the drop in medical service use after the health providers re-introduces user fees. The government also wanted to increase community involvement, and started a pilot-test in 1999 in three rural districts: Kabutare, Byumba and Kabgayi (Schneider, 2005: 1432). Community involvement in the startup phase of the CBHI schemes was huge and on July 1st 1999, a total of 54 CBHIs were constituted, each CBHI signed a contract with one of the 54 health centers (Schneider, 2005: 1432).

The Rwandan law states that CBHIs are mutual health associations, managed and owned by their members who meet annually at during their General Assembly. At these assemblies, members share information about the financial performance of the CBHI and discuss issues related to the contract with providers. Each CBHI is headed by its executive bureau composed of four volunteers (president, vice-president, secretary and treasurer), elected by and among all members during the General Assembly. In each district, the CBHI federation of all CBHIs was created. The federation is constituted by six members elected by and among all CBHIs executive bureau representatives in the district (Schneider, 2005: 1433).

Community members could sign up for a CBHI voluntary and if they do they pay an annual contribution and a co-payment for each episode of illness. The amount of the annual contribution varies depending on whether membership is individual (US$ 1.20-2.00 a person) or by household (US$ 7.90-10.00 by household). The co-payment for each episode of illness also varies (US$ 0.30-0.60) (Musango et al., 2006: 98).

In 2004, the government, based on lessons learnt, slowly scaled up the CBHI system, and by 2006 all health facilities were working with a 'Mutuelle' (Pose and Samuels, 2001: 22). The MdS contributed a great deal to the improvement of the financial accessibility of health care in Rwanda and all citizens are since 2008 required by law to have a medical coverage (MOH, 2011). Not only did the MdS achieve high adhesion rates across the country and with that lowered the financial barrier to seek health care, the development of the MdS has generally increased both demand and the use of health care services in Rwanda as the affordability of service has increased (Pose and Samuels, 2011).

3.4.3 The new 2010 policy

Since 2004 the extension of the CBHI system nationwide went in rapid pace. Although adhesion rates went up fast, there were other challenges that needed to be addressed in this phase. In the 2010 policy document of the MOH on CBHI the Rwandan government formulates the following challenges:

- Insufficient funds at both district and national risk pooling level;
- Weak pooling mechanisms;
- Insufficient staff and limited management capabilities;
- Possible abuse at different levels in the system (beneficiaries and providers);
- Large numbers of people in the informal sector with limited capacity to make contributions and who are difficult to identify;
- Moral hazard

The most important challenges for the government were the equability and financial sustainability of the system. A key element for a sustainable community based health insurance system is a contribution system that assures equity and solidarity among its members, as well as the financial viability of the system. At the same time, in order to fully cover the costs of health care for their members, subsidies by central government and development partners are necessary (MOH, 2010). The Rwandan government came with a new policy to tackle these two problems at once. The new policy entailed that a contribution system based on the relative revenues of their members will increase equity and strengthens the financing of the CBHI system (MOH, 2010). Introducing payment

according to financial capacity was relatively easy in Rwanda as Rwanda had already a classification system in place which divided people into different socio-economic classes; the 'Ubudehe' system.

In 2001, Rwanda implemented the Ubudehe classification system program under the guidance of the Ministry of Local Government (MINLOC) and the Ministry of Finance and Local Government (MINFLOC). Under the policy, which is part of the poverty reduction strategy paper (PRSP) of the country, the Rwandese population is divided into six different classes according to each household's socio-economic status. Ubudehe is a community based targeting mechanism that categorizes the Rwandan population according to their revenues and vulnerability. The Ubudehe program, which in Kinyarwanda stands for 'mutual assistance' is a program based on collective action and community participation. The program allows Rwandese citizens and leaders, at the lowest village level to analyze the existing poverty amongst their own communities. The central strategy of the program is a so-called social mapping/targeting approach, which involves the communities themselves in order to implement social protection programmes and better target those in need for assistance in the villages. The communities decide amongst themselves every year in July to which Ubudehe group every household in the village belongs. The aim of the program is amongst other things to ensure that the poorest segments of the population have access to services and can receive the support needed. Table 3.2 provides an overview of the characteristics of the six Ubudehe categories.

Table 3.2 Ubudehe classification in Rwanda   (Source: Kettlewell, 2010)

Official poverty status	Characteristics
1 - Abject poor	Households that need to beg for their survival. They have no clothes, no food and no shelter. They have no land and cannot afford for their children to go to school neither can they afford medical care.
2 - Very poor	Same characteristics as category 1. Physically households are capable of working on land owned by others. Some might have small landholdings but no owned livestock. They have access to shelter.
3 - Poor	Households have access to some shelter and farmland. They can live on their own labour and produce. They have no savings but can eat, although food is not nutritious.
4 - Resourceful poor	Same characteristics as category 3 but households own cattle and their children can attend primary school.
5 - Food rich	Households have larger landholdings, own landstock and enough to eat. They often attend paid jobs and can access health care.
6 - Money rich	Households have both land and livestock and they have paid jobs. Their housing conditions are good and they often have access to a vehicle. They have enough money to lend and to obtain credit from the bank. Children go to secondary school and they have access to health care.

Before the 2010 policy, all members of the MdS paid 1000 Rwandan Francs (RwF) (approximately €1,10) per year as their annual contribution. According to the new policy, the first and second Ubudehe group had to pay 2000 RWF (≈€2,20) but this annual contribution was paid for by the national government. The third and fourth Ubudehe group had to pay 3000 RWF (≈€3,30) and the highest two socio-economic classes paid 7000 RWF (≈€7,70).

With this system based on relative revenues of the MdS members, it was assumed that the CBHI system will generate profits each year (MOH, 2010).

3.4.4 Financial structure

The financial structure of the Rwandan health insurance system works with funds and payments on different level like the health care system work with a referral system. The population pays their annual contribution to their CBHI section; the CBHI section pays the local health center in their specific section. Profits made by specific section will go to the districts funds in order to compensate for the sections that have a deficit. District funds receive subsidies from the national risk pool in order to pay for the first and second Ubudehe group. In addition they receive payments from the district government and have to pay the district hospital. The national risk pool receives payment from the Ministry of Finance through the MOH and from private health insurances and the social security board and in turn pays the claims of the referral hospitals. Figure 3.5 gives an overview of the structure of the Rwandese health insurance system.

Figure 3.5 Structure of the Rwandese health insurance system
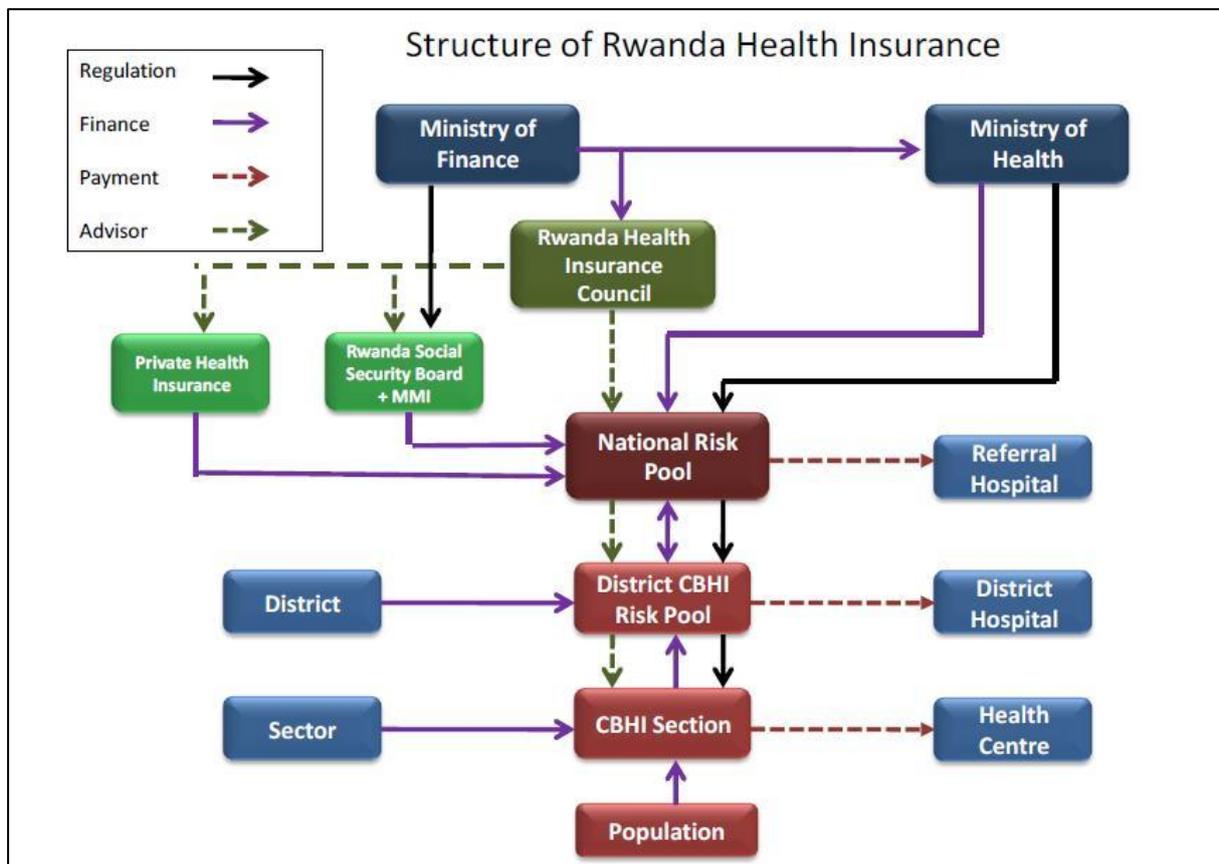
Source: MOH, 2010b

With the new 2010 policy financial sustainability was one of the major challenges to be solved. The Director of CBHI of the Bugesera district (2013) explained that the district funds are a problem. As the contributions of the funds come from members and they sometimes don't have enough resources, the different sections have problems paying all the health care costs to the health center. According to the Director of CBHI of the Bugesera district (2013) the financial problems will be solved if they reach a 100% coverage rate. Because then they have enough contributions from the population to cover the health expenditures. However, when coverage rates go up, health expenditures also go up. Nonetheless, the problem is solved at the moment by balancing the different sections. So if there are health sections which have a positive balance, this is being transferred to the district level and the district level uses this money to help health sections who have a negative balance (Director of CBHI of the Bugesera district, 2013).

The national government states that at this moment the system does not create a negative balance and they believe it will be even better in the future. The theory behind this is that a lot of the expenses of the national government now consists out of paying the health insurance for the first and second Ubudehe groups and the government is convinced that the amount of people in these groups will decrease each year because more and more people are lifted out of poverty (Mutuelle de Santé supervisor, 2013). However, analyzing the financial analysis the Rwandan government has made for the years 2010-2014, presented in table 3.3 to table 3.6, some figures can indicate problems for the financial sustainability of the health system in the future. In table 3.6 the total financing increases every year because all five separate contribution components rise every year. Because the total costs of health care are lower for the years 2010-2014 the Rwandan government creates a surplus for five years. However, the total cost of health care (table 3.6) rise much more than the total financial contributions, which makes the surplus smaller every year. The specification for 2014 shows there is almost no positive balance left. Projections for 2015 will probably reveal a deficit. The surplus that is created in the years 2010-2014 will help to cover for the expenses for some years after 2014 but this is not a sustainable financial system. Besides this, the Rwandan government assumes that the contribution from developing partners (western countries, non-governmental organizations, religious organizations etc.) to cover for the first and second Ubudehe group stays en grows equally with the enlargement of those groups. While it is possible that third parties have agreed to support the Rwandan government with those health costs for a specific time period, it is not self-evident that these donors will stay in the future or will support these costs specifically.

Table 3.3 Population projections for CBHI membership

POPULATION					
	2010	2011	2012	2013	2014
Total pop	10,329,517	10,598,085	10,873,635	11,156,350	11,446,415
Population CBHI	8,883,385	9,326,315	9,786,272	10,152,278	10,530,702
Group 1 (Ubedehe 1 + 2)	2,300,797	2,415,516	2,534,644	2,629,440	2,727,452
Group 2 (Ubedehe 3 + 4)	5,170,130	5,427,915	5,695,610	5,908,626	6,128,868
Group 3 (Ubedehe 5 + 6)	1,412,458	1,482,884	1,556,017	1,614,212	1,674,382

Source: MOH, 2010b

Table 3.4 Annual projected health care costs

		2010	2011	2012	2013	2014
Total Population Mutuelles		8,883,385	9,326,315	9,786,272	10,152,278	10,530,702
Total cost of health care RWF millions (assumed at RWF2900 per		25,762	30,535	34,572	38,699	43,313

Table 3.5 Revenues from premium contributions for stratification 2010-2014

Contribution from Premiums 2010 - 2014					
Population	25 397 597 710	26 663 933 745	27 978 950 478	29 025 363 225	30 107 275 666
GoR	4 601 593 429	4 831 031 018	5 069 288 684	5 258 880 081	5 454 903 391
Total contribution	29 999 191 140	31 494 964 763	33 048 239 161	34 284 243 306	35 562 179 057

Table 3.6 Revenue and financial gap with annual per capita health care costs of RwF 2900

FINANCING	2010	2011	2012	2013	2014
Contribution from population	25 398	26 664	27 979	29 025	30 107
Contribution from third party to cover indigents	4 602	4 831	4 831	5 259	5 455
Contribution from other insurance companies (5% premiums)	917	1 009	1 110	1 221	1 343
Contribution from VAT (1%)	-	1 424	1 615	1 776	1 954
Contribution from co-payment	3 341	3 772	4 070	4 391	4 738
Total Financing	**34 257**	**37 700**	**39 605**	**41 672**	**43 597**
Total cost of health care (assumed at RWF2900 per capita)	25 762	30 535	34 572	38 699	43 313
Financing Gap (Scenario 2)	**8 495**	**7 164**	**5 032**	**2 974**	**284**
Accumulated reserves (RWF Bn)	8 495	15 660	20 692	23 665	23 950

3.5 The research areas

3.5.1 The rural Ntarama sector

Ntarama is the rural sector selected for the research, located in the northern part of Bugesera District in the Eastern Province. The distance from Kigali is approximately 25 kilometers. Ntarama is located at an altitude of approximately 1500 meters above sea level. Lower slopes and some swamplands dominate the landscape and the sector of Ntarama is clearly less mountainous than for example peri-urban Shyorongi. The whole district of Bugesera, located at lower altitudes, receives less precipitation and is thus, more prone to droughts than other areas of Rwanda which also has an impact on the crop production in the area during dry season (District of Bugesera, 2013).

During the genocide in 1994, the district of Bugesera and thus also, the sector of Ntarama were heavily affected. Already in the 1960's the district became primarily inhabited by Tutsis that were relocated to the area. During the events in 1994, a large number of Tutsis was killed in the area (The New Times, 2013). The church of Ntarama is in fact renowned for the killings that took place at the site and in which over 5000 persons lost their lives as they sought refuge in the Catholic Church. As of today, the church is one of many Genocide memorial sites in Rwanda.

According to the Population Census conducted in 2012, the population in Ntarama consists of 18.043 inhabitants of which. Ntarama also has experienced an increase in its population between 2002 and 2012. The population has grown at an average rate of 2,6% per year between 2002 and 2012 (NISR, 2012). The population is mainly involved in agriculture. Livestock breeding activities are also found in the area as well certain industries (e.g. juice manufacturing, a nail factory, etc.) that also provide employment for the population. In terms if service provision in the sector, Ntarama has one new health center that was opened three years ago. There are four primary schools and three secondary schools in the area. Water supply in the area remains problematic due to a lack of secure water sources. Many households use water from the polluted Akagera River. This has given rise to health problems amongst the population. Consequently the sector has put in place awareness campaigns about the risks as well as about the importance of boiling drinking water before using it for household purposes (Nyberg, 2013).

Figure 3.6 House in peri-urban Shyorongi (top-left), house in rural Ntarama (top-right), densely constructed houses in urban Muhima (down-left) and urban landscape (down-right)

Source: Nyberg, 2013

3.5.2   The peri-urban Shyorongi sector

Shyorongi is the peri-urban sector selected for the research, located in the southeastern part of Rulindo District in the Northern Province. The sector lies on the way to the city Ruhengeri in northern Rwanda and is accessible by road. The distance to Shyorongi is about 18 kilometers from Kigali. The sector is divided into five cells which are divided into villages. Shyorongi is located at a high altitude f over 1900 meters above sea level and thus, the landscape is mainly mountainous with housing and land plots located on occasionally very steep hillsides (Rulindo district, 2013). Although the landscape appears to be predominantly rural, the sector lies between the urban and rural spheres, relatively close to the city which also strengthens the connection that the sector and its population has with urban Kigali.

According to the Population and Housing Census of 2012 the total population of Shyorongi contains 23.633 inhabitants. The sector has seen its population grow at an average rate of 2,6% between 2002 and 2012. Especially during the last two years, the sector has seen an increasing tendency of habitants from other areas and especially from Kigali buying plots and moving to the area (Nyberg, 2013). High population density in the city, urban development and investments taking place in Kigali as well as habitation in risky and unstable conditions in the city due to erosion and swamplands, are reasons for people to leave the city and install themselves in Shyorongi. Many people living in Shyorongi actually also work in Kigali, some of them also return on a daily basis. The short distance to the city enables circular migration to the city but also the other way around, as urban dwellers from Kigali also work in Shyorongi (Nyberg, 2013).

The sector can be identified as a peri-urban area as there are many connections with the city. However, agriculture remains by far the most important economic activity. In Shyorongi over 90% of the population is involved in agriculture, mainly subsistence agriculture. The main crops cultivated in the sector are sugarcane, beans, potatoes and corn. Commercial activities as well as governmental functions are other fields of economic activity. Additionally, Shyorongi also has ongoing mining activities; mainly extraction of wolframite for exportation.

Certain disparities in terms of income levels exist amongst the different cells in the sector. The cells located to the south and that are consequently bordering with Kigali, are more developed than the rest of the cells that can be considered as having a more 'rural character'. In terms of Ubudehe categories found in the area, people generally belong to the third category, the 'poor'. Certain basic services are provided for the residents in the sector. A total of three health care centers exist in the area. There are in total six primary schools and two secondary schools in the area. The main construction material of houses in the area is mud brick. However, new houses, generally modern and bigger in size are also being constructed in the area. In terms of water supply to the households, the large majority does not have access to piped water. In the whole district of Rulindo, it is estimated that the water coverage stands at approximately 30 % (Rulindo district, 2013). In Shyorongi, the situation has improved significantly although water supply still remains problematic due to the high altitude that renders water supply more challenging. The supply of electricity is generally considered to be good, especially in proximity to the main road (Nyberg, 2013).

Figure 3.6 Views from the peri- urban sector of Shyorongi

3.6.3 The urban Muhima sector

Muhima is the urban sector selected for the research, located in the center of Kigali. Muhima is one of the then sectors in the district of Nyarugenge (which is one of the three districts in Kigali) (City of Kigali, 2013). According to the Population and Housing Census of 2012 the total population of Muhima contains 30.432 inhabitants. With a population density of 10.276 inhabitants per square kilometer the population pressure is high in Muhima.

Muhima is located in the northwestern part of the city and is a predominantly lively and diverse urban area. The land use in the sector can be characterized as 'mixed' as the sector comprises both residential as well as commercial areas. The sector has a high density of buildings and housing and generally a tight network of streets that are both paved and non-paved. The sector is centrally located and parts of the sector actually constitute the Central Business District of Kigali. As a consequence, many public and private institutions are located in Muhima contributing to the urban 'feel' of the sector and equally providing employment opportunities for the population (Nyberg, 2013).

The sector is divided into 7 cells which are divided in 34 villages. Certain disparities are found within the sector in terms of socio-economic status, as certain cells are less wealthy than others in terms of income level. Also in term of the Ubudehe groups, there are some disparities although the majority of the households in the sector belong to the third and fourth category of 'poor' and 'resourceful poor'.

The sector of Muhima provides a wide range of services for its population. The sector has in total 3 primary schools and 3 secondary schools. In addition to many private clinics and pharmacies, the area has one health center and one district hospital providing medical services for the population. Furthermore it is estimated that approximately 70% of households have access to water in their households. In terms of particular environmental problems found in the sector, erosion during the rainy season can be causing problems at times. Part of the densely constructed dwelling in the sector are built on hills and slopes and run a risk for getting destroyed during heavy rain falls (Nyberg, 2013).

