



*College of Medicine and Health Sciences
School of Public Health*

**Perception of Community Health Workers on their
Cooperative's impact on the community Health Care
Activities. Case of Cooperatives in BUGESERA and
KICUKIRO Districts**

**A Dissertation submitted in partial fulfillments of the requirements for the Award of
Master of Science in Public Health (MPH) at University of Rwanda, College of
Medicine and Health Sciences / School of Public Health. (UR/CMHS-SPH)**

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Kigali, December 2014

ABSTRACT

Background: Community health workers (CHWs) play important roles in primary health care delivery, particularly in settings of health workforce shortages. However, little is known about CHWs' perceptions of difficult or motivation that should be generated by their income generating activities implemented under CHW's Cooperatives. Actually, our country Rwanda, faces a significant gap in human resources for health, the Ministry of Health expanded its community health programme beginning in 2007, eventually placing 3 trained CHWs in every village in the country by 2009. The aim of this study was to find out from the CHWs' perspective, the impact their cooperatives have on the services they render to the community; we really want to know if CHW's Cooperative is a motivator and a builder or if it is a distraction and a destroyer factor.

Method: This study was qualitative, a case study design in nature capturing opinions and perceptions of the community health workers. The data was collected using focus group discussions (FGDs) with CHWs from BUGESERA and KICUKIRO districts with two sectors each district; one identified as a rural area and other qualified as urban one. Those sectors were selected conveniently making a total sample of four sectors in the sample (**Nyamata** and **Juru** from Bugesera district, **Gikondo** and **Kanombe** sectors in Kicukiro district). From the four sectors, the researcher selected respondents to participate in four focus group discussions two from each district with eight members each group making the final total number of respondents equal to 32 persons (18 female and 14 male). All participants have been informed about the study and accepted to participate. Data was recorded using a digital voice recorder and expanded at the end of each day during its transcription in Kinyarwanda. The thematic content analysis based to different dimensions of our study.

Results: the community health workers find no issues in the management of their cooperatives. The trust they hold in the leadership, local authorities and the ministry of health is actually the basis of this perspective. It is critically important to note that sustainability of cooperatives of community health workers greatly depends on the commitment and continued follow up of local leadership and the ministry of health.

RESUME

Context: Les travailleurs de santé communautaire jouent un grand rôle dans la prestation des soins de santé primaires, particulièrement en apportant une solution liée à la pénurie du personnel de santé. Cependant, beaucoup de gens disposent peu d'information relative à la perception propre des TSC sur l'impact, que pourraient générer les activités génératrices de revenus initiés par leurs coopératives. Notre pays, le Rwanda, est confronté à un problème significatif de manque du personnel suffisant dans le domaine de la santé; depuis 2007, le Ministère de la santé a mis l'accent sur les programmes de la santé communautaire, et en 2009, il avait parvenu à placer 4 TSCs bien formés dans chaque village du pays.

L'objectif de cette étude était de dégager, par l'opinion des TSCs eux même, l'impact de leurs coopératives sur les services qu'ils sont supposés de rendre à la communauté.

Méthodologie: Notre recherche était qualitative avec étude de cas, sur sondage d'opinion . Les données ont été collectées à l'aide des groupes de discussions avec les travailleurs de la santé communautaire des districts BUGESERA et KICUKIRO venant de deux secteurs pour chaque district. Ces quatre secteurs ont été sélectionnés par l'échantillonnage de commodité, deux à caractère rural (Juru et Busanza - Kanombe), et les autres qualifiés urbains (Nyamata et Gikondo), par N.I.S.R. Dans ces quatre secteurs correspondant avec quatre coopératives des TSCs, le chercheur a sélectionnés des répondants à participer dans les différents groupes de discussions de huit personnes pour chaque coopérative, totalisant ainsi 32 personnes (18 femmes et 14 Hommes). Tous les participants ont été informés sur cette étude et ont été acceptés d'y participer. Les données ont été collectées à travers les groupes de discussions et enregistrées par un enregistreur audio et après nous avons procédé avec la transcription en Kinyarwanda. Nous avons fait une analyse thématique de contenu des résultats de la recherché.

Résultats: Notre recherche a montré que le temps que les volontaires de santé communautaire dispensent aux services de santé dans la communauté, n'est jamais été dérangé par la participation aux activités génératrices de revenus de leurs coopératives. Ceci enlève la suppositions qu'on avait avant qui disait que, quand il y a croissance économique des coopératives des volontaires se santé communautaire, la demande de participer aux activités de business pourrait paralyser le temps qui était destiné aux activités de santé communautaire.

ACKNOWLEDGEMENT

I would like to express my gratitude to the Almighty God. My MPH studies and this thesis have involved various people with them; this work would not have been accomplished.

I am indebted of gratitude to the KICUKIRO and BUGESERA Districts which allowed me to access Community Health Worker's cooperatives and then conduct my research. The INDATWA ZA GIKONDO, ABAHUKINKINDI BA BUSANZA, ABAKORERABUSHAKE BA NYAMATA AND TURENGERE UBUZIMA –GIHINGA YA JURU provided to me opportunity to collect all information I needed, their contributions are gratefully acknowledged.

I owe a debt gratitude to all interviewers who participated in this study for sharing their perceptions, ideas and insights to this study.

My profound gratitude go to my supervisor Dr Laetitia NYIRAZINYOYE and Co- supervisor Dr Vedaste NDAHINDWA for their constructive guidance, comments, suggestions and encouragement during the entire duration of this work.

I am really indebted to all lectures, staff and my class mates of UR/CMHS-SPH whose Kind assistance has greatly changed me for good.

I must also thank my family for their encouragement and moral support; they have really made my leaning process the pleasant one.

Canut DUFITUMUKIZA

DEDICATION

This thesis is dedicated to my Wife and Children

ABBREVIATIONS AND ACRONYMS

- **CHWS** : Community Health Workers
- **CMHS** : College of Medicine and Health Sciences
- **DHS** : Demography Health Survey
- **DOTs** : Directly Observed Treatment, short
- **FDGS** : Focus Discussion Groups
- **HMIS** : Health Management Information System
- **MoH** : Ministry of Health
- **MPH** : Master's in Public Health
- **NISR** : National Institute of Statistics of Rwanda
- **PBF** : Performance Based Financing
- **PMTCT** : Prevention of Mother-to-Child Transmission
- **SPH** : School of Public Health
- **TB** : Tuberculosis
- **UR** : University of Rwanda
- **VCT** : Voluntary Counseling and Testing
- **WHO** : World Health Organization

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OPERATIONAL DEFINITIONS

Community Health Workers: Community Health Workers (CHWs) are members of a community who are chosen by community members or organizations to provide basic medical care to their community. Other names for this type of health care provider includes health and village health worker, community health aide, community health promoter, and lay health advisor.

Community Health Care: Community health care is prevention, treatment, and management of illness and the preservation of mental and physical well-being through the services offered by the medical and allied health professions.

Cooperatives: A firm owned, controlled, and operated by a group of users for their own benefit. Each member contributes equity capital, and shares in the control of the firm on the basis of one-member, one-vote principle (and not in proportion to his or her equity contribution).

1. INTRODUCTION

1.1 Back ground

Timely use of health services remains a challenge to many countries especially in the developing world. In Rwanda's case, the reality of having very hilly terrain and a road network system which is still developing accompanied by low numbers of physicians pose a potential challenge to communities' utilization of primary health care services. Among other things, the Rwanda health system uses Community Health Workers (CHWs) to advance health care. Community health workers are members of the community that are trained and empowered to address health-related issues in their respective communities i.e. they are volunteers in the community who in addition to their daily life engage in services that improve the health status of the community. Effective work of community health workers, with the support they get from Performance Based Financing (PBF), is very important in the realization of Ministry of Health (MoH) key indicators on; Nutrition, timely prenatal care utilization, institutional delivery, timely postnatal care utilization, and modern contraceptive use. The indicators tracked by the MoH through the work of CHWs are:

- ✓ Nutrition Monitoring: % of children monitored for nutritional status
- ✓ ANC : Women accompanied/referred to Health Center for prenatal care within first 4 months of pregnancy
- ✓ Deliveries: Women accompanied/referred to HC for assisted deliveries
- ✓ Family Planning: new users referred by CHWs for modern family planning methods
- ✓ Family Planning: % of regular users using long term methods (IUD, Norplant, Surgical/NSV contraception)
- ✓ Number of TB suspects referred to the health center by the CHW's
- ✓ Number of TB patients receiving DOTS at home
- ✓ Number of couples referred to a health center for PMTCT
- ✓ Number of households referred to a health center for VCT
- ✓ CHW's Reports

The system of health in Rwanda is administratively subdivided into 4 provinces and the city of Kigali, 30 districts, 416 sectors, 2148 cells and 14837 villages. Health services are organized in consideration of the administrative organization. The country counts on national referral hospitals, provincial hospitals, districts hospitals, health centers at sector level and health posts at cell level. At community level, the work of CHWs is very pertinent given the limited number of health centers at village level. Nearly 45,000 community health workers are trained in health promotion as well as providing basic diagnosis and treatment before patients can access services from a professional physician. They are evenly distributed in all Rwanda's villages.

Each village (100 to 200 households) elects three volunteers to act as CHWs for the general population – a binome comprising of a man and a women for general diseases and a woman as assistant maternal to follow antenatal care, women after delivery and health of children below 9 months. Once elected the CHWs are trained by the Ministry of Health throughout the country to deliver quality of services and to monitor health at village level and to refer sick patients to the nearest health facility. By sensitizing the local village and making themselves available, they improve access to care. Because each community votes on two women to serve the village as CHWs, becoming a CHW is now a position of respect, raising gender equity throughout Rwanda. When we assess the work done in society, we confirm without doubts that Community health workers reinforce the six building blocks of WHO. Let us go through them one by one, and see how they try to make a significant contribution to their success.

The first one: Good health services - As they are trained and supervised by health professional at sector level, Community health workers are supposed to deliver good health services to the population of their catchment area.

The second one: A well-performing health workforce – The 3 CHWs per village (45000 in the country) a considerable workforce and definitely increase service delivery.

The third one: A well-functioning health information system – The report provided by the community health workers are coming from the ground up to national level. All their activities are included in the health reporting system through reports that they give to the Executives Secretary of each Sector, who in turn reports activities to the Director of Health at the District level. These reports are sent to the Ministry of health under the responsibility of Mayors.

The fourth one: Equitable access to essential medical products, vaccines and technologies – CHWs diagnose and treat malaria, diarrhea pneumonia, they give family planning drugs, they facilitate outreach for vaccination, and sensitize for HIV testing.

The fifth one: A good health financing system- As these volunteers are compensated only by creating cooperatives in their sector receiving money for services they provide to their village, they generate community economic growth through health activities.

The last one: Leadership and governance – As elected by people, they are absolutely role models.

1.2 Significance of the study

The coverage and use of community primary health care services is of critical importance for a healthy community. According to the results of the DHS 2010 and HMIS 2011, the doctor Population ratio is at 1:17,240 and the nurse population ratio is 1:1,294 while midwives population ratio is 1: 66,749. With such divergent ratios, and given the literacy levels that are still very low in the country, the role of CHWs is indispensable especially in very remote settings where health care services are scarce. It is very evident that services provided by Community Health Workers are saving lives and making a remarkable impact on the health of the community. However, the introduction of cooperatives as an income source for CHWs can be a threat to the time dedicated by CHWs for community service. As the cooperatives grow both financially and in scope of operation, there is a possibility that they become more demanding in terms of management and daily business operations which might pose a risk of creating conflict of interest to the community health workers and the time they dedicate to community health care services will be at stake. They might cause also conflicts among the community health workers themselves or their leadership in cases of funds mismanagement. The cooperatives could be seen in another positive angle also as a source of motivation to the community health workers and a facilitation to keep their families well and developing not just preaching the message to other members of the community while their own households are still unhealthy and in lack. This study seeks to find out from the CHWs' perspective, the impact their cooperatives have on the services they render to the community; is it a motivator and a builder or is it a distraction and a destroyer?