Figure 3.7 Views from the urban sector of Muhima

Source: Nyberg, 2013

4. Methodology

4.1 Introduction

This thesis is based on fieldwork carried out in three areas in Rwanda between February and May 2013. This chapter explains how data collection, analysis and interpretation were carried out throughout several stages of the research. The first paragraphs will explain the objective and leading questions of this study along with some theoretical concepts of the research questions. The last paragraphs will clarify the choice of methodological approaches that were used and will elaborate on the techniques of data analysis and diverse problems encountered during the fieldwork.

4.2. Research objective and research questions

The objective of this study is to contribute to an increased understanding and knowledge of how CBHI systems work in developing countries. As Rwanda in theory seems to be a textbook example of how CBHI could benefit developing countries, it is important to measure the impact of this particular system on different levels. Thus far, little empirical independent research has been done in Rwanda focusing on CBHI and its consequences in a broader perspective. Especially when CBHI is considered as a development tool, it should be measured in which way the poorest groups are affected. To reach this objective, there is at first a need to explore how CBHI systems differentiate and are used in various developing countries as has been done in chapter 2. Secondly, the CBHI system and all its aspects have to be investigated in Rwanda. Theories and policies have to be compared with practice. Third, a focus has to be made to see how the CBHI systems work for the poorest groups; if it is a beneficial system for the poorest groups and if it is a beneficial development tool. The main research question in this thesis is:

How are the poorest groups in different geographic spaces in Rwanda included in the health insurance system, how are they affected by the development policies concerning health insurance and what can we learn from them in a broader development perspective?

This main question is split into the following sub questions:

1. How are the poorest groups in different geographic spaces included in the health insurance system compared to other groups?

2. Which policies concerning health insurance are created for the poorest groups and how are these poorest groups affected by it?

3. How does the Rwandan CBHI system work in comparison to other developing countries and what can we learn from the Rwandan system in a broader development perspective?

Sub question 1 and 2 will be answered in chapter 5 and 6. In these chapters an analysis will be made of the household questionnaire and the interviews with different key informants, which were executed during the field research. In the first analysis chapter the demographic characteristics of the selected sample will be presented and it will continue with an in depth analysis of the adhesion rates between man and women, types of location (rural, peri-urban an urban), income and education. In the second analysis chapter and interpretation of the results of the analysis of the household questionnaire will be combined with responses from government officials and other key informants. Satisfaction and sensitization issues will be presented along with a closer look into all the financial, infrastructural and quality aspects of the CBHI system.

In order to answer the third sub question, the description of different health insurance systems in five developing countries done in chapter 2 will be compared in chapter 7 and weighted against the Rwandese policies in order to see which policies work best and what can be learned in a broader development perspective.

4.3   Expected results

Different assumptions are made on forehand about the adhesion rates of the CBHI system.

1. It is expected to see lower adhesion rates in the field then is stated by government sources. Not only because the adhesion rates the government speaks of would be unprecedented for a developing country but also because the literature review that was done before the field research showed how the government measured adhesion rates. The unit of analysis in government research is the household while this can give a skewed image of the individual adhesion levels.

2. Another expected result is that the three different research areas (rural, peri-urban and urban) show different adhesion rates. The assumption is that the rural area is the poorest one, consisting of the most households in the first and second socio-economic class and people with the lowest income and education levels. We also expect to see that the largest families live in this area. In contradiction, we expect the urban area to be the richest area consisting of the most households in the upper socio-economic classes and people with the highest income and education levels. Consequently, an expected result is that the rural area shows the lowest adhesion rates, the peri-urban area scores on average and the urban shows the highest adhesion rates.

3. The third expected result is to see a difference in insurance rate between man and women. As the man in usually the household provider we would expect to see that he is the one who

is insured more often. In addition, we also expect to see high coverage rates with female widow household heads as there are special government policies to help this group.

4. It is further expected that because people can decide every year if they want or need health insurance we expect to see that being sick in the last 12 months or seeking health care in the last 12 months has an influence in deciding whether or not to get health insurance. Although having a health insurance is mandatory by law, the Rwandan government does not enforce this law and the people are aware of this. Consequently, people base their decisions on other reason when they decide whether or not to get health insurance.

5. In a lot of developing countries we can see that the mindset of the people is a problem when dealing with health insurance. It is hard to convince people that they have to pay for something on forehand while they are not sure that they are going to need it. So if a family member has been sick in the last year or has sought health care, it could affect their decision to get health insurance as they might be convinced sooner how important health insurance is. Because of this the expectation is to see some problems with sensitization and the awareness of health insurance with people.

6. Another expected result is to see a lot of different reason why people are not insured. As this health (insurance) system is not very old we expect to see financial problems on the people's side not only with the annual fee but also with the co-payment, and on the government side with the sustainability of the system. From an infrastructural and quality point of view we expect to see problems with the referral system and different issues which have not been solved yet because of the system change.

7. The last assumption is that there will be a lot of community involvement because this is been promoted constantly by the Rwandan government and some government policies are in fact built upon this old tradition of doing this for, through and with the community.

4.4   Conceptual model

Figure 4.1 shows the conceptual model used in this study and is based on the socio-behavioral model and its subsequent modifications (Appiah et. al, 2011). In this model the complex and multidimensional issues of insurance enrollment are displayed. Apart from individual determinants, a country's health care provider structures and processes can also facilitate or discourage enrollment (Appiah et. al, 2011). The conceptual model used for this research proposes that household's decision to enroll is a function of 3 groups of factors: individual, scheme and health care provider factors. Each factor consists of different variables. Individual factors include predisposing, enabling

and need factors. Predisposing factors influence attitudes about insurance (age, gender, education, occupation, family size and health beliefs and attitudes). Enabling factors facilitate or prevent an individual's attempt to enroll (income, place of residence, knowledge of insurance). Perceived health status is the factor and represents the most immediate cause of health service use. Scheme factors include convenience of scheme location and administration, price and benefits of insurance and special policies which can benefit certain population groups. Health care provider factors include quality of care, provider staff attitudes and adequacy of service delivery. The assumption is that these factors interact with each other to produce an enrollment outcome, which may differ across socio-economic quintiles because of the belief that factors that contribute to the vulnerability of a given population also affect insurance enrollment as well as health care access and use (Appiah et. al, 2011).

Figure 4.1 Conceptual model of multidimensional issues of insurance enrollment
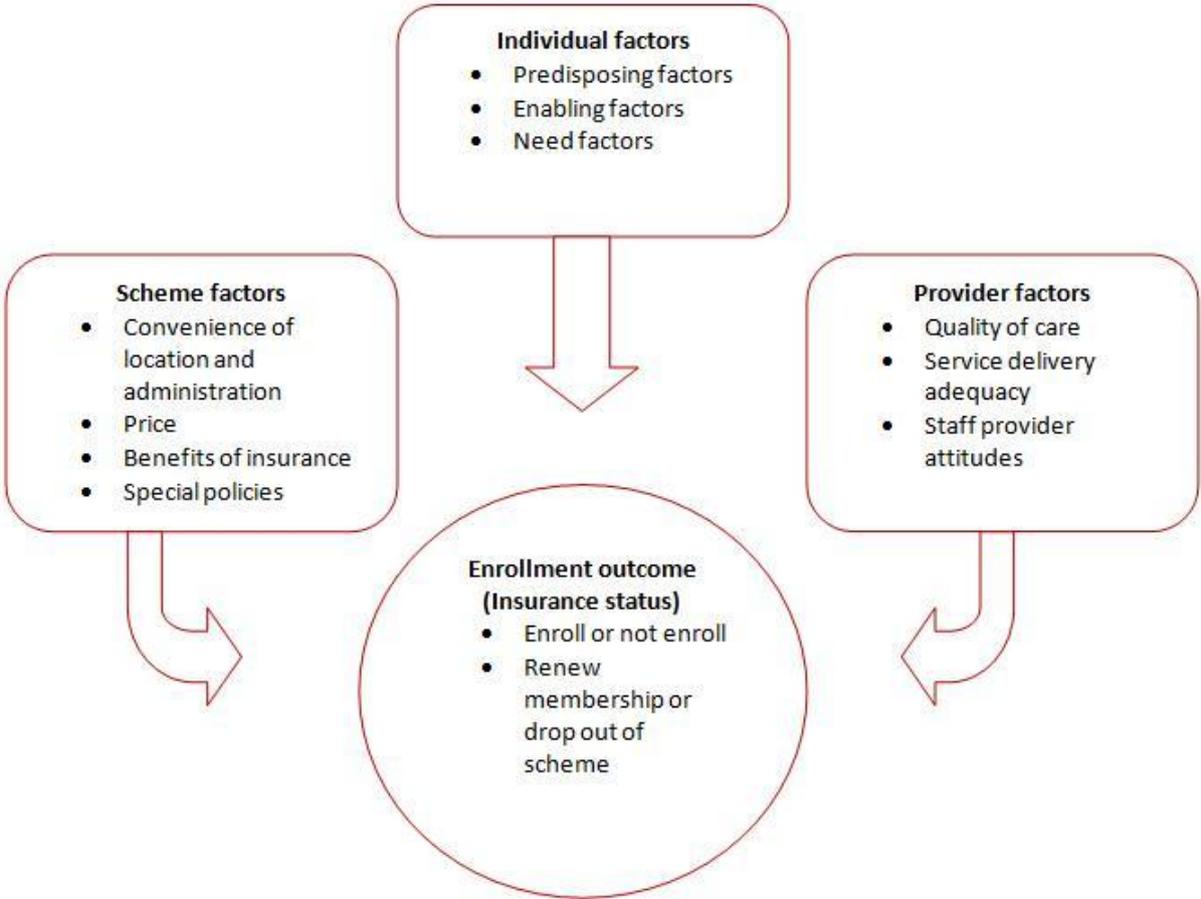
4.5   Operationalization and definition of key concepts

In order to understand all the concepts used in this research, operationalization and definition of the key concepts used is needed. The main objective of the operationalization process is to transform the central concepts identified for the research into variables that can be linked with measurable indicators. Following, a short description of key concepts used will be provided

CBHI

Community based health insurance schemes consist in many different forms. In a lot of countries, different small-scale communities start their own system to pay for their health insurance. After some years, these small-scale initiatives blend with regional or even national system. As community based systems exist on various levels and scales and in order to compare a broad range of CBHI systems, a country's health insurance system is considered community based when it has small scale community based health insurance projects (potentially incorporated in a national system) as well as a scaled up CBHI system which is rolled out throughout the country.

Socio-economic class

In paragraph 3.4.3 the socio-economic classes that divide the Rwandan population into six groups is explained. In order to measure pro-poor policy and effects on the poorest groups, the six categories are merged to three categories. The Rwandan government merges the six Ubudehe categories into three groups and every group pays a different annual fee. The Rwandan government pays the annual premium for the first group (the first and second Ubudehe group) and in order to analyze how this policy works in practice, this research follows this categorization. Consequently, the first and second Ubudehe groups are considered the poorest groups in Rwandan society. Figure 4.2 displays the Ubudehe categories and the merge of the categories into three groups.

Figure 4.2 CBHI contribution groups according to Ubudehe category

Ubudehe category	CBHI contribution group
1 - Abject poor	1 – Extremely poor and very poor households
2 - Very poor	
3 - Poor	2 – Poor households
4 - Resourceful poor	
5 - Food rich	3 – Better-off households
6 - Money rich	

Nationwide system

In some countries there is no national (government) CBHI system but is risk pooling only an option in certain districts or even only in some villages. A CBHI system is considered a nationwide system when in principle every citizen has the possibility to join the same system.

Income-dependent premiums and pro-poor policies

These concepts can reveal how the poorest groups in a country are included in the health insurance system. Annual premiums are considered income-dependent when there are specific premiums depending on people's income level. Policies are considered pro-poor when the government has created special policies to target and in this way include the poorest groups in society into the health insurance system. This can for example mean that a national or local government pays (part of) the annual premium for the poorest groups under certain conditions.

Decentralized system

As the effectiveness of decentralization of health insurance systems is discussed between scholars this concepts also is used in this research. The discussion entails if a decentralized health insurance system is more effective and has the possibility to reach higher adhesion rates than an insurance system which is not decentralized. A health insurance system is considered decentralized when national governments have transferred responsibilities, funds or other key policy components to lower level governments.

4.6   Fieldwork design

4.6.1   Selection of the study areas and design of the survey sample

The politico-administrative structure of Rwanda consists of five provinces: Eastern Province, Southern Province, Western Province, Northern Province and the Kigali-region. These provinces consist of 30 districts which are divided into 416 sectors and these sectors consist of 2148 cells (Kettlewell, 2010). All cells are divided into villages (over 15.000 in the whole country), the lowest administrative level. In this research, villages are therefore selected as the research area.

The data for this research was collected from February 2013 to May 2013 in three different sectors. Three different geographical areas where chosen in order to compare all data on the different types of location. On advice of experts and taking into account the accessibility of various sectors during the rainy season, Ntarama was chosen as the rural area, Shyorongi as the peri-urban area and Muhima as the urban area.

Map 4.1 Selection of the three different sectors
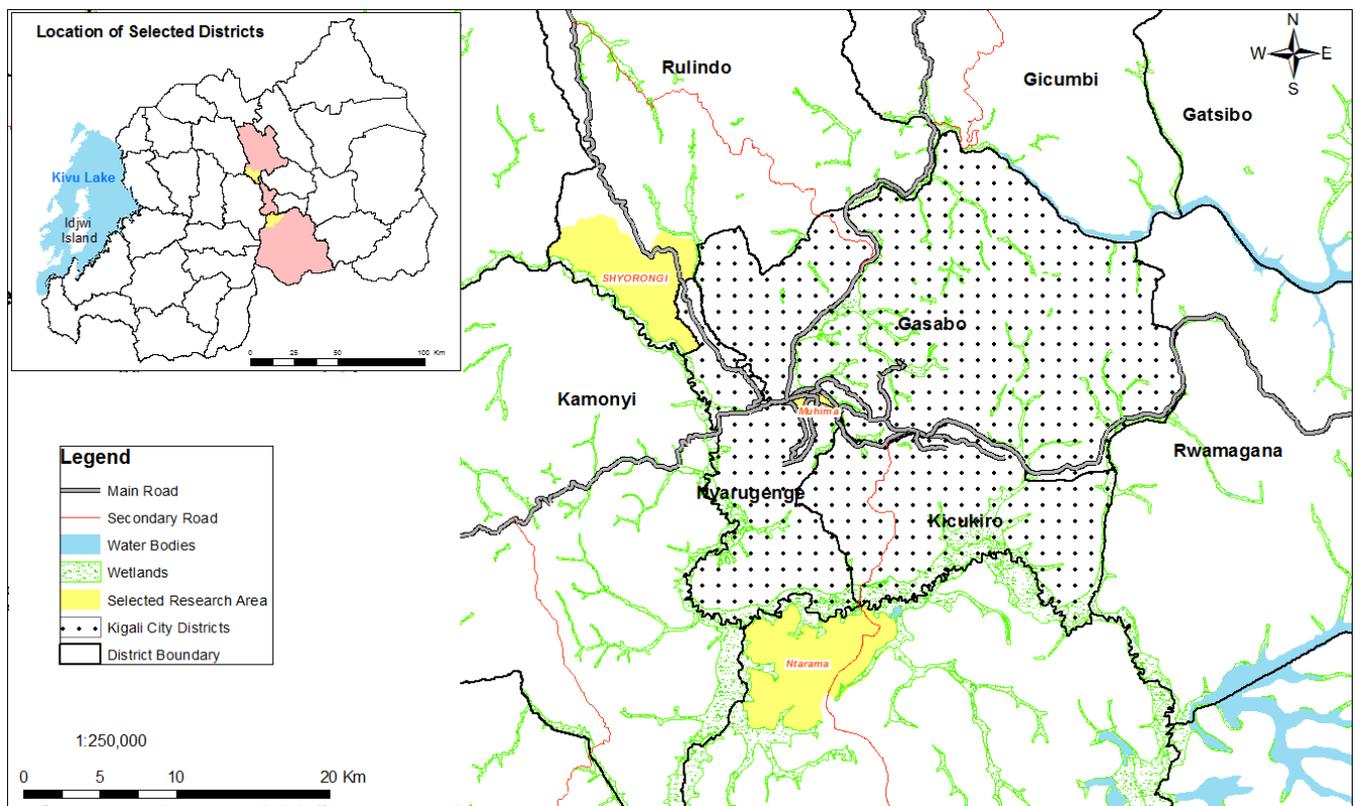
The three sectors consist of 15 cells, 9 cells were selected for research through accidental sampling technique. With this technique, all cells were alphabetically ordered per sector and in that order the uneven numbered cells were selected for research. The 9 selected cells consist of 59 villages, 29 villages were selected according to the same accidental sampling technique. The target population in the research areas consisted of 5229 household living in 101 villages. The calculation of the sample size, the proportional sample size of each village and the selection of cells and villages can be found in Annex I.