1.3 Objectives

1.3.1 General Objective

The study seeks to identify the perception of Community Health Workers on their Cooperative's impact on the community health care activities. It seeks to find out whether or not the cooperatives are helping the CHWs meet their targets.

1.3.2 Specific objectives

Specifically, the study pursues the following objectives:

- a) To identify if any, the challenges or success met by community health care activities subsequent the growing of CHW's cooperatives
- b) To explore the time dedication to the cooperatives and the sharing of dividends among CHWs;
- c) To identify the daily management of the cooperatives' activities and the time they require from members (CHWs);

1.4 Research question

In order to meet its objectives, the study was designed to answer the following questions relating to the role of CHWs' cooperatives vis-à-vis sustainability to community use of primary health care services

- Are the CHWs' cooperatives contributing positively or negatively to the performance of the CHWs in sustainability of their services to the community?

1.5 Policy implication

Today, the performance-based funding model is used in many countries by a number of development organizations and initiatives (including the GAVI Alliance, the Millennium

Challenge Account and the European Commission) as a way to ensure the accountability, efficiency and effectiveness of programs being funded. The ministry of Health of Rwanda and its Development Partners adopted the same mechanism as a method to counteract some of the negative effects of the obligatory pre-payment schemes on provider behavior, and as a way to motivate the underpaid health workforce in the Rwandan Health system. Performance based financing, or ‘pay-4-performance’ or ‘output based aid’ as it is generally referred to, consists of a family of various methods and approaches that all aim, through differing levels of intervention, at linking incentives to performance. It is through the same model of funding that the work of CHWs in Rwanda is remunerated. Part of the PBF for community health workers is allocated into income generating activities (cooperatives). Given the importance of the work of community health workers, it is very important to know exactly what is (motivating) or supporting them especially in terms of remuneration considering sustainability of their activities. The CHWs have to be exemplary in the community, this requires an income. It is very important to know especially from the Community Health Workers themselves, the contribution of these cooperatives in relation to the services demand of the community.

1.6 Limitations of the study

The study faces about two challenges which are;

i) Limited resources,

The study has covered a small sample of cooperatives and embarked on only one method (FGDs) making it non-representative and the conclusions drawn herein will only show the general image about the CHWs’ view of their cooperatives.

ii) Time constraint

This study was only qualitative and did not include quantitative measures but from the FGDs, the findings of the study raise several other assumptions one of those being that the condition of health indicators in an area is influenced positively by the previous performance and the CHWs’ satisfaction of the previous quarter’s remuneration. This is something that would need to be tested quantitatively which would confirm the fact that as the performance of the CHW is rewarded, their motivation, confidence in what they are doing as well as dedication gets higher

and these in turn set in motion a chain of progressively improving performance of the following quarters.

2. LITERATURE REVIEW

Historically, it is unclear where the usage of community health workers began, although China and Bangladesh have been cited as possible origins. Melinda Gates, co-founder of the Bill & Melinda Gates Foundation, said the nongovernmental organization BRAC in Bangladesh "pioneered the community health worker model."^[51] Catherine Lovell writes that BRAC's decision to train locally recruited paramedics was "based on the Chinese barefoot doctor model then becoming known worldwide."

Scientific medicine has evolved slowly over the last few millennia and very rapidly over the last 150 years or so. As the evidence mounted of its effectiveness, belief and trust in the traditional ways waned. The rise of university based medical schools, the increased numbers of trained physicians, the professional organizations they created, and the income and attendant political power they generated resulted in license regulations. Such regulations were effective in improving the quality of medical care but also resulted in a reduced supply of clinical care providers. This further increased the fees doctors could charge and encouraged them to concentrate in larger towns and cities where the population was denser, hospitals were more available, and professional and social relationships more convenient.