Map 4.2 Selection of the nine cells
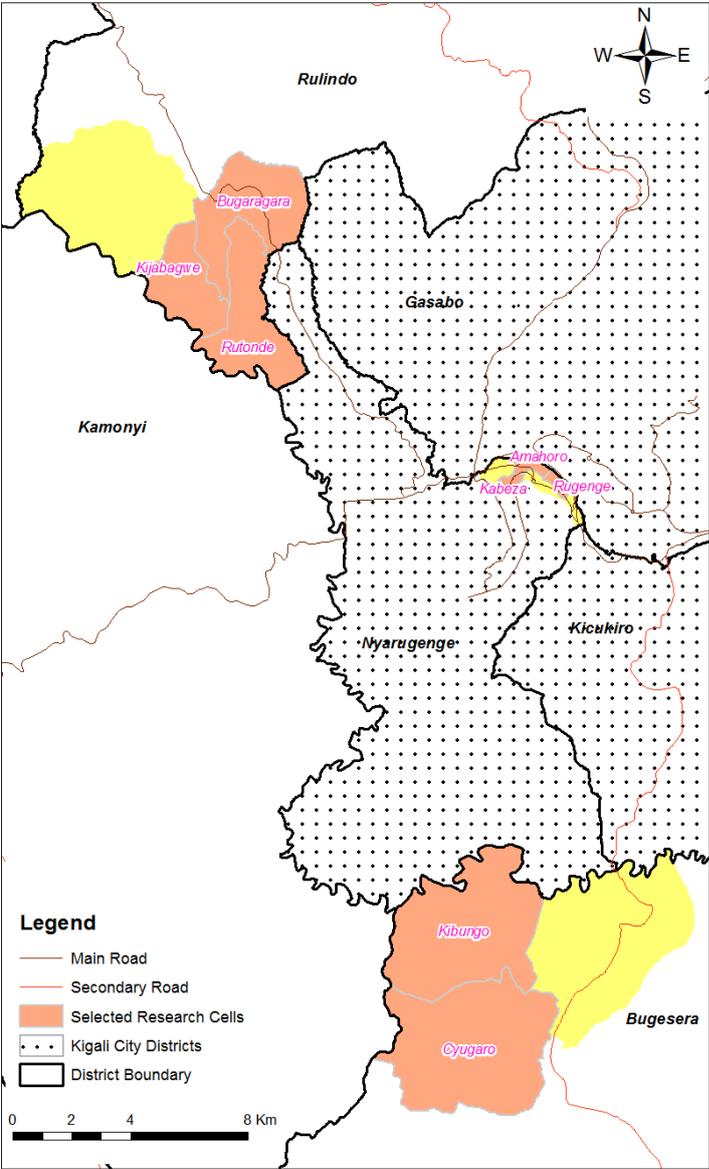
Map 4.3 Selection of the 29 villages
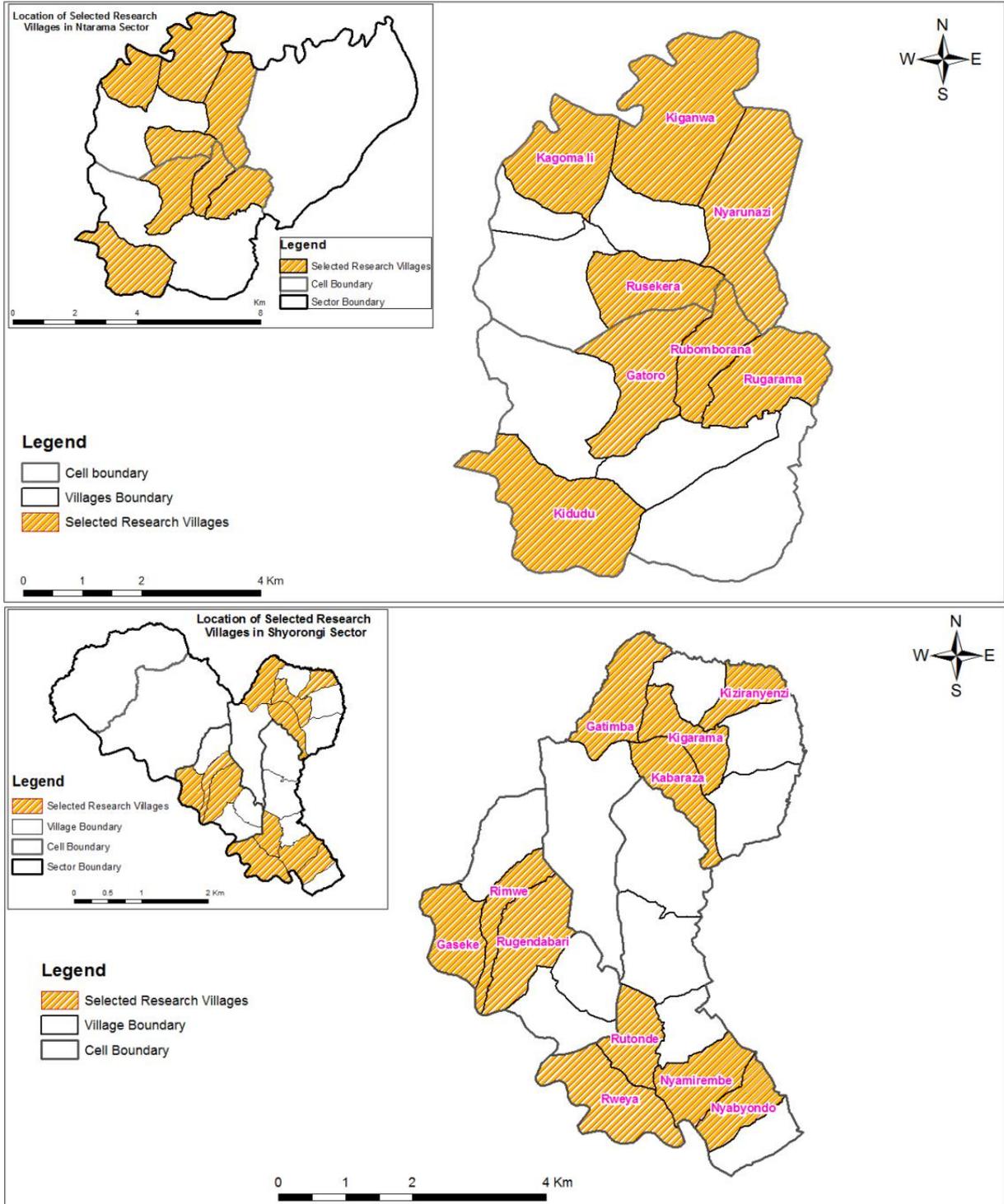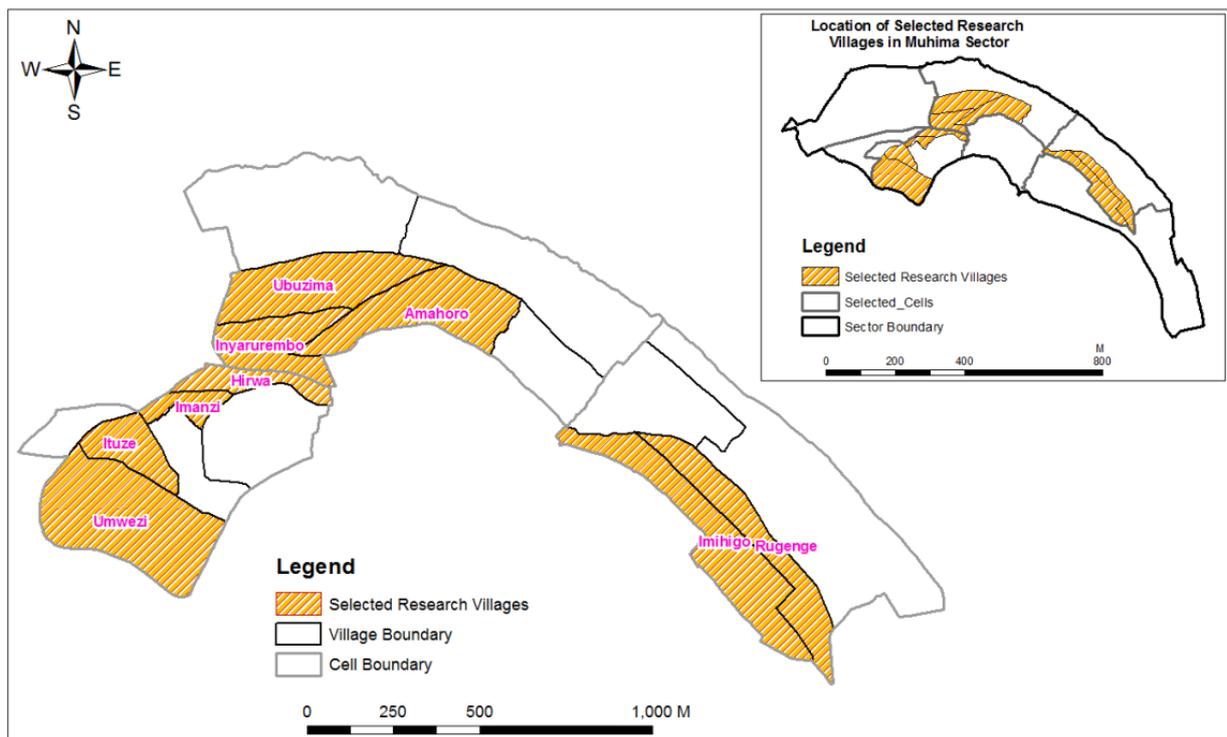
4.6.2 Research partners

The native language of the population in the selected research areas is Kinyarwanda. To help with communication with and access to the selected households, two students helped with the translation and the organization of the household questionnaire. The students are Rwandan natives and are currently Bachelor Students at the National University of Rwanda in the Faculty of Economic and Management department of Applied Statistics in Butare. Both students were able to communicate in Kinyarwanda, French and English and had experience in carrying out socio-economic surveys. On top of that, both students had to do their own field study as part of their Bachelor's degree which made the field research also valuable for them. The students were only financially rewarded in terms of travel expenses to different research locations and food during the days that research was carried out. Because the field research was important for their own research, the risk of carelessness and disinterest reduced strongly.

4.7   Research methodology

4.7.1   Mixed approach

In the last decade qualitative and quantitative research methods have begun to merge together (Desai & Potter, 2006). Across different disciplines, scientists have been encouraged to combine qualitative and quantitative approaches to gain new insights. The ways in which fruitful combinations of research methods might be designed has also increased and tangible examples of the so-called 'Q-squared approaches' have become available (Hulme, 2007).

Well designed Q-squared approaches triangulate data and can result in deeper insights in social and economic changes (Hulme, 2007), provides the basis for showing 'what' and highlights significant variables. Qualitative data is able to give deeper insights in 'why' and 'how' and emphasizes variety and differences within the range of human experiences (Binns, 2006). In this research there is chosen to make use of both.

Quantitative research methods will be applied through a household questionnaire in the selected villages, using a questionnaire with open and closed questions. This provides insight in compositions of the households and the state of needs in terms of health insurance. In addition to the household questionnaires, interviews were conducted with key informants from the government and academic world with the help of preliminary findings.

4.7.2   Household questionnaire and interviews

The executed household questionnaire offers a standard way of collecting information which brings several advantages. First, there is the ability to reach almost complete coverage of the population as most people live in households and the household provides a convenient place where people can be contacted. Second, a large number of household surveys allows for cross validation of results improving credibility of analysis. As this research was conducted based on a sampling strategy with a confidence interval of 95%, the chance that the results are a good representation of the three selected sectors is high. Possible disadvantages are the willingness to provide (correct) information, dependency on the memory of respondents and the risk of miscommunication. If some people do not understand all the questions or if they for another reason of health or knowledge cannot adequately respond, the survey could be biased. Conducting field work in data collection for the first time also requires flexibility and sensitivity to possible barriers between researcher and respondent (Binns, 2006)

The household survey used for this research consists of a structured questionnaire. Questions were ordered in obvious sequence, from primary descriptive questions regarding household information to later open or attitude-based questions about the respondents view on the most important aspects if the health care system and on the CBHI system in particular. An English version of the household questionnaire is shown in Annex 2.

The goal of collecting qualitative data was to gain deeper insight in the 'why' and 'how' questions and to gather government responses to preliminary findings from the field research. As the Rwandan government structure is very hierarchical and closed, especially in the Ministry of Health, it was hard to get in touch with the right people. However after the right approvals and a lot of time, interviews with the most important key informants were done. Annex III gives an overview of the key informants and the interviews that were conducted.

4.8   Limitations and reliability

Conducting research and analysis have some limitations that need to be acknowledged. No research is ever free of limitations, as there are factors influencing the research itself and its results, hindering a feasible generalization of the outcomes.

4.8.1 Problems encountered during data collection

Before starting with the actual field research there were a lot of issues before we got the right clearances to conduct the field research. Especially when doing research on health it is difficult to get the right permission to start field work. Because of these procedures the research was delayed for several weeks. The NUR and local students proved to be indispensable to get the field research started. The upside of the delay was that we had extra time to optimize the household questionnaire. The downside was that there was no more time left for the planned follow up interviews with households who had interesting cases.

During data collection in the field, some respondents thought that participating in the research would help resolve some problems they had concerning their health care access. Other respondents thought we were sent by the government. These perceptions could lead to unreliable and 'desired' answers. As a result, our fellow research students had to explain the research purposes very carefully. Usually, once they had explained that the work was going to be used for scientific research

of the NUR and other partners, and that the negative opinions were as important as any other questions, participants seemed to talk unreservedly.

A last problem encountered during the data collection was accessibility of the villages. Due to the rainy season and once in a while due to the protest of a village leader, we couldn't access the selected village. As a consequence, the village was replaced with another village following the accidental sampling technique as much as possible in order to make sure that the sample was not compromised.

4.8.2 Limitations of the research

The research had to be conducted within a limited timeframe of three months, in which three different sectors had to be investigated. This prevented the research, especially because of the delay explained earlier, from being very thorough and in-depth. A second limitation was that information about specific cells and villages (except from household numbers) was not available. Information about economic development and poverty levels in general were not available which make it hard to compare these districts to other districts in the country. A third restriction is the local language, which prevented a thorough understanding of the answers given by the respondents and also prevented the results from being optimal. Because in the translated questionnaires some answers were missing or badly translated, some information might be lost due to the barrier of speaking different languages.

4.8.3 Reliability of the answers

In addition to the restrictions of the research, there are other factors that play a role in preventing the results from being directly representative for a wider population. These factors might have affected the reliability of the research outcomes; research results can only be considered as reliable when they are collected by using a random sample (Binns, 2006). As a random sample was used to calculate the required participating households per village, the research sample is a representative sample of all three sectors. However the three selected sectors are chosen on advice of experts and not on a sampling basis. Therefore we can state that the research sample is a representative sample of the sectors Ntarama, Shyorongi and Muhima but not a representative sample of all rural, peri-urban and urban sectors in Rwanda.

A second issue that has to be taken into account is the impact of power relations on the reliability of the research. Firstly, one has to pay attention to the fact that every foreign researcher is in a power position (Binns, 2006). As Apentiik & Parpart (2006) state, ethnicity, race, gender, and access to specific resources can all have consequences for the way in which a foreign researcher is considered by his or her research population. Being a western, white female student, doing research among rural households in Sub-Saharan Africa, it is possible that some respondents have a suspicious attitude and are not willing to cooperate on a voluntary basis. Another, partly earlier mentioned, constraint is that especially answers to questions related to money may be biased by the respondent's hope for profit of help. Though all the mentioned issues are hypothetical, one can be sure that they influence the outcomes of the research to a certain level.

At last, there are a few remarks to be made on the household surveys based on positive preferences. In some cultures it is customary to give an ambivalent rather than a negative answer. Apentiik & Parpart (2006) state that some respondents confronted with a concrete choice in a contingent valuation survey answer 'yes' to questions they are insecure of. This problem was dealt with by adding a gradation of possible answers in the questionnaire ranging from for instance 'very satisfied' and 'satisfied' through 'dissatisfied' to 'very dissatisfied'. Nevertheless, it cannot be foreseen how many and which respondents are prone to give improper answers.

5. Demographic characteristics and adhesion rates: medical coverage for different groups

5.1   Introduction

This chapter will elaborate on the basic results from the household questionnaire. The demographic characteristics of the selected sample and a combination of that data with the adhesion rates of the Mutuelle the Santé will be presented. Interpretation and discussion of the results will be presented in the following chapter. To understand and analyze the outcomes of the household questionnaire it is first necessary to fully understand the sample group and its different characteristics. In this chapter different groups will be compared according to income, education, socio-economic class, gender and family size. This will give insight in how the poorest groups are included in the Mutuelle de Santé and how their situation is according to other groups in Rwandan society. Therefore this chapter will help to answer the first sub question of this research:

How are the poorest groups in different geographic spaces included in the health insurance system compared to other groups?

5.2   Demographic characteristics of the selected sample

Three sectors were selected for the research. For the calculation of the sample size see Annex I. Table 5.1 gives an overview of the selected sectors, the type of location of the sectors as well as how many households and people were included in the research sample and the average household size.

Table 5.1 Number of households and people per sector

Sector	Type of location	Households	Sample size	Average household size
Ntarama	Rural	33	141	5,9
Shyorongi	Peri -urban	43	203	4,7
Muhima	Urban	40	174	6,5
Total Sample		**116**	**518**	**5,7**

Population pyramids

Figure 5.1 shows the population pyramid of the three sampled areas which represents the age-sex distribution of the population. The population pyramid is characteristic for developing countries; a wide base in comparison with a narrow top represents a large proportion of young people and a relatively small proportion of elderly. The overall female-male ratio of the total sample population is 55% of females and 45% of males. To a certain extent this is in the Rwandan case also a reflection of the events of war and genocide in 1994, where more men than women lost their lives.

The age structure of the sample population in the research area is primarily dominated by a large scale of children under the age of 15 years representing approximately 44% of the total sample population. No major differences in terms of age structure can be detected between the different research areas.

Figure 5.1 Population pyramids of the three sampled areas

Urban Muhima
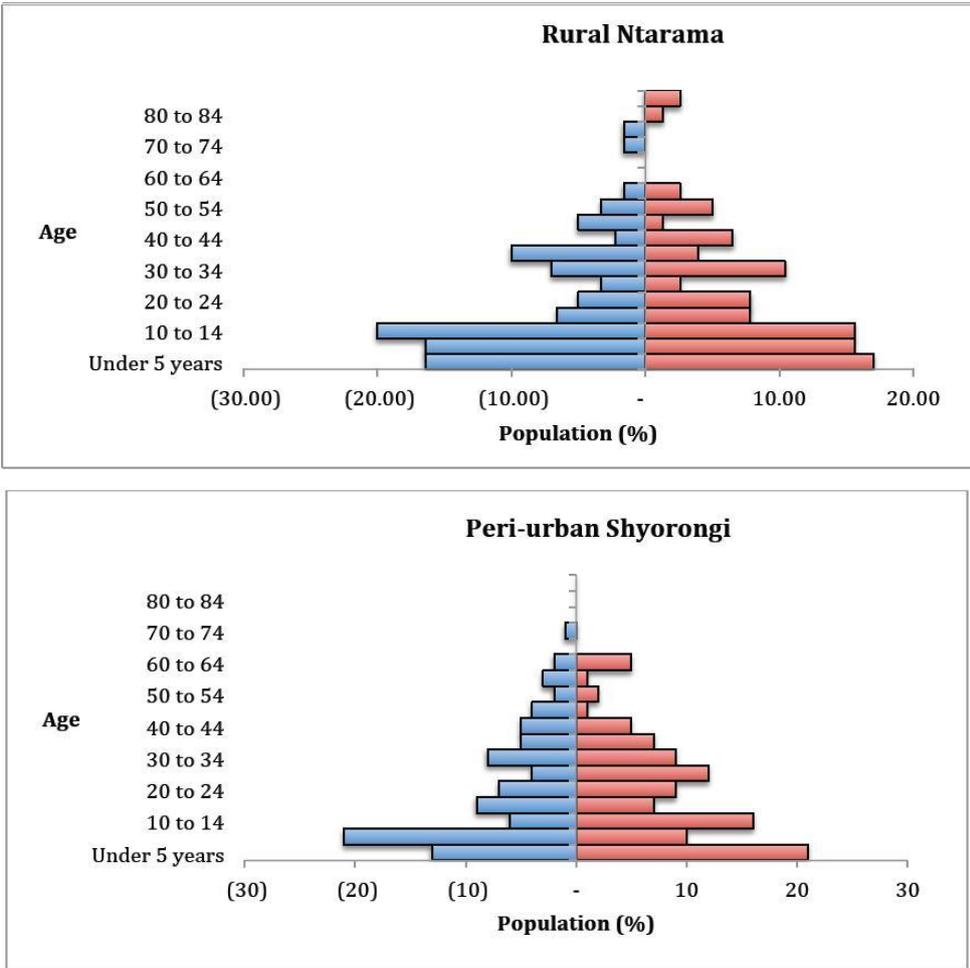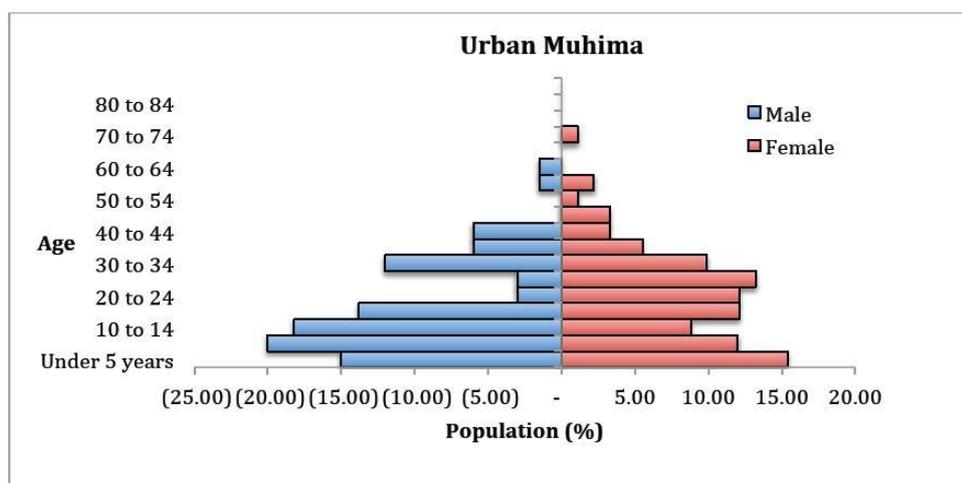
Family size

Table 5.2 shows the family sizes in the different selected areas. An assumption on forehand was that maybe adhesion rates of the Mutuelle de Santé were affected by the size of the household, it is important to see if there are differences in the three sectors between family sizes because this could affect the adhesion rates in the different areas. Figure 5.2 shows that Ntarama, the most rural sector, has on average larger households.

Table 5.2 Family sizes in the different sectors [n = 116]

		Total of household members										Total	N
		1	2	3	4	5	6	7	8	10	12		
Sector	Ntarama	**9,1%**	3,0%	**21,2%**	18,2%	**21,2%**	**24,2%**		3,0%			100%	33
	Shyorongi		9,3%	16,3%	**25,6%**	18,6%	11,6%	9,3%	**9,3%**			100%	43
	Muhima	2,5%	**17,5%**	20,0%	20,0%	17,5%	10,0%	5,0%	2,5%	**2,5%**	**2,5%**	100%	40
Total		3,4%	10,3%	19,0%	21,6%	19,0%	14,7%	5,2%	5,2%	0,9%	0,9%	100%	116

Ubudehe classification, income, education and occupation

An important aspect that influences the daily lives of Rwandese citizens is to which Ubudehe classification they belong. See paragraph 3.4.3 for an elaborate explanation of the Ubudehe categories and how these are constructed. The six Ubudehe categories have been simplified to three categories, in accordance with government policy on the specific issue of the Mutuelle de Santé.

Table 5.3 shows that, as expected, the urban Muhima area is the 'richest' area (in relative terms) and the rural area Ntarama is the sector with the relatively poorest households. In the urban area Muhima, 88.9% of the households are still poor households but they don't belong to the two lowest socio-economic classes. Muhima is also the only sector in which better-off households exist. The rural Ntarama sector is clearly the poorest area. Of all households in Ntarama, 40% belongs to the first two Ubudehe categories, they are extremely and very poor households, 60% of the households are categorized as poor households and there are no households that are categorized in the fifth and six category of the Ubudehe system which means that they would be better-off. The peri-urban area, Shyorongi, has also no households that are categorized as better-off households. The poor households in Shyorongi count for 81% and the extremely and very poor households for 19%.