In the 1940s Chairman Mao Tse Tung in China faced these problems. His anger at the "urban elite" medical profession over the maldistribution of medical services resulted in the creation of "Barefoot doctors". Hundreds of thousands of rural peasants, chosen by their colleagues, were given rudimentary training and assigned medical and sanitation duties in addition to the collective labor they owed the commune. By 1977 there were over 1.7 million barefoot doctors.^[61] As professionally trained doctors and nurses became more available, the program was abolished in 1981 with the end of agricultural communes. Many Barefoot Doctors passed an examination and went to medical school. Many became health aides and some were relieved of duty.

Brazil undertook a medical plan named the Family Health Program in the 1990s that made use of large numbers of community health agents. Between 1990 and 2002 the infant mortality rate dropped from about 50 per 1000 live births to 29.2.^[7] During that period the Family Health Program increased its coverage of the population from 0 to 36%. The largest impact appeared to be a reduction of deaths from diarrhea. Though the program utilized teams of physicians, nurses and CHWs, it could not have covered the population it did without the CHW. Additionally there is evidence in Brazil that the shorter period of training does not reduce the quality of care. In one study workers with a shorter length of training complied with child treatment guidelines 84% of the time whereas those with longer training had 58% compliance.^[8]

Iran utilizes large numbers of para-professionals called *behvarz*. These workers are from the community and are based in 14,000 "health houses" nationwide. They visit the homes of the underserved providing vaccinations and monitoring child growth. Between 1984 and 2000 Iran was able to cut its infant mortality in half and raise immunization rates from 20 to 95%. The family planning program in Iran is considered highly successful. Fertility has dropped from 5.6 lifetime children per woman in 1985 to 2 in 2000. Though there are many elements to the program (including classes for those who marry and the ending of tax incentives for large families), *behvarz* are extensively involved in providing birth control advice and methods. The proportion of rural women on contraceptives in 2000 was 67%. The program resulted in profound improvement in maternal mortality going from 140 per 100,000 in 1985 to 37 in 1996.^[9]

In Pakistan, the 100,000 Lady Health Workers, similar to CHWs, each receive 3 months of initial training, and 1 year of supervised fieldwork [19]. Implementing a similar system in Rwanda could address these training concerns. In India, a 12 to 18-month distance-learning course for government and civilian health professionals, the Public Health Resource Network, aims to build health capacity throughout the country. A similar system in Rwanda, that broadly and comprehensively builds capacity for health professionals throughout the country via distance-learning, could be an effective addition to the ongoing capacity-building programmes [20]. A basic preservice training course that provides a minimum set of knowledge and competencies for new recruits would harmonize entry-level CHW knowledge. All CHWs would also benefit from

basic and refresher trainings in a wide range of topics, including basic nutrition, feeding practices for infants and young children, management of moderate and severe undernutrition, nutritional assessment, programme management, and monitoring and evaluation.

Additionally, two models that have a professionalized approach for community health workers include the Community Health Agents (CHAs) in Tanzania, and the Health Extension Workers (HEW) in Ethiopia. In Tanzania, the CHAs are formally remunerated, receive 9 months of preservice training, and dually report to health facility staff and village governments [21]. HEWs in Ethiopia receive 1 year of training, are also remunerated by the government, and report to nurses or environmental health professionals at nearby health centers [22].

Currently, these formalized CHW systems provide unique models that may have components, such as formalized training and remuneration, worth investigating in Rwanda. Principles behind Rwanda's cPBF system, which was only recently implemented at the time of the study, were not well understood by CHWs. The lack of transparency of the process, and confusion around who should receive payments was noted throughout the FGDs. Since this study, additional efforts have been made to strengthen CHW cooperative financial management and understanding of the programme. In 2014, there were 640 CHW cooperatives which primarily delivery health services and generate income through various farm- and food-related activities. Of the net profit collected by these cooperatives, 50% is managed in a fund at the MoH, and is used for CHW trainings and tools, and additional CHW remuneration. To ensure that these cooperatives are managed appropriately, all cooperatives will be required to hire managers by the end of 2015, and a reporting system called the Community Health Workers Financial Tool will be rolled out in 2015 [23]. Further strengthening of the cPBF system, with cooperatives, managers, and advanced tools, will serve to alley some of the anxieties around cPBF support to the CHWs that we identified in this study.

While these improvements have helped to institutionalize cPBF-supported CHW cooperatives, other studies have found higher CHW attrition rates in community financing programmes than in salaried programmes [24,25]. The long-term sustainability of the Rwandan volunteer programme

may prove challenging unless continuous improvements to the cPBF programme are made, and transitioning to an output-based salaried system is being considered with the establishment of well-functioning cPBF at health posts.

Since this study was conducted in 2011, the CHW system has been significantly reorganized and strengthened. In 2012, the MoH and the Ministry of Local Government removed the CHWs in charge of social affairs (CHSA). Each village now has a pair of CHWs (*binomes*) and one ASM who manage maternal and newborn health. In addition to the strengthening of the cPBF system as mentioned above, comprehensive trainings, focusing on capacity building, have also been conducted for all CHWs throughout the country [23].

In 2014, a qualitative assessment of client and provider perspectives on Rwanda's evolving community health worker system has been conducted by a large group of researchers and the Corresponding author was Dr Jeanine Condo.

CHWs interviewed in that study expressed a sincere desire to perform well, particularly because they felt valued by their colleagues and their communities, and perceived themselves as key assets to directly improving their communities' health. While motivated primarily by community recognition and respect, opportunity costs impeded their ability to effectively deliver services, as CHWs performed their duties in addition to income-generating activities.

According to that study, the effectiveness of the Rwanda CHW system was hampered by an irregular system of supervision and trainings. At the individual CHW level, there were varying degrees of capacity noted, and many CHWs did not have an educational background in health prior to delivery of health services. On-the-job trainings were done sporadically, and did not necessarily address specific skills gaps or effectively target the three types of CHWs (ASM, CHSA, *binomes*) at the time of the interviews. The need for standardized, comprehensive training systems was noted across all categories of CHWs, as well as the desire for trainings in self-confidence and communication skills in order to appropriately disseminate information

In wrapping up this literature review, I would like to mention that different Authors have shown the key role played by CHWs in health sector, and their continuous need of capacity building in order to be able to deliver services efficiently and effectively. Both comprehensive and targeted trainings have been recommended to fill gaps in knowledge, and must be in conjunction with sufficient follow-up and refresher courses. Those trainings based on needs assessments, with proper monitoring, evaluation and supervision, would play the role of maintaining and increasing the capacities of the CHWs and scaling-up the CHW system. Despite these challenges and clear areas in need of improvement, the CHW system is evolving, and many CHWs in Rwanda are providing vital and necessary services to their communities. These CHWs are first motivated by their community recognition and respect, and secondary by the PBF considered as a remuneration of their work. A part of this money is taken to home by everyone, CHW (30%) and another part (70%), is remaining to the cooperative and allocated to fund an income generating activity. Our study will contribute to know especially from the Community Health Workers themselves, the impact, either positive or negative, of these cooperatives in relation to the services demand of the community.

3. RESEARCH DESIGN AND METHODOLOGY

This chapter describes the methodology that was used by the researcher in order to attain the purpose of this study which is to assess the CHWs perspective on their cooperatives in relation to service delivery to the community.

3.1. Research Design

This study is case study design in nature capturing opinions and perceptions of the community health workers. The data was collected using focus group discussions (FGDs) with CHWs from BUGESERA and KICUKIRO districts with two sectors each district; one identified as a rural area and other qualified as urban one.

3.1.1 Study Population

The two districts, Bugesera and Kicukiro are made up of 15 and 10 sectors respectively making a total number of 25 sectors. Each sector has one cooperative of CHWs hence 25 cooperatives in all which make up the population of interest for this study.

3.1.2. Sampling for the study

The study assumed a Convenience Sampling taking four sectors out of 25, two sectors from each district and then conducting four focus group discussions with eight participants in each group hence 32 participants in all.

3.1.3. Determination of the sample size

The population of interest which are the community health workers in BUGESERA and Kicukiro districts are distributed in 25 cooperatives; one per sector as shown in table1 below.