Table 5.3 Ubudehe classification by sector in percentages [n = 116]

		Ubudehe classification			Total
		Extremely poor and very poor households	Poor households	Better-off households	
Sector	Ntarama (Rural)	40,0%	60,0%		100,0%
	Shyorongi (Peri-Urban)	19,0%	81,0%		100,0%
	Muhima (Urban)	5,6%	88,9%	5,6%	100,0%
Total		20,4%	77,8%	1,9%	100,0%

When only taking the household income per year into account and not the Ubudehe classification, the same conclusions can be drawn (Table 5.4). The poorest households live in the rural area Ntarama and the relatively richer people live in the urban area of Muhima.

Table 5.4 Income level per year of the household by sector [n = 116]

		Income level per year of the Total Household in Rwandan Francs							Total
		0	<10.000 ≈€11	10.000 - 50.000 ≈€25	50.000 - 100.000 ≈€80	100.000 - 200.000 ≈€135	>200.000 ≈€215	No answer	
Sector	Ntarama	21,9%	**50,0%**	**25,0%**				3,1%	100,0%
	Shyorongi	7,0%	37,2%	27,9%	9,3%	9,3%		9,3%	100,0%
	Muhima	**25,0%**	2,5%	12,5%	**10,0%**	**25,0%**	**25,0%**		100,0%
Total		17,4%	28,7%	21,7%	7,0%	12,2%	8,7%	4,3%	100,0%

The highest completed level of education (Table 5.5), asked of all people above 18 in the sample group, shows comparison with the Ubudehe classification and yearly income. In the rural area Ntarama people have the lowest completed level of education where as in Muhima people have the highest completed education levels.

Table 5.5 Highest completed level of education of people above 18 [n = 224]

		Highest completed level of education (>18)						Total
		None	Primary	Secondary	Vocational	University	Other	
Sector	Ntarama	**27,8%**	63,0%	5,6%	1,9%		1,9%	
	Shyorongi	13,1%	**72,6%**	9,5%			4,8%	100,0%
	Muhima	14,0%	33,7%	**34,9%**	**2,3%**	**14,0%**	1,2%	100,0%
								100,0%
Total		17,0%	55,4%	18,3%	1,3%	5,4%	2,7%	100,0%

Finally it is interesting to analyze the main occupation of the families in the research areas. The head of the household was asked what his or her main occupation was (if they had one). Figure 5.2 gives an overview of the main occupation per sector. As expected, households in Ntarama are by far most involved in the agricultural sector (91%), which confirms that the area is in fact highly rural. In the urban area, no agricultural income sources were found and most household heads are either self-employed or wage employed outside of the farming sector. Many urban households indicated that they are running own small-scale business activities. In peri-urban Shyorongi household heads also largely remain active in agriculture, but an important share also earns their living outside of this sector.

Figure 5.2 Main occupation of head of the household per sector [n = 116]

Economic activity	Urban %	Peri-urban %	Rural %
Self-employed	25	16.3	6
Wage employed	52.5	16.3	-
Farmer	-	28	54.5
Waged agricultural work	-	25.5	36.5
Unemployed	12.5	-	-
Retired	-	5	-
Incapable to work	7.5	7	3
Other	2.5	2	-
Total	100	100	100

Source: Nyberg, 2013

5.3   Adhesion rates

In this paragraph we will take the demographic characteristics into account when looking at the adhesion rates of health insurances. As in this whole research, the focus is on the community based health insurance, the Mutuelle de Santé.

5.3.1   Men vs. women

Table 5.6 shows that the percentages of the different types of medical insurances are almost the same when splitting the sample group into men and women.

Table 5.6 Male and female medical coverage by different insurance schemes [Total n = 518, with 236 male and 282 female]

		Sex	
		Male	Female
Type of insurance	Mutuelle de Santé	69,90%	68,40%
	RAMA	5,10%	6,00%
	Private or other	1,30%	0,35%
	No insurance	23,70%	25,18%

In addition, there is also almost no difference between men and women when only calculating if men and women are insured or not insured; 76,3% of men are insured against 74,8% of women, as we can see in table 5.7. There is no scientific significant relationship between sex and being insured.

Table 5.7 Male and female medical coverage [Total n = 518, with 236 male and 282 female]

		Medical coverage		Total
		Insured	Not insured	
Sex	Male	76,3%	23,7%	100,0%
	Female	74,8%	25,2%	100,0%
Total		75,5%	24,5%	100,0%

When preparing for the field, literature and other researchers pointed out that it could be interesting to take a special look at female headed households. As a consequence of the genocide, especially a lot of men were either killed or went to prison which led to more female headed households. As the government has special programs for these households it could be interesting to see how these households are insured. In the household questionnaire, in the case of a female headed household, it was specifically asked if this woman was a widow. Therefore the female headed households where women are divorced or where the men live in another place to work are not being included in the calculations.

From our sample of 116 households, there were 18 households where a female widow was the head of the household (Table 5.8). As expected, there are more female widow headed households in the rural area (27,3%) compared to the urban (10%) and the peri-urban area (11,6%). Ntarama is an area which was severely hit by the genocide and we would therefore expect to see more female widow headed households than in the other areas.

Table 5.8 Adhesion rates of female widow headed households per sector

Sector	Type of location	Number of Female widow headed households (%)	Number of people within household (%)	Amount of people insured within household
Ntarama	Rural	9 (27,3%)	27 (19,8%)	22 (81,5%)
Shyorongi	Peri -urban	5 (11,6%)	19 (9,4%)	16 (84,2%)
Muhima	Urban	4 (10%)	17 (9,8%)	17 (100%)
Total		**18 (15,5%)**	**63 (12,2%)**	**55 (87,3%)**

The insurance rates of all members in the household (87,3%) is quite high compared to other households. Only two of the 18 female widow headed households have no insurance, the other households are mainly insured through the Mutuelle de Santé system and one family has another type of insurance. Other studies (Smit, 2013) show that female headed households are significantly more often poor then male headed households and are significantly more likely to have lower educational attainment levels than male household heads. However comparing insurance rates, female widow headed households perform better. There is a special organization, FARG, which pays insurance costs for the Mutuelle de Santé for women who became widows due to the genocide in Rwanda.

5.3.2. Type of location, income and education

In paragraph 5.2 results showed that the people who belong to the lowest social-economic classes (Table 5.3), have relatively the lowest yearly income (Table 5.4) and have the lowest education levels (Table 5.5) live in the rural Ntarama area, whereas in the urban Muhima area, people belong relatively to the highest social-economic classes (Table 5.3), have the highest yearly income (Table 5.4) and have the lowest education levels (Table 5.5). The peri-urban sector of Shyorongi shows average levels on all these characteristics. With this knowledge the assumption could be made that these factors would influence the adhesion rates in these areas or of people with those characteristics.

The government has presented a policy document on the Mutuelle de Santé in April 2010 where adhesion rates per district are presented by the end of 2009 (table 5.9). Unfortunately, the government did not calculate the adhesion rates per sector but per district, one administrative level higher. However the adhesion rates measured in the field research for the Ntarama and the Shyorongi sector are almost 20% lower than the adhesion rates for the districts those sectors belong to were one of the lowest adhesion rates sectors in the district, a 20% difference is very high, especially when taking into account that the government figures are from 2009 which is 4 years earlier than the field research (Table 5.10). The CBHI coverage rates from 2003 till 2009 (Table 5.11) would suggest figures from 2009 had only gone up. This is only true for Muhima where the government states that by the end of 2009 75% was insured in the Nyarugenge sector. Results from the field research show a membership rate of 79,3%. This would be a logical improvement of the adhesion rate which would be expected for all sectors.

Table 5.9 Average membership rate by district at the end of 2009

District	Number of beneficiaries	Membership rate
Bugesera	291 331	91%
Rulindo	295 501	98%
Nyarungenge	213 300	75%

Source: MOH, 2010

Table 5.10 Average membership rate by sector

District	Sector	Type of location	Membership rate 2009 (According to MoH, 2010)	Membership rate 2013 (According to field research)
Bugesera	Ntarama	Rural	91%	70,9%
Rulindo	Shyorongi	Peri-urban	98%	75,4%
Nyarungenge	Muhima	Urban	75%	79,3%

Table 5.11 CBHI coverage rates for the Rwandan population

Year	Adhesion rate
2003	7%
2004	27%
2005	44%
2006	73%
2007	75%
2008	85%
2009	86%

Source: MOH, 2010

An explanation for this big difference in data could be that the questions used in their Demographic and Health Survey are individual but for the total household. When households are asked about their insurance, the question is if one or more people in the household is insured. In the field research questions about insurance were asked on an individual level. The reason the government asks the question that way can be partially explained. Since the new policy on Mutuelle de Santé people can no longer be insured individually. You can only be insured per family, so according to this policy if one member in the family is insured, the whole family is insured. However this is only a rule for the Mutuelle de Santé insurance. Private or other insurances have different rules. On top of that, there are many families where some people have Mutuelle de Santé insurance whereas others have none. Recalculating the adhesion rates according to the government policy and count every family as being insured when at least one household member is insured, the adhesion rates go up, but still not reach the government figures for Ntarama and Shyorongi (Table 5.12).

Table 5.12 Average membership rate by sector, individual vs. family membership

District	Sector	Membership rate 2009 (According to MoH)	Individual membership rate 2013 (According to field research)	Family (≥1 member) membership rate 2013 (According to field research)
Bugesera	Ntarama	91%	70,9%	84,4%
Rulindo	Shyorongi	98%	75,4%	81,4%
Nyarungenge	Muhima	75%	79,3%	82,5%

The adhesion rates per sector according to the two field research approaches show no scientific significant relation between sector and being insured. There is also no significant relationship when only testing for the Mutuelle de Santé specifically.

The next question is if there is a significant relationship between being insured and socio-economic class, income and education.

The socio-economic class is used in Rwanda to implement very different policy measures. As explained in paragraph 3.4.3, the socio-economic classes division called Ubudehe is used for indicating for which households the government pays the insurance. The six Ubudehe classes are for this specific policy split up into three categories. For the first two categories, the extremely poor and very poor households, the government pays the insurance fee. However as shown in table 5.11, medical coverage is not guaranteed for the first two Ubudehe categories. An interesting observation, especially when taking into consideration that all families where at least one member is insured has been counted as being insured. Of the 116 households in the sample, 8 families did not know or did not want to tell their socio-economic status. Of the 22 households belonging to the two lowest socio-economic classes, every household should have been insured according to the government policy. However in 8 of the 22 households no one is insured. There is no scientifically significant relationship between Ubudehe classification and medical coverage.

Table 5.13 Medical insurance by Ubudehe classification (n = 116)

		Medical Coverage		Total	N
		Insured	Not insured		
	Extremely poor and very poor households	63,6%	36,4%	100,0%	22
Ubudehe	Poor households	77,4%	22,6%	100,0%	84
	Better-off households	100,0%		100,0%	2
	No answer				8
Total		75,0%	25,0%	100,0%	116

In the household questionnaire the total income level per year of the household was asked. To test whether income and insurance coverage are related, insurance coverage of the head of the household was analyzed as this is also usually the person who is responsible for the largest amount of the household income. From the 116 households, only 6 households did not know their income per year or did not want to share.

Table 5.14 Medical insurance by income group (n = 116)

		Medical coverage		Total	N
		Insured	Not insured		
	0	70,0%	30,0%	100,0%	20
	<10.000	57,6%	42,4%	100,0%	33
Income level per year of the Total Household in RwF	10.000-50.000	80,0%	20,0%	100,0%	25
	50.000-100.000	100,0%		100,0%	8
	100.000-200.000	92,9%	7,1%	100,0%	14
	>200.000	100,0%		100,0%	10
	No answer				6
Total		76,4%	23,6%	100,0%	116

As expected from table 5.14, being insured is significantly related to the income level per year of the household[1]. This means that households with higher yearly incomes are significantly more often insured than households with lower yearly incomes.

When analyzing education levels, there are many of similarities with income levels. All individuals above 18 in the household were asked what their highest completed level of education was. Of the 224 people in our sample above 18 we did not calculate 6 people who answered 'other' as we cannot know where to range this category. We also left out the people who answered 'vocational' as their highest completed level of education as this is not an official level in the Rwanda educational system and this education can be done at different levels in primary, secondary or even as pre-university training.

Table 5.15 Medical insurance by education level (n = 215)

		Medical Coverage		Total	N
		Insured	Not insured		
	None	68,4%	31,6%	100,0%	38
Highest completed level of education (>18)	Primary	79,0%	21,0%	100,0%	124
	Secondary	90,2%	9,8%	100,0%	41
	University	100,0%		100,0%	12
Total		80,5%	19,5%	100,0%	215

As expected from table 5.15, being insured is significantly related to the highest completed education level[2]. This means that people with higher education levels are significantly more often insured than people with lower education levels.

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[1] Chi-Square test results in a Pearson Chi-square of 14,767, significant at $p < .011$ and a Cramer's V correlation coefficient of 0.366.
[2] Chi-Square test results in a Pearson Chi-square of 9,076, significant at $p < .028$ and a Cramer's V correlation coefficient of 0.205.

5.3.3 Family size

In paragraph 5.2, family sizes per sector were discussed with an overview in table5.2. It was important include family sizes in the analysis as it was an assumption on forehand that bigger families could have more problems with paying for their health insurance in comparison to smaller families. Especially when taking into account the new government policy that you cannot get health insurance per individual but you have to insure your whole family at once. However table 5.16 shows that there seems to be no significant relationship between family size and being insured. Families of three and seven members actually are the families who are least insured and even all members of the two biggest families of ten and twelve are insured.

Table 5.16 Medical insurance by family size (n = 116)

| | | Medical Coverage | | Total | N |
		Insured	Not insured		
	1	100,0%		100,0%	4
	2	75,0%	25,0%	100,0%	12
	3	65,2%	34,8%	100,0%	22
	4	84,0%	16,0%	100,0%	25
Total of household	5	72,7%	27,3%	100,0%	22
members	6	74,5%	25,5%	100,0%	17
	7	64,3%	35,7%	100,0%	6
	8	77,1%	22,9%	100,0%	6
	10	100,0%		100,0%	1
	12	100,0%		100,0%	1
Total		75,5%	24,5%	100,0%	116

5.2.4 Being ill and seeking health care

Another assumption that was made on forehand was that people might make the decision of getting a health insurance based on if they were sick in the last year and/or sought health care during that period. In the household questionnaire we asked the head of the household if anyone in the household has been sick in the past 12 months and if anyone in the household has sought health care during the last twelve months. As we don't know which person in the household was ill or sought healthcare, we compared these answers with the answers to the question: 'Do you or any of your household members currently have any medical coverage?' and divided the answers in two categories. In the first category, all household members where one or more person is insured were counted, in the second category, only households were nobody was insured are counted.

Table 5.17 shows that there is no difference between people who have been ill but didn't seek health care and people who were not sick and did not seek health care. In both categories, 66,7% of the households are partially or totally insured.

Table 5.17 Being ill and seeking health care in relation to medical coverage (n=116)

Have you or any of your household members been ill during the last 12 months?			Do you or any of your household members currently have medical coverage?	
			Yes, all or some	Nobody
Yes	Sought health care during the last 12 months?	Yes	85,4%	14,6%
		No	66,7%	33,3%
No	Sought health care during the last 12 months?	Yes	50,0%	50,0%
		No	66,7%	33,3%

The big difference exist between households where a member has been ill and has sought healthcare (85,4% of those households are partially or completely insured) and the households where a member wasn't ill but did seek healthcare (50% of those households are partially or completely insured). It is explainable that people who were sick have a higher adhesion rate percentage because you can imagine that when being chronically ill, people already know they need medical care and therefore are more likely to get health insurance. The people who were not sick but still sought health care can be households were a woman is pregnant and therefore falls not under the category of being sick but still needs medical care. However this does not explain why the adhesion rate of households where

no member was ill but still sought medical attention is lower (50%) than the adhesion rate of households were nobody was sick and also didn't seek health care (66,7%).

Scientifically testing all different relationships shows that there is only a significant relationship between being ill and having medical coverage[3]. This means that households where a member has been ill in the last 12 months are significantly more often insured than households where nobody has been ill. From these results there can be concluded that being ill influences if people are insured or not but seeking health care is not a factor in being insured or not.

5.3.5   Not being insured

An expected result was to see a lot of different reason why people did not have health insurance. The head of the household was asked what the reason was for not being insured if there was someone in the household who had no medical insurance. While there were lot of possible answers to choose from (quality, lack of trust, lack of knowledge, ignorance, distance to the health center etc., see Annex II), 93,3 % (28 households) of the respondents said they were not insured because of financial reasons, only 2 households said there was another reason for not being insured.

The costs of health care for the people do not only consist of the annual premium they have to pay but also a co-payment for every treatment they get, as explained in paragraph 3.4.2. An interesting observation is that people seems to have no trouble with paying this co-payment. The annual fee for the health insurance is considered too high while the people think the co-payment fee is reasonable.

Figure 5.3 Annual fee and co-payment fee

Do you consider the total annual fee to be reasonable?
Yes 17,7%
No 82,3%

Do you consider the co-payment to be reasonable?
No 11,1%
Yes 88,9%

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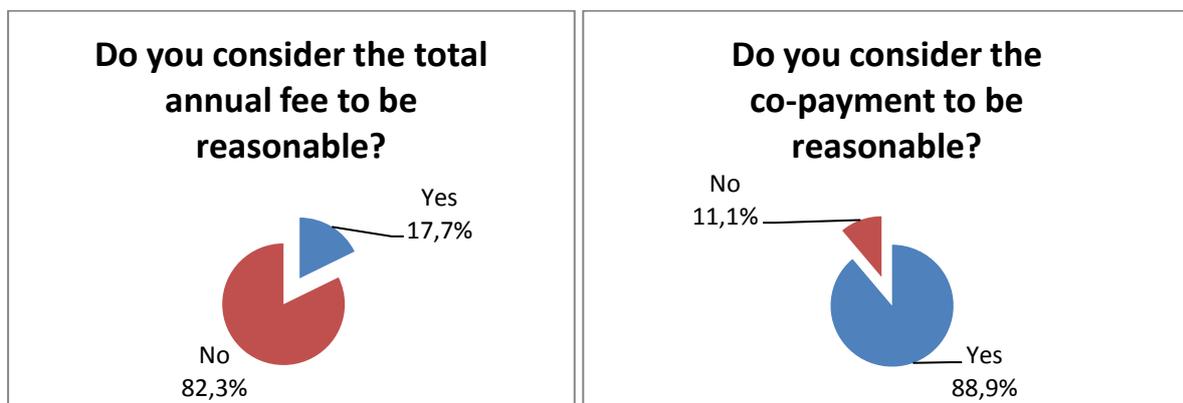
[3] Chi-Square test results in a Pearson Chi-square of 3,972, significant at $p < .046$ and a Cramer's V correlation coefficient of 0.185.

These are interesting outcomes as it seems that this would make the solution for making sure that everybody gets an insurance simple. The Rwandan government has made many improvements to the health system in the past years but we still assumed on forehand that there might be a lot of different reason why people were not insured.

5.4   Conclusion

The research in three different geographic spaces clearly showed disparities in the three sample groups. The rural Ntarama sector has relatively the largest families, the poorest families when looking at income level and Ubudehe classification, and the lowest completed education levels. The urban Muhima sector has relatively the richest families when looking at income level and Ubudehe classification, and the highest completed education levels. On all variables, the peri-urban Shyorongi sector scores in between Muhima and Ntarama.

The sub question to answer in this chapter was: *How are the poorest groups in different geographic spaces included in the health insurance system compared to other groups?*
In order to answer this question, adhesion rates were tested for different groups. Results of the analyses are not all according to assumptions made on forehand. There was no scientific statistical difference in the health insurance adhesion rates between men and women. Only the group of female headed household widows showed higher adhesion rates than average levels. This is explainable because of the special policies created for women who were widowed due to the genocide of 1994.

As expected, households with higher income and higher completed levels of education were significantly more insured than households with lower income and lower completed levels of education. However there was no significant relation between adhesion rates and Ubudehe classification. Type of geographic space, family size, and seeking health care also had no significant influence on having a health insurance. Yet households where members had been ill in the last twelve months were significantly more often insured than households that did not seek health care in the past twelve months.

People can be uninsured for a lot of different reasons. While there were many assumptions that quality, infrastructure, misunderstanding etc. could influence the decision of getting health insurance, the research showed that financial issues were the reason for almost all uninsured households to not have health insurance.

The poorest groups in different geographic spaces are partially included in the health insurance system. They are still the group which have the least people insured compared to other, richer groups in society but on average about 65% of the poorest groups are included in the health insurance system.

6. Effects of pro-poor policies & financial and infrastructural aspects of the CBHI system

6.1   Introduction

The former chapter showed an analysis of the demographic characteristics of the selected sample in combination with the adhesion rates data of the Mutuelle the Santé. This chapter will provide interpretation of outcomes related to the pro-poor policies. Quantitative data will be presented in order to get a broader perspective on some issues or problems that occur with the CBHI system. Government responses and information from other key informants will also be presented and put into perspective. Therefore this chapter will help to answer the second sub question of this research: *Which policies concerning health insurance are created for the poorest and how are these poorest groups affected by it?*

6.1.1   Adhesion rates

In this first paragraphs adhesion rates of and satisfaction with the Mutuelle de Santé will be further analyzed. Analyses have been made in the chapter 5, but what do these figures mean and how should we interpret them? And how do government officials react to these statistics from the field research?

The reason for doing this field research began because of the astonishing figures the government of Rwanda presented and because of the little field research there was done on this particular topic in Rwanda by scientists. In the last chapter all the quantitative analysis of the empirical data was done. When looking at the adhesion rates there are three big questions that remain after comparing government data or interpreting policy with the results of the research:

1. Why do the adhesion rates the government represents differ from the results of the field research?
2. Why are not all the households in the lowest two socio-economic classes insured?
3. Why are there households where some members are insured while others are not?

The second and third questions are both financial aspects and will be discussed in paragraph 6.2, together with all other financial facets of the CBHI system. To start with the first question, the difference between the adhesion rates the government represents and the insurance rates the field study shows. Table 5.2.3.3 gives a summary of the findings. As we can see in this table, the adhesion

rates for the sectors Ntarama en Shyorongi (the rural and peri-urban area) are much higher according to the government data than according to the field research. Two notes have to be made. First, the government figures are all from 2009 while the field research was done in 2013. Second, the government calculated the membership of the Mutuelle de Santé, however it is not known how they calculated the percentage. There are at least four ways to calculate the percentage:

1. All people who have Mutuelle the Santé divided by the total population.

2. All people who have Mutuelle the Santé divided by the people who have no insurance plus the people who have Mutuelle de Santé

3. All people who are insured (no matter which insurance) divided by the total population.

4. All households where at least one member is insured (not matter which insurance) divided by the population.

Table 6.1 presents the outcomes of those four types of calculations. Option 2 would be the correct way to calculate the number, as this percentage shows how many of the people who you actually want to have the Mutuelle the Santé are already insured. However, option 4 shows the highest numbers. As explained earlier, if the government would do the research now, they would have a good reason to calculate according to option 4 as the policy introduced in 2010 does not longer allow members of families to be insured individually. However, the government's research was done in 2009, when people could still be insured individually. On top of that, our research in 2013 shows that in a lot of families not all members are insured but only some. Nevertheless, even if we compare option 4 to the membership rates that were presented by the government, the numbers still differ a lot.

Table 6.1 Average membership rate by sector; different ways of calculating

Sector	Membership rate 2009	Option 1 Individual membership rate (Mutuelle/total)	Option 2 Individual membership rate (Mutuelle/Mutuelle + no insurance)	Option 3 Individual membership rate (insured/total)	Option 4 Family (≥1 member) membership rate
Data	Government figures	Field Research	Field Research	Field Research	Field Research
Ntarama	91%	65,6%	70,7%	70,9%	84,4%
Shyorongi	98%	71,4%	74,4%	75,4%	81,4%
Muhima	75%	65,6%	76%	79,3%	82,5%

An option could be that the numbers actually went down in the past four years. The 2011 policy had two implications that could affect the adhesion rate. First, the insurance per family could put households in a difficult position when they do not have the money to cover for all members. Second, the third and fourth socio-economic class went from paying 1000 RwF per year to paying 3000 RwF per year. For some households, especially larger ones, this is money they do not have. Government officials who are responsible of the Mutuelle de Santé within the Ministry of Health (Mutuelle de Santé supervisor, 2013) especially focused on the reaching of universal coverage and did not reply to questions about the difference in adhesion rates found during the field research. The government officials stated that the adhesion rates only went up and that a 90% coverage rate was reached nation-wide. However the calculations of the government are based on district level, one administrative level higher than the sector level, the level in which the field research took place. So it is possible that the field research by chance was done in those sectors where the adhesion rates were the lowest of the district and that this explains the adhesion rates differ. However, the Director of CBHI of Bugesera district (2013) stated that the adhesion rates between sectors in a district could be very different indeed but said that the adhesion rate for Ntarama sector is 96% which does not match at all with the findings from our field research.

6.1.2 Satisfaction

Although almost all participants in this study who do not have health insurance say the reason is financial, there might be other, maybe less important, reasons to doubt having a health insurance. Besides this it could be the case that if people have the money they would get health insurance because they understand how important it is but they still would like to see improvements in the system. In the household questionnaire the heads of the household were asked if they are satisfied with their insurance. In addition they were asked when they have Mutuelle de Santé, what de advantages and disadvantages are of this insurance and what they would like to change.

From the 116 households in our study, 78 heads of the households are insured using Mutuelle de Santé. As we can see in table 6.1.2, 70,5% (55) are satisfied with the Mutuelle de Santé against 24,4% (19) which are not satisfied.

Table 6.2 Satisfaction of head of households with Mutuelle de Santé (n = 78)

	Are you satisfied with your current insurance?		
	Yes	No	No answer
Mutuelle de Santé	70,5%	24,4%	5,1%

The households who were not satisfied were asked why they were not satisfied. Of the 19 families who were not satisfied, 17 were willing to give us an explanation. In table 6.3 different reasons for not being satisfied are displayed. While this is a very small number of people who answered the question, it is interesting to see that their answers are quite versatile.

An expected result was to see some people who would say the costs are too high. However other reasons in table 6.3 concern the quality of the system. Particularly the complaint about the necessary drugs is notable. People explained that in their nearest health center they sometimes do not have the necessary drugs or they do not give the needed medicine because it is too expensive. In some cases people stated to be sent a way with a cheap drug that does not work.

Table 6.3 Reasons for not being satisfied with Mutuelle de Santé (n = 17)

Reasons for not being satisfied	Percentages (n=17)
Costs are still too high	35,3%

Necessary drugs are not provided	35,3%
They cure me badly/Some illnesses are not treated	11,8%
Lack of capacity	5,9%
Service is bad	5,9%
We have no choice, MdS is our only option	5,9%

Respondents who are insured with Mutuelle de Santé were also asked what the disadvantages of the system are and if they had any ideas for improvements, the answers are presented in figure 6.1 and figure 6.2. The financial aspect of the Mutuelle de Santé is still the first thing that comes to mind. In 39,4% of the cases, people said that the costs of the Mutuelle de Santé are too high when they were asked about the disadvantages of the CBHI system. It is comparable to the percentage when respondents were asked if they had any ideas for improvements of the Mutuelle de Santé: 42% of the respondents would like to see lower prices.

Two other important answers come forward analyzing figures 6.1 and 6.2: the complaint about the necessary drugs that are not provided and the nationwide access to health care. Paragraph 6.2 will further discuss the financial aspects that come forward in these figures while paragraph 6.3 will elaborate on the infrastructural and quality aspects of Mutuelle de Santé.

Figure 6.1 Disadvantages of the Mutuelle de Santé system (%)
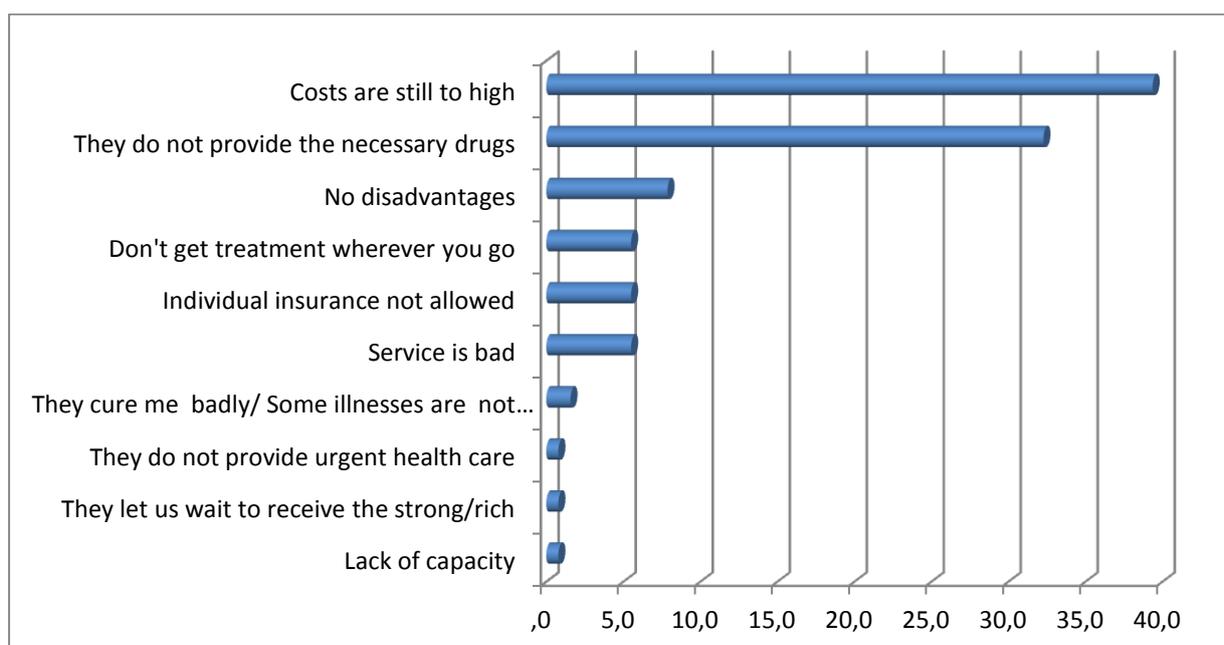
Figure 6.2 Ideas for improvements of the Mutuelle de Santé system (%)
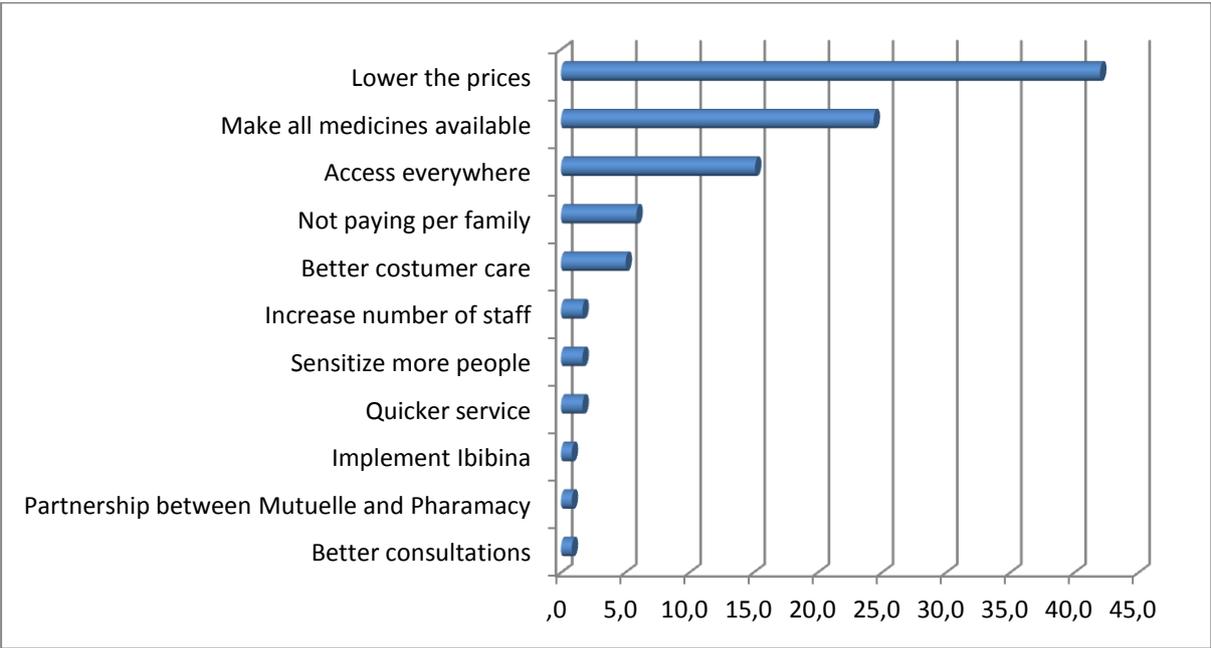
6.1.3 Sensitization

Health insurance is a debated issue in developing countries. In a lot of countries, studies show that the mindset of the people is a hard issue to deal with. It is complicated to convince people with almost no means to invest in a health insurance when they are not sure that they will need it. The mindset issue was also one of the issues we would expect to see in Rwanda. The high adhesion rates already tell us that if mindset is an issue, the Rwandan government has succeeded in convincing a lot of people otherwise. A Mutuelle supervisor at national level said that the remaining 10% of the people in Rwanda who are not insured could only be explained because of the mindset issue.

"The one and only reason I can say is the mindset of people. I think that it is not easy for young people to tell them that they need health insurance, because they feel they are strong. They tell you that they never fall sick, so why do I need it? I think that it's a very big challenge we have. We are also trying to overcome those kinds of responses from the people. That's why we have the law. It's mandatory to have a health insurance." (Mutuelle de Santé supervisor, 2013)

However, all household heads were asked in our questionnaire which factors influenced their decision to get health insurance and found no evidence that the mindset of the people was a problem. Figure 6.1.3 shows that no factors that were mentioned by respondents state that they do not need health insurance or that they do not believe that the system works, as would be expected if

the mindset of the people was a problem. The category 'Other' in figure 6.3 consists of two other categories: people who stated that Mutuelle de Santé was easy to get and people who stated that their decision was based on pre-emptive motives. So in case they became ill, they had Mutuelle de Santé to make sure they had access to health care services.

Figure 6.3 Factors that influence the decision to get health insurance

Which factors affect your decision to get health insurance?

- To be able to access health care services — 40,8%
- Not applicable — 26,9%
- Mutuelle is cheap — 21,5%
- Sensitization convinced me — 6,2%
- It's obligatory by law — 2,3%
- Other — 2,3%
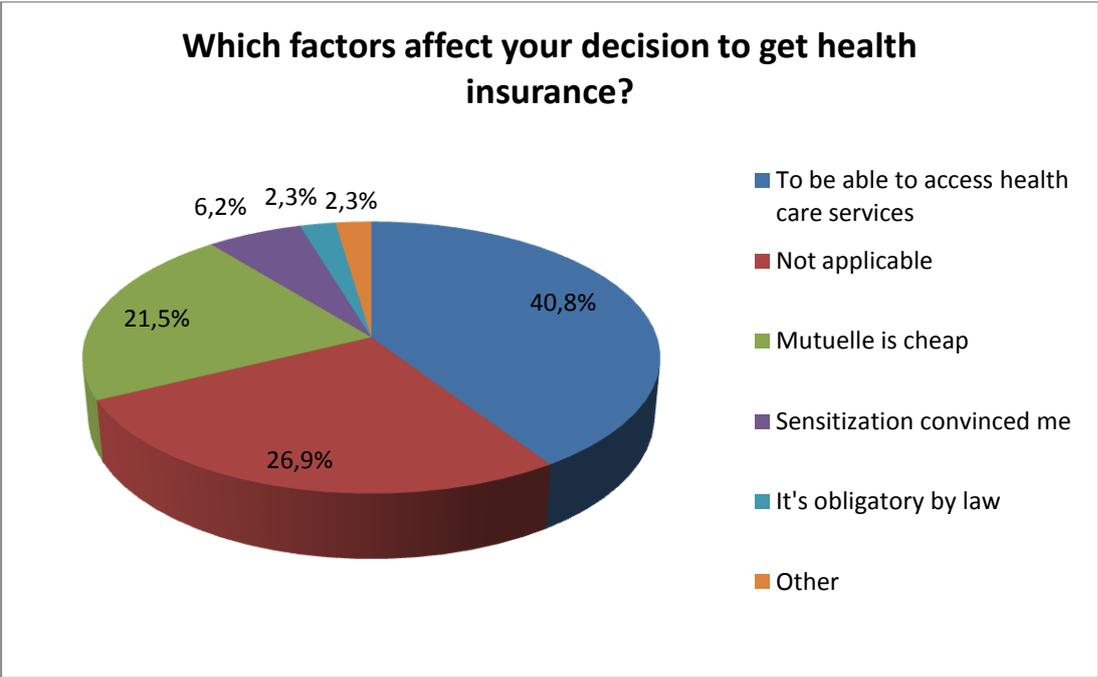
6.2 Financial aspects of the CBHI system

In this paragraph all financial aspects of the CBHI System will be discussed. The questions that have been raised in 6.1.1 about why the first and second socio-economic classes are not all insured and the issue of insurance per family will be discussed here. In addition, the process of Ibibina will be explored.

6.2.1 First and second socio-economic classes not insured

In paragraph 3.4.3 the new 2010 policy concerning the Mutuelle de Santé was explained. For the poorest groups, the most important change in this policy was that the health insurance for the first en second socio-economic classes would be paid by the Rwandese government. According to the Rwandese government every Rwandan citizen that has been classified in the first or second Ubudehe category, has a health insurance which is being paid for by the government (Mutuelle de Santé supervisor, 2013). The only exception according to the government could be that some people did not collect their card and therefore have no insurance (Mutuelle de Santé supervisor, 2013). The first and second Ubudehe classes receive a card, this card has to be presented at the place where they are registered (mostly the sector office), there they receive a validation of the card which means they have health insurance through Mutuelle de Santé. Even though the government says that not getting the card (or the validation) is the only reason possible why people in the first and second Ubudehe classes have no health insurance, they also state that the section leaders (leaders of a specific health section in charge of Mutuelle de Santé) know exactly who did not collect their card and that they will try to find those people to convince them to get their card.

Figure 6.4 Forgotten or lost Mutuelle de Santé cars in Kibuye

Source: Nyberg, 2013

According to the government it is almost impossible for someone in the first or second socio-economic class to be uninsured. As table 6.4 demonstrates, our research shows that many households which are categorized in the first or second Ubudehe group do not have medical insurance. Of the 22 households belonging to the two lowest socio-economic classes, every household should have been insured according to the government policy. However in 8 out of the 22 households no one is insured.

Table 6.4 Medical insurance by Ubudehe classification (n = 116)

		Medical Coverage		Total	N
		Insured	Not insured		
	Extremely poor and very poor households	63,6%	36,4%	100,0%	22
Ubudehe	Poor households	77,4%	22,6%	100,0%	84
	Better-off households	100,0%		100,0%	2
	No answer				8
Total		75,0%	25,0%	100,0%	116

As the 2010 policy is recently new, government officials were asked if there was a possibility that the new policy was not yet introduced nation-wide. The Mutuelle de Santé supervisor (2013) stressed that this is not possible. The government official explained that there is a very strict timeline which all the different government levels (villages, sectors and districts) have to follow. According to the Mutuelle de Santé supervisor (2013), every village has been through the new process where all the Ubudehe categories are set (the categorization has to be reviewed every two years) and every household in Rwanda has been categorized. Consequently this cannot be the explanation for the huge number of uninsured in the first and second Ubudehe categories.

The national level transfers all the money for the first and second economic Ubudehe categories to the district and then to the section level so there is a possibility that a problem occurs in that transfer process. If funds are tight or if the databases are not up to date, it is possible that not enough money is been transferred to the districts. However, the national government states that they have a database in which they can exactly see how much money each district and section needs to pay for the households they have in the first and second Ubudehe groups and that this money is transferred before the beginning of each year.

6.2.2 Insurance per family

Paragraph 5.3.3 and table 5.15 showed that family size is not significantly related to having a health insurance. However figure 6.1 and 6.2 displayed that when respondent were asked about the disadvantages and ideas for improvements of the Mutuelle the Santé, they mentioned they would like to change the new part of the 2010 policy in which individual insurance is no longer possible. Unfortunately the effects of this no policy on the adhesion rates if the people could be insured per family is hard to analyze. It could be a possibility that some households who are now completely uninsured would be insured partially. Conversely it could also work the other way around; households who are now insured completely because they have to could then decide to only insure some members.

The question remains how is it possible if the government says the new 2010 policy, which states families can't be individually insured any longer, is implemented nationwide, 8 families are found in our research areas who declare they are insured individually (table 6.5) and 18 families (table 6.6) where there are actually some people insured through Mutuelle de Santé while others have no insurance.

Table 6.5 Insurance per person and individually

How are you insured at the moment?	Frequency	Percent
Per person	8	6,9
Per family	79	68,1
Not applicable	29	25,0
Total	116	100,0

Table 6.6 Medical coverage of the households

Do you or any of your household members currently have medical coverage?	Frequency	Percent
Yes, all	78	67,2
Yes, but only some	18	15,5
Nobody	20	17,2
Total	116	100,0

The Director of CBHI of the Bugesera district (2013) stated that it was not possible that there were families who were partially insured. When confronted with the research findings two explanations were given. The first possibility was that people were in the process of paying. As families have the time to come up with their contribution from January till June it is possible that they for example already paid for two members of the family and still have to pay for the others. Families are allowed to pay in terms but only receive their insurance card if they have paid for the whole family. So, they could have interpreted the question as if was asked for whom in the family they have already paid. The one and only other possibility according to the executive secretary of the Ntarama district (2013), is that people cheat. The government official explained that for example a husband could go to another health section and say that he lives there, is not married and single and pays for his insurance there. As the Mutuelle de Santé insurance card is valid nationwide, he can then go back to his own section and receive health care. Or a woman can go to another section and say she is a widow and pay for her insurance. These two options could be valid. Another way to 'cheat' could be to state that other household members are insured in a different way (a private insurance or RAMA for example). In these cases, people only have to pay the insurance for themselves and do not have to pay for their whole family.

All these options could be valid. However if only 'cheating' was the problem then one would expect that there would not be so many families who are partially insured. The first option, of being in the paying process, would be a good explanation. If the fieldwork could be repeated it would be interesting to see if measurements after June would give a total different picture.

6.2.3 Ibibina

The 'Ibibina' process is a new mechanism that was found during field research and interviews with key informants. 'Ibibina' are literally income generating societies and are used for different purposes. In the case of health insurance, communities can save together to pay for their health insurance, Ibibina is an informal savings group. In Rwanda on average there are 10 households in one Ibibina. These households designate a person they trust to secure the money they save together until they have enough money to pay their annual premium. If a household cannot pay for (the whole) premium the Ibibina can use its savings to pay for that household in advance in order to make sure that they still have health insurance. Ibibina is not a government policy but is a community initiative and exist all over Rwanda in different forms and names. Although the government stimulates to form Ibibinas, they do not exist nationwide and therefore are found only in some districts.

Household heads were asked if they were satisfied with the new policy of Ibibina and if there were advantages using Ibibina to pay for the Mutuelle de Santé. Of the 116 households 56 were familiar with Ibibina. As stated before, Ibibina is not a national policy, although the government supports initiatives where they can, Ibibina only exists if people organize into groups themselves. Table 6.7 and 6.8 display people have mixed feelings about Ibibina. More than half of the people who are familiar with Ibibina are satisfied with the new policy and also see advantages of paying with the help of Ibibina.

Table 6.7 Satisfaction with Ibibina

Are you satisfied with the new policy of Ibibina in the Mutuelle de santé?	Frequency	Percent
Yes	32	57,1
No	24	42,9
Total	56	100,0

Table 6.8 Advantages of Ibibina

Are there the advantages to be insured with the Mutuelle de Santé using Ibibina?	Frequency	Percent
Yes	31	57,4
No	23	42,6
Total	54	100,0

Respondents were asked what the reason for being dissatisfied was. Some respondents stated that they did not understand the concept completely yet. However the most heard reason why people are not satisfied is that it takes a long time and they think it is not fair if they come up with all the money that they would have to wait for all the persons in the Ibibina before they could get their insurance card. As every person can pay at different times and can decide themselves how much they pay every time, it sometimes takes a long time to have all the money from all the families in the Ibibina collected. So while some family paid off their whole contribution in March, another one can wait until May. When all the money is collected, only then the payment for the whole Ibibina is done and everybody gets their insurance card. Some people feel that they should get their insurance card as soon as they are finished with the payments for their own family.

Respondents were also asked what kind of advantages and disadvantages there were when using Ibibina. According to the respondents the biggest advantages are that it can help the poor and it's easy because you pay in terms. Besides this it also saves time because now people do not have to go to the bank, health center or sector themselves any longer to pay for their health insurance, which is done for them. The main disadvantages that were mentioned are that the money is being kept too long and that it takes a really long time to pay if you pay in small amounts.

When considering all the pros and cons, Ibibina can be an easier way for people to pay for their health insurance. As Ibibina is not mandatory, people themselves can choose if they want to participate, and therefore can judge themselves if it is beneficial for their situation. However the Director of CBHI of the Bugesera district (2013) stated that in the cells or villages where there is Ibibina, the adhesion rates are higher. It is understandable that the government does not want to make Ibibina mandatory as there is a big trust issue involved but they could stimulate or make sure that every health section has at least one trustable Ibibina.

6.3   Infrastructural and quality aspects of the CBHI system

In the last paragraph specific attention was given to the financial aspects of the CBHI system. In this paragraph the quality and infrastructural aspects of the CBHI system will be discussed.

6.3.1   Availability of all drugs and nation-wide access

In paragraph 6.1.2 the satisfaction of people with Mutuelle de Santé was discussed. Figure 6.1and 6.2 presented the disadvantages and ideas for improvements people had for Mutuelle de Santé. The two most outstanding issues respondents reported were; firstly, that they were not always provided with the necessary drugs to cure their illness or that not all drugs were available; and secondly, that there is no nation-wide access yet which means that they could not access health care wherever they went. Nation-wide access is important to a lot of Rwandese people as some people work in the city throughout the week while they live in a rural area far away where they only are on Sunday. It's important that their insurance covers both areas.

The Mutuelle de Santé supervisor stated that the quality and access of the health care system has improved remarkably over the last decade (2013). A lot of studies show that this is indeed true; every health section for example has a health center now which has brought health care much closer to the people. However the two problems above still arise and were also confirmed by the Director of CBHI of Bugesera district (2013). According to this government official there are still problems with the supply of medicines. This is especially a problem in health sections where there is a financial shortage. Because of these shortages, invoices to the health center and hospitals are not paid in time and therefore the delivery of drugs is delayed. The complaint about the inefficiency of drugs or not getting sufficient drugs right away can be partially attributed to the referral system. In the same way people have to go through the referral system by starting at the lowest health care access point when people are ill, the simplest form of medicine that might cure the disease is been prescribed first. An additional factor is that at the lowest level of health care, in the health center, there is no doctor present, only a nurse. This makes it harder to accurately judge which medicines have to be provided at what point and to whom.

The second most heard disadvantage of Mutuelle de Santé concerns the accessibility, as explained earlier. While the 2010 government policy promised having insurance through Mutuelle the Santé ensures nationwide access to the health care system, this in fact does not seem to be the case. This was also confirmed by the Director of CBHI of Bugesera district (2013), although he stressed that this

problem will soon be solved. According to the government official different health centers and different health sections, at least in his district, are now in the process of making contracts which should resolve this problem. It is estimated that these contracts will be finished in 2014; it remains to be seen at that point if this solves the problem of nationwide access.

6.3.2   Community involvement

Academic literature on the subject (Musango et al., 2013; Bennett 2004; Soeters et al. 2006) and the Rwandan government itself often stress that the CBHI system works so well because the community is really involved in every part of the process. However, respondents were asked if their community is involved in the CBHI system, only one respondent answered yes (Figure 6.5).

Figure 6.5 Community involvement in the CBHI system (n=116)

Is your community involved in the CBHI system?

I don't know/
No answer
29,3%

Yes
0,9%

No
69,8%
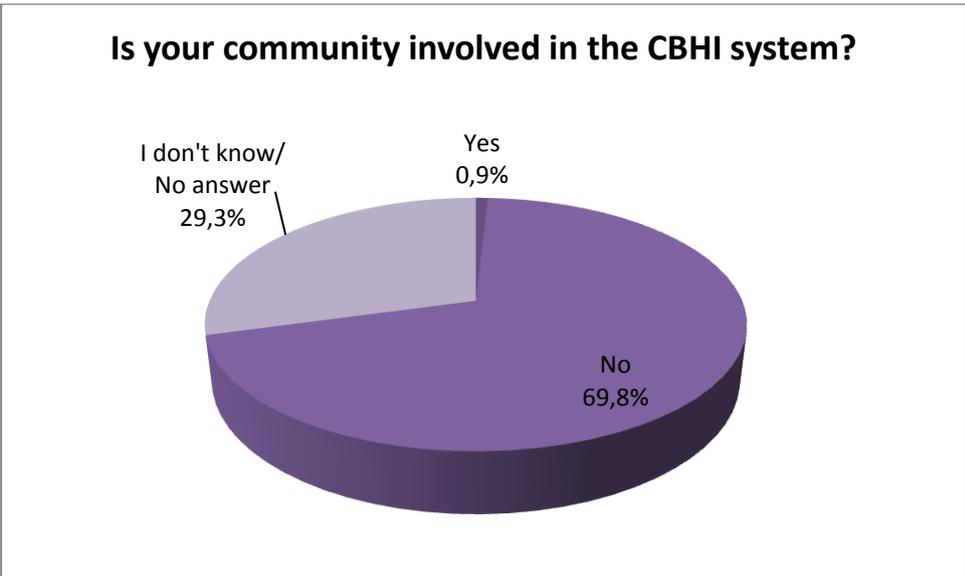
The Mutuelle de Santé supervisor (2013) was asked how exactly the community involvement works. She explained that in each section there is a comité de gestion which is the management committee. This committee consists out of people from the community whom are elected by the community themselves. The management committee can monitor and put questions to the section manager. In addition, there is a mobilization committee at village level which is trying to make sure that every single person has insurance. At cell level there is also a sensitization committee which informs people about the importance of having insurance. According to the Director of CBHI in Bugesera district (2013), there is a sensitization campaign every three months where people can also discuss the problems they have with the system. Additionally, the government official stated that in every health

center and hospital there is a suggestion box where people can report their problems and suggestions. The management committee collects those suggestions and gives feedback if needed.

6.4   Conclusion

The difference in the adhesion levels found during the field research and those from government sources are hard to explain. Some variance could be explained by the different ways in which calculations are made or the different levels of measurement (district and sector). However this cannot explain all of the differences in the outcomes. Another reason could be that adhesion levels actually went down the past years which could be a consequence of the new policy measures regarding the Mutuelle de Santé, however the government states that adhesion rates have only gone up the last years.

Satisfaction with the Mutuelle the Santé is high, 70,5% of the people insured with Mutuelle de Santé are satisfied with the insurance. Reasons for not being satisfied according to the respondents are most of the time due to the high cost and because of the unavailability of certain drugs.

In a lot of development countries the mindset of the people or the information regarding CBHI is a problem. Because of lack of information people do not see the benefits of health insurance or think that having a health insurance increases the chance of getting a disease. In Rwanda there is no sign of problems with information regarding CBHI. All respondents knew exactly how CBHI worked, what the benefits are and that it does not affect falling ill. Rwanda has large sensitization campaigns on national, district, sector and even cell level which are repeated every year.

The largest pro-poor policy in Rwanda regarding health insurance should ensure that the annual premium of the first and second socio-economic classes is paid by the government. The field research shows that this is not the case and still only two-third of the poorest groups is insured. While this is not possible according to government officials, there can be issues in the money transferring process between the national and district governments.

Another new policy measure entails that people can no longer be insured individually but have to be insured per family. Nevertheless, in our research we found that some families are still insured per individual. As families were in the process of paying during the time of the research, this could be an explanation that people had not paid for their whole family yet but only for some people. In addition, an option could be that people cheat the system because they do not have the financial resources to pay for their entire family.

Ibibina is a system where people can save up money in their community bit by bit to make sure they have enough money to pay their health insurance when they have to. This system is not mandatory in Rwanda and is not nation-wide either. Although the system still has some downsides, the people who use Ibibina are on average satisfied. While it is understandable that the government does not want to make this a compulsory system, they could stimulate the formation of Ibibina schemes everywhere in the country, or for example in every health section.

When asking respondents what kind of improvements could be made with the Mutuelle de Santé, several infrastructural and quality aspects were mentioned. The largest problems encountered are that not all drugs or not enough drugs are available at health centers. In addition, Mutuelle de Santé should guarantee nationwide access to health care services but people still come across problems when they try to access health care services outside the sector in which they are registered.

To conclude, there are policies regarding health insurance which are specially created for the poorest groups. While two-thirds of the poorest groups are included in the health insurance system, the pro-poor policies do not include all poor. Although, the Rwandan government state that their policies include all poorest groups, research shows that this is not the case.

7. The Rwandan CBHI system in a broader context: a comparison with 5 other developing countries

7.1   Introduction

In this chapter the five health insurance systems that were described in chapter 2 will be compared with the health insurance system of Rwanda. The five variables that were taken as a basis for comparison will be discussed separately. The situation in Rwanda on that specific variable will be compared with the situation in the five chosen countries. As the variables are community based, nationwide system en decentralized system are so interlinked with each other, those variables will be reviewed together. Matrix 7.1 gives an overview of the selected variables and the compared countries. After the paragraphs about the other two variables, income dependent premiums and special pro-poor policies/subsidies, an additional paragraph will discuss the enrollment in the different countries. Not only the hard figures about the adhesion rates but also reasons why people do not have insurance. In the conclusion a broader picture will be given about the different components from different systems and why some work and others do not.

This chapter will answer the third sub question of this research: *How does the Rwandan CBHI system work in comparison to other developing countries and what can we learn from the Rwandan system in a broader development perspective?*

Matrix 7.1 Country comparison of health insurances based on five variables

	Community based	Nationwide system	Income dependent premiums	Special pro-poor policies/subsidies	Decentralized system
Rwanda	√	√	√	√	√
Ghana	√	√	X	√	√
Philippines	√	√	√	√	√
China	√	X	√	√	√
Uganda	√	X	X	X	√
Colombia	X	√	X	√	√

7.2   Community based, nationwide and decentralized system

A decentralized system of health insurance can improve adhesion rates. When there are district offices who know counties or villages top to bottom, information and sensitization efforts can pay of more. District offices know the problems in the region, where they come from and where the bottlenecks are. In the Philippines the CBHI schemes have helped to reach universal coverage and they are now gradually moved from accreditation of such schemes towards their incorporation into the national program but with district offices. The same situation took place in Rwanda. CBHI schemes were spread across the nation and voluntary in the beginning. Now all those separate schemes are part of one national scheme. Another advantage of a nationwide scheme is that, like in the Philippines, some community based schemes are not financially viable in the long run and are highly dependent on the local political situation. A national scheme is the best possible risk pooling and allows for financial stability. In China in the 1980s and 1990s there were also community based schemes but the schemes grew slowly and most of them could not survive. Most of the attempts were difficult to sustain for a long time, especially in the poor rural areas, because of inadequate funding, dwindling political interest and poor management. National schemes can also be administered more efficiently. However cultural attitudes and health –seeking behavior should be taken into account. In China the health insurance system operates at county level and exhibits variations in design and implementation across county. A downside of this system is that local governments are free to choose the benefit package and administrative arrangements according to local conditions. In Colombia, research indicates that the screening of low-income families using decentralized systems and conducted by local authorities is successful in targeting poor individuals in Colombia.

7.3   Income dependent premiums

In Rwanda, income dependent premiums are important aspects of the CBHI system. Not only as a more sustainable finance mechanism but also to secure the solidarity of the system. For Rwanda the process is simple because all citizens are registered in socio-economic groups. Because of this registration it is uncomplicated to make different policies income dependent. In Ghana, in theory, the out of pocket premium for contributors is income adjusted. However, in practice it is almost impossible to assess non formal sector incomes and many district scheme offices simply apply a flat rate. In the Philippines the contribution scheme is income related which promotes equity. In China there is a flat-rate household contribution for the insurance scheme.

7.4   Special pro-poor policies/subsidies

The Rwandan government special policy regarding the poorest of the poor is simple. For the 'indigents' as the government calls them, or those families who are registered as belonging to the poorest two socio-economic classes, the annual premium is being paid by the national government. As described earlier, for Rwanda these 'poorest of the poor' are easy to target as the identification of citizens is not a problem. Ghana's problem with identification is not new, and has beset the implementation of other policies which are targeting specific groups. Ghana has special policies for people who qualify as indigents (when people are unemployed, no place of residence, cannot be supported by other persons etc.) and therefore are exempted from premium payments. Apart from if these qualifications are the best criteria to select the poorest groups, if you cannot identify which people belong to these groups then the policy does not work in practice. Next to the identification problems in Ghana, observation an experience over the years suggests that effectively these criteria do not identify the poorest of the poor in Ghana. Hardly anyone qualifies for an exemption with those strict criteria despite observations that many are not enrolled because of difficulties in paying the premium. If the criteria are too strict for the poor to claim subsidies or the subsidies end up with an unintended targeted population then the policy does reach its intended goals. In Rwanda the division of socio-economic classes was not made for one special policy concerning health insurance. The identification is done as a basis for all pro-poor policies in different fields, not only for health but also for education policies for example. But although in Rwanda every person is identified and the poor people can be easily targeted, research shows that still not all the people classified as being poor and entitled of having their health insurance paid by the government, receive this subsidy.

In the Philippines, local and national government also pay (part of) the annual premium for the indigents according to their financial status. However, in the Philippines there is uncertainty about the height of reimbursement of out of pocket payment which makes the barrier to use health care services higher for the poorest groups. In this case, the poorest groups might be insured but if they still do not use health care services then having a health insurance is pointless. Another problem with the special pro-poor policies in the Philippines is that identification of the poor is time consuming and prone to political influence. A quick and reliable identification mechanism would be useful.

In China the poorest are not part of the normal insurance system but there is a special medical assistance (MA) scheme which is aimed at assisting poor and certain other types of households, as

well as near-poor households facing high health care expenses. But even when the poorest groups are insured, China has another problem. Even if the poorest families have insurance, the co-payment for hospital care for example is so high that they cannot use those facilities because they have to contribute to much out-of pocket money themselves.

Uganda has abolished user fees in an attempt to make health care services more accessible but as the out of pocket expenses were kept high, financial accessibility has remained a challenge and the system unsustainable. Uganda has no exemptions or special policies to reach the poorest groups. The WHO discussion paper on CHI in developing countries points out that exemptions for poor households, donations both international and local have a crucial role to play as way of promoting increased membership and universal coverage (WHO, 2003)

The Colombian health reform of 1993 addressed inequities in access to health services by establishing a segmented health insurance policy with solidarity financing by means of a crossed subsidy whereby high income workers contribute a portion of their pay to the poor population. Besides this, in Colombia there is a Subsidized Regime to make sure that the poorest groups have health insurance. The subsidies in this system work approximately the same as in Rwanda. There is a crude welfare index that ranks families according to a set of household characteristics, human capital endowment, and reported income. All families are ranked into six levels and, in principle, only families in levels 1 and 2 (the poorest) are eligible for subsidized health insurance. Those in level 3 may receive the subsidy only if funding is available and those in the two lowest levels have been taken care of. Because there is no guarantee that local governments will receive enough funding to grant the subsidy to all eligible individuals, the subsidized regime gives priority to certain groups defined by easily identifiable characteristics or tags.

7.5   Enrollment

Adhesion rates

In Rwanda enrollment lies between 70% and 80% of the total population. Adhesion rates are lowest in the poorest groups but still lie around 65%. Enrollment in Ghana lies around 55% in 2009 but evidence shows that the poorest groups are still not insured. In the lowest income quintile in Ghana only 27% is insured. In 2004, the population coverage in the Philippines was around 70% but with formal sector workers comprising 65% of all enrollees. Since 2000, political efforts have led to large-scale enrollment of indigents but sustaining this enrollment is now a major challenge.

While China had a community based insurance scheme which covered 90% of all villages until the mid 1970s, in 2003 around 96% of rural households were uninsured. With the new system started in 2003 and as a result of the modest program fee, government subsidy, strong government mobilization ability, and medical relief for the poor, participation rates are now extremely high, even in poor areas. In the first three years, the participation rates were around 75%, and increased to 80,7% in 2006 and 85,7% in 2007.

Since the mid 1990s, the Ugandan government has been promoting CHI schemes but a country inventory in 2006 of CHI schemes showed low enrollment. There are 40,000 people enrolled in the schemes out of a target population of over half a million in the districts with schemes. Moreover, the total number of schemes has not exceeded 14.

In Colombia insurance coverage since the new system grew from 15,7% in 1990 to 57% of the population 1997. Besides this enormous increase, the largest proportional gains were registered in the lowest income quintiles.

Reasons (not) to enroll
Voluntary enrollment in Ghana could be improved among the poor if health care quality and other scheme factors improve. Quality of the health care system is also a problem in the Philippines with a special need to improve the infrastructure as there are no health care facilities in certain rural areas. If the people cannot reach health care facilities there is also no benefit in being insured. Improvements in the quality of health services make the demand for services go up and with that the demand for health services. The Rwandan health care system and especially the infrastructure have been improved tremendously over the past years and research showed that no one stated the quality or infrastructure of the health insurance system as a reason not to be insured.

In China poor farmers are still left out of the scheme due many possible reasons. First, the subsidized premium may still be too high for the poor households to join the insurance scheme. Second, the co-payment rate might be too high for the poor to access health care service, and therefore they may choose not to join the scheme.

In Uganda people were also not only uninsured because of the high premium but also because of the long distance from the communities to provider health facilities, poor quality of health care, lack of

trust in financial organizations, poor involvement of the community in the management of the hospital-based CHI model and unattractive benefit packages. If the quality and the infrastructure of a health system are low then it is hard to convince people of the importance of a health insurance. As in other developing countries a problem in Uganda is also the lack of information and poor understanding of the concepts of CHI. Apart from misunderstanding it is also not easy to meet the requirements to enroll in a CHI scheme. Most of the schemes in Uganda fixed the requirement that at minimum, 60% of any group must join a scheme before enrollment, as a measure against adverse selection.

The different systems under comparison are not all compulsory. In Rwanda, having a health insurance is mandatory by law, although people know that the government does not take action if they do not have insurance. If having health insurance is compulsory in a country then this is the conventional way and not having a health insurance requires explanation. If health insurance is not compulsory then it is something extra which people can choose for themselves and it is less common. In China the voluntary participation principle leads to considerable high management costs. Another problem with the voluntary participation is that it might give problems with the sustainability of the system because of the potential impacts of adverse selection: the voluntary scheme could attract a disproportionate share of relatively unhealthy people.

7.6   Conclusion

Different aspects of health insurance system of various countries have to be compared with the Rwandan system to answer the sub question of this research: *How does the Rwandan CBHI system work in comparison to other developing countries and what can we learn from the Rwandan system in a broader development perspective?*

Matrix 7.2 Summary of key components of the five analyzed variables

Analyzed variables	Key components
Community based	• Easier introduction of the system • Voluntary characteristics avoids reluctant mindsets • Ensures a gradual built up of the system
Nationwide system	• Best possible risk pooling • Ensures financial stability • Less dependent on local political situation • More efficient management of the system
Income dependent premiums	• More sustainable finance mechanism • Secure solidarity of the system • Easier to affect pro-poor policies
Special pro-poor policies/subsidies	• Include groups in the informal sector • Ensuring health care access for the poorest groups • Insures health care access equality
Decentralized system	• Easier to reach and inform people • Possibility to improve adhesion rates • Can handle specific bottlenecks of the region • More successful in targeting the poorest groups

Matrix 7.2 provides an overview of the key components of the five variables analyzed in this chapter. From comparing the different countries on the community based, nationwide and decentralized system variables it shows that an ideal combination would be a nationwide decentralized system

which was or still partially is community based. A national scheme is the best possible risk pooling and allows for financial stability. Decentralized systems can help target the poorest groups and spread the information about health insurance that is needed in specific regions. Community based schemes have included informal sector workers in insurance schemes and in of lot of countries where health insurance is still associated with diseased, communities are the best level to introduce people to the concepts of CBHI. When local community based schemes are maturing it can be wise to incorporate them (maybe after a period of accreditation) in a national scheme as this insures nationwide equality and is more sustainable.

Income dependent premiums are in practice only found in Rwanda. Although some countries have in theory some income dependent policies for premiums, in practice, mostly because of identification problems, flat rates are the ordinary course of business. Income dependent premiums have the benefit of contributing to the financial sustainability of a health insurance system but also ensure understanding and solidarity among members. Rwanda had at first a health insurance policy where all members, regardless of income, paid the same amount of annual insurance. The largest complaint of the poorest families was at the time that they had to pay the same as families who could easily afford it.

Special pro-poor subsidies or policies exist in almost all compared countries except for Uganda. In the countries which have such a policies there a different problems with those policies. The most urgent problem is the identification problem. When there are policies in place but people cannot be identified as poor then the policies do not work in practice. Another problem is that some policies for subsidies for the poor are to strict making that hardly anyone qualifies to meet the criteria of 'being poor'. If the criteria are too strict for the poor to claim subsidies or the subsidies end up with an unintended targeted population then the policy does not reach its intended goals.
Besides problems with identification and targeting the co-payment can also cause difficulties. Insurance rates do not say everything. People can be insured, even a huge part of the poorest but if the co-payment or the out of pocket fee people have to pay when receiving health care services is too high then people will not use health care services after all. If the consequences of policies is that people do have health insurances but do not make use of health care services then the insurance is pointless.

While in Uganda the health insurance adhesion rates are dramatically low, Ghana and Colombia are both targeting more than half of the population with that difference that Ghana does not seem to reach the poorest groups while Colombia succeeds at that point. The Philippines reach 70% of the population but with most of them formal sector workers. In Rwanda and China adhesion rates are the highest and they also both succeed in reaching the poorest groups (although not all).

In Rwanda when people were asked why they were not insured almost all people answered that this was because of financial reasons. Issues with quality or infrastructure of the health care system did not seem to influence their decision to get health insurance. In Ghana, the Philippines and Uganda the quality and the infrastructure need to be improved drastically. If the quality and the infrastructure of a health system are low then it is hard to convince people of the importance of a health insurance. In China the problem of the high co-payment also makes that people are not getting health insurance because they are not going to use health care services either way. In Uganda the information of CHI is also still a problem. The system is very young and in many parts of the country health insurance is still related to attracting diseases. Besides this problem CBHI in Uganda is still really small scale and it is therefore hard for individuals or small groups to join as the requirements for enrollment are high.

A last remarkable observation is that it seems that a compulsory system (even only in name) works better than a voluntary system, especially when considering the problem of adverse selection. Governments are sometimes hesitant to make the health insurance scheme mandatory, like China, as they do not want to impose any financial burden on people who are already in a difficult financial position. Or they need to overcome the public's resistance to paying any money into a government-run insurance program first because people learn local governments have misused this before. Voluntary participation can however lead to considerable high management costs. Another problem with the voluntary participation is that it might give problems with the sustainability of the system because of the potential impacts of adverse selection: the voluntary scheme could attract a disproportionate share of relatively unhealthy people.

It becomes clear that the Rwandan government has, in theory, made the right policy decisions designing the health insurance system, looking specifically at the selected five variables. Although the Rwandan system is not a perfect system either, when comparing the Rwandan health insurance system to the other five countries it would not be wise to change some policies on these specific

components. As we can see for all the five components, there are more disadvantages which can cause decrease in adhesion levels or problems with financing and sustainability of the health insurance system.

8. Conclusion and some recommendations

Community based health insurance is a hot-topic in the academic world of development experts. There are a lot of different insurance systems, empirical studies are scarce and especially comparative studies are hard as no health insurance system and no context is the same. Based on field research done in Rwanda and a theoretical comparative study of five other developing countries, the status of the health insurance system in Rwanda was analyzed, with a special focus on the poorest groups in society.

8.1   Answering the research question

 The main research question in this thesis was:

How are the poorest groups in different geographic spaces in Rwanda included in the health insurance system, how are they affected by the development policies concerning health insurance and what can we learn from them in a broader development perspective?

This main question is split into the three questions. All sub questions will be covered separately in this paragraph. At the end, a SWOT analysis of the CBHI approach will be presented.

1. *How are the poorest groups in different geographic spaces included in the health insurance system compared to other groups?*

In order to answer this question, adhesion rates were tested for different groups. Results of the analyses are not all according to assumptions made on forehand. There was no scientific statistical difference in the health insurance adhesion rates between men and women. Only the group of female headed household widows showed higher adhesion rates than average levels. This is explainable because of the special policies created for women were widowed due to the genocide of 1994.

As expected, households with higher income and higher completed levels of education were significantly more insured than households with lower income and lower completed levels of education. However there was no significant relation between adhesion rates and Ubudehe classification. Type of geographic space, family size, and seeking health care also had no significant influence on having a health insurance. Yet households where members had been ill in the last twelve months were significantly more often insured than households that did not seek health care in the past twelve months.

People can be uninsured for a lot of different reasons. While there were many assumptions that quality, infrastructure, misunderstanding etc. could influence the decision of getting health insurance, the research showed that financial issues were the reason for almost all uninsured households to not have health insurance.

As an answer to the first sub question: the poorest groups in different geographic spaces are partially included in the health insurance system. They are still the group which has the least people insured compared to other, richer groups in society but on average about 65% of the poorest is included in the health insurance system.

2. *Which policies concerning health insurance are created for the poorest groups and how are these poorest groups affected by it?*

The difference in the adhesion levels found during the field research and those from government sources are hard to explain. Some variance could be explained by the different ways in which calculations are made or the different levels of measurement (district and sector). However this cannot explain all of the differences in the outcomes. Another reason could be that adhesion levels actually went down the past years which could be a consequence of the new policy measures regarding the Mutuelle de Santé, however the government states that adhesion rates have only gone up the last years.

Satisfaction with the Mutuelle the Santé is high, 70,5% of the people insured with Mutuelle de Santé are satisfied with the insurance. Reasons for not being satisfied are most of the time because of the high cost and because not all drugs are available according to the respondents.

In a lot of development countries the mindset of the people or the information regarding CBHI is a problem. Because of lack of information people do not see the benefits of health insurance or think that having a health insurance increases the chance of getting a disease. In Rwanda we see no problem with information regarding CBHI. All respondents knew exactly how CBHI worked, what the benefits are and that it does not affect falling ill. Rwanda has large sensitization campaigns on national, district, sector and even cell level which are repeated every year.

The largest pro-poor policy in Rwanda regarding health insurance should ensure that the annual premium of the first and second socio-economic classes is paid by the government. The field research shows that this is not the case and still only two-third of the poorest groups is insured.

While this is not possible according to government officials, there can be issues in the money transferring process between the national and district governments.

Another new policy measure entails that people can no longer be insured individually but have to be insured per family. Nevertheless, in our research showed that some families are still insured per individual. As families were in the process of paying during the time of the research, this could be an explanation that people had not paid for their whole family yet but only for some people. Besides this an option could be that people cheat the system because they do not have the financial resources to pay for their entire family.

Ibibina is a system where people can save up money in their community bit by bit to make sure they have enough money to pay their health insurance when they have to. This system is not mandatory in Rwanda and is not nation-wide either. Although the system still has some downsides, the people who use Ibibina are on average satisfied. While it is understandable that the government does not want to make this a compulsory system, they could stimulate the formation of possibilities to join an Ibibina scheme everywhere in the country, or for example in every health section.

When asking respondents what kind of improvements could be made with the Mutuelle de Santé, several infrastructural and quality aspects were mentioned. The largest problems encountered are that not all drugs or not enough drugs are available at health centers. In addition, Mutuelle de Santé should guarantee nationwide access to health care services but people still come across problems when they try to access health care services outside the sector in which they are registered.

To conclude, there are policies regarding health insurance which are specially created for the poorest groups. While two-thirds of the poorest groups are included in the health insurance system, the pro-poor policies do not include all poor. Although, the Rwandan government state that their policies include all poorest groups, research shows that this is not the case.

3. How does the Rwandan CBHI system work in comparison to other developing countries and what can we learn from the Rwandan system in a broader development perspective?

From comparing the different countries on the community based, nationwide and decentralized system variables it shows that an ideal combination would be a nationwide decentralized system which was or still partially is community based. A national scheme is the best possible risk pooling and allows for financial stability. Decentralized systems can help target the poorest groups and spread the information about health insurance that is needed in specific regions. Community based schemes have included informal sector workers in insurance schemes and in of lot of countries where health insurance is still associated with diseased, communities are the best level to introduce people to the concepts of CBHI. When local community based schemes are maturing it can be wise to incorporate them (maybe after a period of accreditation) in a national scheme as this insures nationwide equality and is more sustainable.

It becomes clear that the Rwandan government has, in theory, made the right policy decisions designing the health insurance system, looking specifically at the selected five variables. Although the Rwandan system is not a perfect system either, when comparing the Rwandan health insurance system to the other five countries it would not be wise to change some policies on these specific components. As we can see for all the five components, there are more disadvantages which can cause decrease in adhesion levels or problems with financing and sustainability of the health insurance system.

As an overview, a SWOT analysis is presented in matrix 8.1 to point out the strengths, weaknesses, opportunities and threats of the CBHI approach in Rwanda.

Matrix 8.1 SWOT analysis of the CBHI approach in Rwanda

	Positive	*Negative*
Internal	**Strengths** • Gradual introduction of the system • National risk pooling • Decentralized system • Income dependent premiums • Effective pro-poor policies	**Weaknesses** • Weak quality of personnel • Needed drugs not always available • Weak management capacity • Nationwide access not ensured
External	**Opportunities** • Stimulate scaling up of Ibibina • Permit independent research to tackle bottlenecks • Review discrepancies in pro-poor policies • Review disadvantages of the 2010 policy	**Threats** • Financial sustainability • Retracting of development partners • Population growth which increases health care costs • Stabilization of the poorest groups instead of expected decrease

Concluding with answering the research question: *How are the poorest groups in different geographic spaces in Rwanda included in the health insurance system, how are they affected by the development policies concerning health insurance and what can we learn from them in a broader development perspective?*

The poorest groups in Rwanda are more included in the health insurance system than poor groups in other developing countries. Although one-third of the poorest groups are still not insured in Rwanda, specific pro-policies have beneficiated many of the intended target groups. The achievement of such high adhesion rates, even if they are lower than what the government claims them to be, is remarkable for a developing country. Although Rwanda has several context specific advantages that make health insurance policies and specific pro-poor policies easier to implement, different parts of the Rwandan system could be tried in other developing countries.

8.2 Some recommendations

Recommendations for further academic research as well as policy makers could be made based on this research.

As this study was small and could be context specific, future academic research on a larger scale and in different parts of the country, could give more insight in where the specific bottlenecks of the health insurance system are and if they differ in various districts. Another advantage could be to conduct research in a different time period, preferably just after the deadline when all annual premiums have to be paid. In that case, there can be no discussion if people are in the middle of paying their health insurance and therefore influence research outcomes.

For the Rwandan government it could be an option to give permission to independent researches to conduct a large research on CBHI. In that case problems that exist within the health insurance system and especially with pro-policies can be handled. At the moment, the Rwandan government states that there are hardly any issues left with their pro-poor policies and that they have almost reached universal coverage. As this is clearly not the case, it would be wiser to discover where the problems really are so that they can be solved instead of denying that there are still challenges left.

Recommendations regarding the system specifically would lie in improving the availability of drugs on all health care access levels (especially the lowest levels) and making the nation-wide access policy work in practice. Besides this, a future problem could lie in the financial sustainability of the health insurance system. Although the health insurance system was financially healthy for the last years and even had a positive balance, financial projections from 2015 and onwards are more negative due to rising health costs. At last, the Ibibina process is spreading across country, people who use it are generally satisfied with the opportunity of saving for their health insurance and policy makers are claiming that areas where the possibility of Ibibina exists are reaching higher adhesion levels. The Rwandan government does not have to make Ibibina mandatory but they could stimulate that in every health section there is a possibility to join Ibibina if a households wishes to.

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Annex I Selection of the research areas

To get the sample size, the following formula is used

$$n = \frac{no}{1+\frac{no}{N}}$$

Where

n is the sample size

no is the sample size for a universe of infinite size

N Reference is the population or universe survey

$$no = \frac{Z^2\alpha/2\ po\ qo}{d^2}$$

Where

po is the probability of success

qo is the probability of failure

d is the margin of error

This study used the marginal of error of 9% with a significance level of 0.05. The degree of confidence interval is 95%. $Z\alpha/2$=1.96 with probability of success po=0.5 and probability of failure qo=0.5

Then,

$$no = \frac{(1.96)2 * 0.5 * 0.5}{(0.09)2} = 118.5679$$

The target population is 5229, the sample will be

$$n = \frac{118.56795}{1+\frac{118.5679}{5229}} = 115.9 \sim 116$$

Because the different villages have different numbers of households, the proportional sample size of each village is calculated using the following formula

$$ni = \frac{Ni \; x \; n}{N}$$

Where

ni is the sample size proportion to be determined

Ni is the population proportion in the village

n is the sample size

N is the total population

Villages	Ni	The proportion in each village (*ni*)	*ni*
Amahoro	135	$ni = \dfrac{135 \; x \; 116}{5229} = 2,9$	3
Inyarurembo	83	$ni = \dfrac{83 x \; 116}{5229} = 1,8$	2
Ubuzima	233	$ni = \dfrac{233 \; x \; 116}{5229} = 5,1$	5
Hirwa	130	$ni = \dfrac{130 \; x \; 116}{5229} = 2,8$	3
Imanzi	124	$ni = \dfrac{124 \; x \; 116}{5229} = 2,7$	3
Ituze	216	$ni = \dfrac{216 \; x \; 116}{5229} = 4,7$	5
Umwezi	120	$ni = \dfrac{120 \; x \; 116}{5229} = 2,6$	3
Imihigo	152	$ni = \dfrac{152 \; x \; 116}{5229} = 3,3$	3
Rugenge	202	$ni = \dfrac{202 \; x \; 116}{5229} = 4,5$	5
Isangano	342	$ni = \dfrac{342 \; x \; 116}{5229} = 7,6$	8
Gatoro	201	$ni = \dfrac{201 \; x \; 116}{5229} = 4,4$	4
Kidudu	173	$ni = \dfrac{173 \; x \; 116}{5229} = 3,8$	4
Rubomborana	126	$ni = \dfrac{126 \; x \; 116}{5229} = 2,7$	3
Rugarama	244	$ni = \dfrac{244 \; x \; 116}{5229} = 5,4$	5

Kagoma I	112	$ni = \dfrac{112 \times 116}{5229} = 2{,}48$	3
Kiganwa	292	$ni = \dfrac{292 \times 116}{5229} = 6{,}4$	6
Nyarunazi	186	$ni = \dfrac{186 \times 116}{5229} = 4{,}1$	4
Rusekera	187	$ni = \dfrac{187 \times 116}{5229} = 4{,}1$	4
Gatimba	169	$ni = \dfrac{169 \times 116}{5229} = 3{,}7$	4
Kiziranyenzi	191	$ni = \dfrac{191 \times 116}{5229} = 4{,}2$	4
Kigarama	198	$ni = \dfrac{198 \times 116}{5229} = 4{,}3$	4
Kabazera	198	$ni = \dfrac{198 \times 116}{5229} = 4{,}3$	4
Gaseke	169	$ni = \dfrac{169 \times 116}{5229} = 3{,}7$	4
Rimwe	93	$ni = \dfrac{93 \times 116}{5229} = 2{,}1$	2
Rugendabare	178	$ni = \dfrac{178 \times 116}{5229} = 3{,}9$	4
Rweya	185	$ni = \dfrac{185 \times 116}{5229} = 4{,}1$	4
Nyamirembe	212	$ni = \dfrac{212 \times 116}{5229} = 4{,}6$	5
Nyabyondo	201	$ni = \dfrac{201 \times 116}{5229} = 4{,}4$	4
Rutonde	177	$ni = \dfrac{177 \times 116}{5229} = 3{,}9$	4

Selection of the research cells

Sectors	Cells	
Muhima	Amahoro	
	Kabasengerezi	
	Kabeza	
	Nyabogogo	
	Rugenge	
	Tetero	
	Ubumwe	
Ntarama	Cyugaro	
	Kanzenze	
	Kibugungo	
Shyorongi	Bugaragara	
	Kijabagwe	Selected instead of Muvumu
	Muvumu	Originally selected but not accessible due to the rainy season
	Rubona	
	Rutonde	

Selection of the research villages

Sector	Selected Cells	Villages	
Muhima	Amahoro	Amahoro	
		Amizero	
		Inyarurembo	
		Kabirizi	
		Ubuzima	
		Uruhimbi	
	Kabeza	Hirwa	
		Ikaze	
		Imanzi	
		Ingenzi	
		Ituze	
		Sangwa	
		Umwezi	

	Rugenge	Imihigo	
		Impala	
		Rugenge	
		Ubumanzi	
	Ubumwe	Bwahirimba	
		Duterimbere	
		Isangano	These villages have been merged to 1 new village under one new cell and village name of Isangano
		Nyanza	
		Urugwiro	
		Urwego	
Ntarama	Cyugaro	Gatoro	
		Kayenzi	
		Kidudu	
		Kingabo	
		Rubomborana	
		Rugarama	Selected instead of Rugunga
		Rugunga	Originally selected but not accessible due to the rainy season
	Kibugungo	Kagoma I	
		Kagoma Ii	
		Kiganwa	
		Nganwa	
		Nyarunazi	
		Rugengeri	
		Rusekera	
Shyorongi	Bugaragara	Gatimba	
		Gatwa	
		Gisiza	Originally selected but not accessible due to the rainy season
		Kabaraza	Selected instead of Nyakaruri
		Kigarama	
		Kiziranyenzi	Selected instead of Gisiza
		Nyakaruri	Originally selected but not accessible due to the rainy season
		Nyarushinya	
	Kijabagwe	Gaseke	

		Kabagabaga	
		Kabakene	Originally selected but not accessible due to the rainy season
		Nyamugari	
		Rimwe	
		Rugendabare	Selected instead of Kabakene
	Rutonde	Bugarura	Originally selected but not accessible due to the rainy season
		Mwagiro	
		Ngendo	Originally selected but not accessible due to the rainy season
		Nyabisindu	
		Nyabyondo	
		Nyamirembe	Selected instead of Nyamirembe
		Rutonde	
		Rweya	Selected instead of Bugarura

Selection of the research villages

Sector	Selected Cells	Cell population	Cell Sample Size	Selected Villages	Total population	Sample size per village
Muhima	Amahoro	**451**	10	Amahoro	135	3
				Inyarurembo	83	2
				Ubuzima	233	5
	Kabeza	**590**	14	Hirwa	130	3
				Imanzi	124	3
				Ituze	216	5
				Umwezi	120	3
	Rugenge	**354**	8	Imihigo	152	3
				Rugenge	202	5
	Ubumwe	**342**	8	Isangano	342	8
Ntarama	Cyugaro	**744**	16	Gatoro	201	4
				Kidudu	173	4
				Rubomborana	126	3
				Rugarama	244	5
	Kibugungo	**777**	17	Kagoma I	112	3
				Kiganwa	292	6

				Nyarunazi	186	4
				Rusekera	187	4
Shyorongi	Bugaragara	**756**	16	Gatimba	169	4
				Kiziranyenzi	191	4
				Kigarama	198	4
				Kabazera	198	4
	Kijabagwe	**440**	10	Gaseke	169	4
				Rimwe	93	2
				Rugendabare	178	4
	Rutonde	**775**	17	Rweya	185	4
				Nyamirembe	212	5
				Nyabyondo	201	4
				Rutonde	177	4
Total	Households	5229				
	Sample Size		116			

Annex II Household questionnaire in English

QUESTIONNAIRE ON ACCESSIBILITY TO HEALTH CARE SERVICES

Name of interviewer	
Date of interview	
Number of household questionnaire	
Location	Sector: Cell: Village:
Type of location	☐ Urban ☐ Peri-urban ☐ Rural
Completion of questionnaire	☐ Completed ☐ Partially completed

We would like to invite you to take part in a questionnaire about access to primary health care services in Rwanda. The data collected from the questionnaire will be used for academic purposes in the framework of the completion of a master's program in Sustainable Development and International Development at Utrecht University in the Netherlands.

The aim of the study is to analyze the barriers and constraints for accessing and using health care services in three different areas of Rwanda. The study focuses on the perceptions that households have about different aspects of access to health care services in their area.

Participation, withdrawal and confidentiality

You are being offered the opportunity to take part in the questionnaire because you are a member of a household in one of the randomly selected villages in the research area and your opinion is considered as relevant insight for the objectives and purposes of the research project.

The completion of the questionnaire takes approximately 20 to 30 minutes. Your participation in the questionnaire is entirely *voluntary*. Please note that if you wish to withdraw you are free to do so at any time without giving a reason.

Your responses are treated with a high level of confidentiality. The information obtained will be used for academic purposes at Utrecht University and the National University of Rwanda. Overall, the study will contribute with recommendations for health care service delivery improvements.

Your participation in the questionnaire will be highly appreciated. Thank you for your time and cooperation!

By signing below you agree to take part in this project.

_____   _____
     Name of Participant   Signature

PART A. HOUSEHOLD ROSTER							
1. Name of household member	**2. Sex** 1. M 2. F	**3. Age**	**4. Relation to head of household** 1. Head * 2. Wife/Husband 3. Child 4. Grandchild 5. Father/Mother 6. Sister/Brother 7. Other, specify *If, the head is a female is she a widow? (X)	**5. Highest completed level of education** 1. None 2. Primary 3. Secondary 4. High School 5. Vocational 6. University 7. Other, specify	**6. Current enrolment of children (<18yrs)** 1. No children in the household 2. Yes, all are enrolled 3. Yes, some are enrolled:	**7. Economic activity** 1. Waged agricultural worker 2. Farmer 3. Waged employed 4. Non-farm self employed 5. Unemployed 6. Student 7. Housewife 8. Retired 9. Not capable to work 10. None/ Not active 11. Other	**8. Income level/ year of the household** 1. <10, 000 2. 10,000 - 50, 0000 3. 50,000 - 100, 000 4. 100,000 - 200, 000 5. >200, 000
1.							
2.							
3.							
4.							
5.							
6.							
7.							
8.							
9.							
10.							
Total							

	PART B. HOUSING CONDITIONS (HOUSEHOLD ASSETS, WATER AND SANITATION)SEEKING BEHAVIOR	
9.	**Do you own land?**	1. Yes. Please specify how much approximately: 2. No
10.	**Do you own livestock?**	1. Cattle, Sheep, Pigs, Goats 3. None 4. Other, please specify: 2. Poultry or rabbits
11.	**Tenure status of the house**	1. Owned 3. Other, please specify: 2. Rented
12.	**House construction type**	1. Permanent 3. Temporary/Informal 2. Semi-permanent
13.	**Toilet**	1. Private 3. No toilet (open air) 2. Public (shared) 4. Other, please specify:
14.	**In the toilet mostly used by household members, is there a place for washing hands?**	1. Yes 2. No
15.	**Main water supply of the household**	1. Private pipeline 4. Rain water 2. Public tap/well 5. Other, please specify: 3. River, Lake
16.	**Which assests does the household have?**	1. Radio 5. Bicycle 2. Television 6. Motorbike 3. Mobile Phone 7. Car 4. Refrigerator 8. Mosquito nets
17.	**To which socio-economic class does the household belong to?**	1. Abject poverty 4. Resourceful poor 2. Very poor 5. Food rich 3. Poor 6. Money rich
18.	**Other sources of income, e.g. remittances, wage labor, small-scale business activities?**	1. Yes. Please specify : 2. No
	PART C. USE OF HEALTH CARE SERVICES AND TREATMENT SEEKING BEHAVIOR	
19.	**How would you describe the general health status of the household?**	1. Excellent 2. Very good 3. Good 4. Fair 5. Poor 6. I don't know
20.	**Have you or any of your household members been ill during the last 12 months?**	1. Yes 2. No
21.	**Have you or any of your household members sought health care during the last 12 months?**	1. Yes --> *Please go to question 21* 2. No
22.	**What has been the reason for not seeking health care during the last 12 months?** *Multiple answers are possible* *After this question please go to Part F, question 47 and then Part G, question 82.*	1. Nobody has fallen sick during this period 2. Spontaneous recovery 3. No severe illness 4. It is too expensive and we cannot afford to pay 5. No health facility nearby 6. Poor service quality 7. No transport facility 8. I had to work 9. I heard bad stories about the experiences of relatives or friends 10. I'm afraid of health care facilities 11. No drugs available 12. Other, please specify:
23.	**How many times have you or any of your household members approximately sought medical care during the last 12 months?**	
24.	**Which household members have sought care over the last 12 months?**	1. Mother * 2. Father 3. Child 4. Other * * If a female, was she pregnant?
25.	**What has been the main reason(s) for seeking health care/ visiting a health care center?**	1. Consultation, general check-up 2. Laboratory test 3. Family planning 4. Maternity service 5. Other, please specify:
26.	**What kind of health care facilities have been visited over the last 12 months by you or any of your household members?** *Multiple answers are possible*	1. Health post/ Dispensary/ Health center 2. District hospital 3. Referral hospital 4. Private clinic 5. Pharmacy 6. Traditional healer --> *Please go to question 25 and 26*
27.	**Did the traditional healer provide help for the medical problems?** **What was the reason for going to a traditional healer?**	1. Yes 2. No Reason:
28.	**Have you used traditional medicine for your medical problems?**	1. Yes * 2. No *If yes, did it help? 1. Yes 2. No
29.	**Overall, do you feel informed about the overall health care opportunities that exist in your area?** *Please motivate your answer*	1. Yes 2. No *Motivation:*

	PART D. AVAILABILITY AND ACCESSIBILITY OF HEALTH CARE SERVICES		
	This survey aims to look at the access and use of primary health care services in your area and mainly the use of the primary health care facility that is nearest to your home. If you have not used the nearest health care facility at all over the last 12 months, please give to reason for this in question 30 and then answer the questions thinking of the other primary health care facility that has been used.		
30.	**Have you over the last 12 months used a primary health care facility that is not the nearest one to your home?** *NAME OF HEALTH CARE CENTER:* *(Rural/Urban)*	1. Yes* 2. No * Reason:	
31.	**What is the distance in kilometers to the nearest health care facility from your home?** *NAME OF HEALTH CARE CENTER:*		
32.	**How would you describe the distance to this health care facility?**	1. Very near 2. Near 3. Normal 4. Far 5. Very far	
33.	**How long does it take you to travel from your home to the nearest health care facility?** *(minutes/hours)*		
34.	**How would you describe the travel time needed to travel from your home to the nearest** *A. Primary health care facility* *B. Hospital*	A. 1. Very short 2. Short 3. Normal 4. Long 5. Very long	B. 1. Very short 2. Short 3. Normal 4. Long 5. Very long
35.	**What mode of transport have you used or would you use to travel to the nearest health care facility from your home?**	1. Walk 2. Bicycle 3. Motorbike	4. Bus 5. Car 6. Other:
36.	**At the health care facility, how long do you usually wait to get a consultation?**	1. < 15 minutes 2. 15 - 30 minutes	3. 30 minutes - 1 hour 4. > 1 hour
37.	**How would you generally describe the waiting time needed to get a consultation?**	**BEFORE UBUDEHE** 1. Very short 2. Short 3. Normal 4. Long 5. Very long	**AFTER UBUDEHE** 1. Very short 2. Short 3. Normal 4. Long 5. Very long
38.	**Have you ever left a medical facility without receiving treatment?**	**BEFORE UBUDEHE** 1. Yes* 2. No * Please explain	**AFTER UBUDEHE** 1. Yes* 2. No * Please explain
39.	**In general, do you consider that there has always been enough available medical staff during your visits over the past 12 months?**	1. Yes, always 2. Mostly yes 3. Not sure 4. Sometimes 5. Never	
40.	**Has the health facility visited always had sufficient and necessary drugs available for you?**	1. Yes 2. No. *What did you do to get the drugs?*	
41.	**If you have been obliged to purchase drugs outside the health care facility, how would you describe the cost of purchasing these drugs?**	1. Very affordable 2. Affordable 3. Normal 4. Expensive 5. Very expensive	
	PART E. AFFORDABILITY OF HEALTH CARE SERVICES AND RELATED COSTS		
42.	**How much does it cost you to travel to the nearest health care facility?**	RwF:	
43.	**How can you describe the cost of travel to nearest care facility?**	1. Very affordable 2. Affordable 3. Normal 4. Expensive 5. Very expensive	
44.	**When seeking health care have you ever had to bear any other additional costs (e.g. unofficial charges to the provider?)**	1. Yes* 2. No * What kind of charges?	
45.	**When seeking health care (time spent) have you lost income?**	1. Yes 2. No	
46.	**Does the income of your household enable you to cover for all health care related costs of the household members?**	**BEFORE UBUDEHE** 1. Yes 2. No* * Please explain	**AFTER UBUDEHE** 1. Yes 2. No* * Please explain
47.	**How would you describe the overall costs for using health care services (cost of care, cost of travel and other indirect costs)?**	**BEFORE UBUDEHE** 1. Very affordable 2. Affordable 3. Normal 4. Expensive 5. Very expensive	**AFTER UBUDEHE** 1. Very affordable 2. Affordable 3. Normal 4. Expensive 5. Very expensive

PART F. MEDICAL COVERAGE AND MUTUELLE DE SANTÉ SYSTEM		
48.	Do you or any of your household members currently have medical coverage?	1. Yes, all. 2. Yes, but only some. 3. Nobody --> *Please go to section F2, question 67*
49.	What kind of coverage do household members have? Please specify for each household member in the table below.	

Coverage/ Person	1	2	3	4	5	6	7	8	9	10
RAMA										
Mutuelle de santé										
Private Insurance										
Other, specify										
None										

F1. Questions about the Mutuelle de Santé system		
50.	Did you use the Mutuelle de Santé before the Ubudehe classification?	1. Yes 2. No
51.	If you have used the Mutuelle de Santé BEFORE Ubudehe but NOT now, what are the main reasons?	1. I cannot afford it 2. I do not need it 3. Misclassification 4. Poor quality of services 5. Other, please specify:
52.	If you have NOT used the Mutuelle de Santé BEFORE Ubudehe but do use it now, what are the main reasons?	1. I don't pay for it 2. Behavioral change 3. I need it 4. Raised awareness 5. Other, please specify:
53.	How are you insured at the moment?	1. Per person 2. Per family
54.	How much does the membership cost?	1. Amount per person/year or per family/year: RwF 2. Nothing. *Who pays the fee?*
55.	Do you consider the total annual fee to be reasonable?	1. Yes 2. No. *Please explain*
56.	Do you consider the co-payment to be reasonable?	1. Yes 2. No. *Please explain*
57.	For how long have you been insured? *(months/years)*	
58.	Were there years that you did not have insurance?	1. Yes* 2. No * Reason:
59.	Which factors affect your decision to get health insurance?	
60.	Is your community involved in the contract set up with the health center?	1. Yes 2. No
61.	Are you satisfied with your current insurance?	1. Yes 2. No. *Please explain*
62.	In your opinion, what are the disadvantages of the 'Mutuelle' system *in general*?	
63.	Do you have any ideas for improvement of the 'Mutuelle' system in general?	
64.	Do you have any ideas for improvement for *your* current 'Mutuelle' system?	
65.	Are you satisfied with the new policy of Ibibina in the Mutuelle de santé?	1. Yes 2. No. *Please explain*
66.	Are there the advantages to be insured with the Mutuelle de Santé using Ibibina? *Please motivate your answer*	1. Yes 2. No *Motivation:*

	F2. If NOT a member of a mutuelle de santé system or no other medical coverage		
67.	What is the main reason for not being a member of the Mutuelle de Santé' or other medical coverage? *Multiple answers possible*	1. Financial: Annual fee / Co-payment fee/ Both* 2. Quality 3. Lack of trust 4. Lack of knowledge 5. Ignorance 6. Distance to health center 7. Social 8. There is no Mutuelle in my area 9. Other, please specify:	
68.	* If the reason is financial, is there an option to get fees waived (concerns the 'mutuelle' system)	1. Yes * 2. No 3. I don't know * Please explain how does the process work	
	PART G. PERCEPTIONS ON QUALITY OF CARE, FACILITIES AND ORGANISATION OF CARE		
69.	Do you think that the opening hours of the health care facility are convenient for you?	**BEFORE UBUDEHE** 1. Yes 2. No* * *Please explain*	**AFTER UBUDEHE** 1. Yes 2. No* * *Please explain*
70.	In your opinion, has there been any improvement in the opening hours of your nearest health care facility?		
71.	Do you feel comfortable asking questions during a consultation?	**BEFORE UBUDEHE** 1. Yes 2. No* * *Please explain*	**AFTER UBUDEHE** 1. Yes 2. No* * *Please explain*
72.	Do you feel the medical staff listens to your concerns and has taken you seriously during consultation(s)?	**BEFORE UBUDEHE** 1. Yes 2. No* * *Please explain*	**AFTER UBUDEHE** 1. Yes 2. No* * *Please explain*
73.	Have you ever had difficulties understanding what the healthcare professional was telling you?	1. Yes 2. No. *Please explain*	
74.	Do you feel that you can trust the medical staff?	**BEFORE UBUDEHE** 1. Yes 2. No	**AFTER UBUDEHE** 1. Yes 2. No
75.	If there have been any changes, what are the main reasons?		
76.	Has the medical staff ever been rude to you during a consultation?	**BEFORE UBUDEHE** 1. Yes * 2. No * *Please explain*	**AFTER UBUDEHE** 1. Yes * 2. No * *Please explain*
77.	Have you ever requested to get a consultation from a medical staff member of the same sex as you?	1. Yes. *Was it possible?* Yes/No 2. No	
78.	When choosing the primary health care facility, are there any cultural, religious or gender related matters that affect your choice?	1. Yes 2. No. *Please give an example*	

79.	Thinking about the use of health care services over the last 12 months, what is your overall level of satisfaction with the following aspects and characteristics of the use of and access to health care?					
		Very satisfied	Satisfied	Neither satisfied nor dissatisfied	Dissatisfied	Very Dissatisfied
a.	Distance to health care facility					
b.	Travel time to health care facility					
c.	Opening hours of health care facility					
d.	Waiting time at health care facility					
e.	Cost of health care services					
f.	Cost of drugs					
g.	Availability of drugs					
h.	Number of health care staff					
i.	Helpfulness of medical staff					
j.	Cleanliness of health care facility					
k.	The overall quality of health care services received					

80.	In your opinion, has your nearest health care facility improved their services after the Ubudehe classification?		
		1. Yes	2. No
a.	Increased number of health care staff		
b.	Improved opening hours		
c.	Cleanliness of health care facility		
d.	Reduced waiting time to get a consultation		
e.	Helpfulness of medical staff		
f.	Overall quality of health care services received		

81.	In case of illness/ need for medical advice, how important are the following factors for your treatment seeking behavior and your use of health care services?					
		Not at all	A little	Neutral	Important	Very important
a.	Cost of health care					
b.	Cost of transport					
c.	Travel distance					
d.	Quality of treatment provided					
e.	Helpfulness of health care staff					
f.	No trust in health care staff					
g.	I have had bad experiences					
h.	I have heard bad experiences from relatives or friends					
i.	Severity of symptoms					
j.	If it is a child that needs care					
k.	If somebody else pays my health care costs					
l.	Cleanliness of health care facility					
m.	Lack of knowledge					
n.	Afraid of using health care services					

Please specify if there are other factors affecting your decision to seek health care and visit a health care facility?

82.	If applicable, how has illness or other medical problems/ a poor health status of a household member affected your life (e.g. not capable to work, lost income, etc.)?
	83.

83.	What are the main factors that influence the change in the access to the health care services delivery?

84.	Do you have any recommendations to the health care providers?

85.	Do you have any additional comments in regard of your use and access to health care services?

Thank you for having taken part in this questionnaire and for your cooperation. Your participation is very appreciated!

In case we have any additional questions would you be willing to take part in a semi-structured interview?
Yes/No
Contact information:

Annex III Interviews Key Informants

Name	Position	Notes	Status
Leon Mutesa	Head of Medical Research Center Division, Rwanda Biomedical Center	Done	🟩
Andrew Makaka	Director of the Health Financing Unit, Ministry of Health	Met, gave permission to speak to 2nd person in line.	🟩
Catherine Mugeni	Coordinator of the Community Health Desk, Ministry of Health	Sick, did interview with 2nd person in line.	🟩
Emery Hezagira	Officer in charge of Community Health Desk, Ministry of Health	Done	🟩
Denyse Ingeri	Mutuelle de Santé supervisor, Health Financing Unit, Ministry of Health	Done	🟩
Pascal Birindabagabo	Health insurance policy expert, Health Financing Unit, Ministry of Health	Done	🟩
Sabine Musange	Public Health researcher, School of Public Health	Done	🟩
Martin	Director of Health Insurance, Bugesera District	Done	🟩
Shema	2nd person Health Financing Unit, Ministry of Health	Not necessary anymore	🟩
Kibibi	CBHI, Health insurance department	Not necessary anymore	🟩
Renate Hartwig	Researcher , International Institute of Social Studies, Erasmus University Rotterdam	Skype interview done	🟩
Laurant Musango	School of Public Health	New position in World Health Organization	⬛
Hertilan Inyarubuga	School of Public Health	New position in Bill en Melinda Gates foundation	⬛
Paulin Basinga	School of Public Health	New position in USA	⬛
Jean Kagubare Mayindo	School of Public Health	New position in USA	⬛
Claude Sekabaraga	Director of Policy and Planning, Ministry of Health	New position in Kenya	⬛
Christian Habineza	Health, Development and Performance (NGO)	?	🟥
Etienne Sekoganda	Health, Development and Performance (NGO)	?	🟥
Jean Baptiste Habagihirwa	Health, Development and Performance (NGO)	?	🟥
Jean Damascene Butera	International Health Consultant	?	🟥
Contact from Murad	Retired, former director at Ministry of Health	Send email to Murad, never got a response.	🟥
Francois Serugendo	Director of Health Insurance, Rulindo District	Was not in the country when I was in Rwanda.	🟥
Simba	Director of Health Insurance, Nyarugenge District	Made appointment but with no confirmation about where to meet. After that, no response.	🟥