3.1.4. Sampling Procedure

A convenience sample was conducted. We used this method of drawing representative data by selecting people because of their volunteerism and their availability. The researcher in his daily activities, has been working with these two districts, especially four sectors sampled, in health

promotion. He participated in initiation of CHW's cooperatives and actually wants to survey their contributions or impact to the success of CHW's mission.

Therefore, two sectors were selected from each district making it a total sample of four sectors in the sample (**Nyamata** and **Juru** from Bugesera district, **Gikondo** and **Kanombe** sectors in Kicukiro district). From the four sectors, the researcher conveniently selected respondents to participate in four focus group discussions two from each district with eight members each group making the final total number of respondents equal to 32 persons (18 female and 14 male).

3.2. Data Collection

3.2.1. Research Instruments

The study used an interview guide to collect data from respondents in the sampled cooperatives across the district. The interview guide focused on three themes:

Theme1: Is regarding time dedicated to the community health worker's income generating activities,

Theme II: Is related to the issues concerning management their cooperatives

Theme III: Is concerning the nature of community health worker's cooperatives.

The tool was designed in English for academic purposes but since the target population is in the rural area where most probably the native language is the efficient medium of communication, the questions were translated and discussions administered in Kinyarwanda.

3.2.2. Validity and Reliability of the tools

The interview guide for this study was designed in a way that minimizes non-response possibilities by avoiding personal questions. The questions are stated in a chronological order descending from the general down to specifics which minimizes the respondents' suspicion and anxiety to the information they are asked to provide. The questions were designed to probe an open discussion that produces the opinion of CHWs on their cooperatives.

3.2.3. Administration of the discussions

The discussions were administered with orientation from the researcher but giving enough room to the participants to lead the main part of the discussion. At each discussion session, the group elected one member to lead the discussions and the researcher took notes from the discussions.

3.2.4. Inclusion criteria

In order to be recruited in the study, respondents must meet the following criteria:

1. Be a known member of the sampled CHW cooperatives
2. Providing consent (deliberate will) to participate in the study
3. Be sober at the time of the study (not under influence of any substance)

3.2.5. Exclusion criteria

All CHWs that don't meet all the above inclusion criteria will be excluded from this study.

3.2.6. Data Collection and Procedure

The researcher facilitated all the eight focus group discussions with members from the sampled cooperatives in the two districts. Discussions days were scheduled in consideration of the CHWs' other businesses and the planning was participatory. The discussions were held during work hours and the time for each individual cooperative was scheduled before visiting to ensure their availability and convenient timing

3.2.7. Data Analysis

Data analysis in qualitative research has a two-fold purpose: (a) to understand the participants' perspectives and (b) to answer the research question. Marshall and Rossman (1999) defined qualitative analysis in terms of organizing and attributing meaning to the data. To accomplish these tasks, the researcher will follow a three-phase procedure described by Miles and Huberman (1994) which includes: (a) data reduction, (b) data display, and (c) conclusion drawing and verification. A qualitative data analysis tool (Atlas. ti) has been used to code, clean and organize raw data from focus group discussions to derive meaningful information on the perspective of community health workers. The survey results will be presented in tables, graphs and meaningful quotes comprehensively and explicitly depicting the point of view of CHWs on their cooperatives.

3.2.8. Ethical Consideration

The letter from ethical committee at the University of Rwanda School of Public Health (UR-SPH) permitting the researcher to carry out the study was submitted to the office of the Mayors of Bugesera and Kicukuro Districts and a copy kept by the researcher prior to data collection. The permission has been presented to the executive secretaries of concerned sectors; purpose and interest of the study was explained to them. The participation in the study was voluntary and confidentiality of the information is guaranteed confirmed by the signing of consent form binding both the researcher and the respondent to respect of the ethics of research.

4. RESULTS

Thirty two community health workers, and all participants sampled for this study were able to avail themselves (at 100% response rate) and fully participated in the FGDs as planned.

Three areas were identified as key constituents to the success of community health worker's cooperatives which impact on the community Health Care Activities, these including 1. *Time spent in cooperative's income generating activities*, 2. *Management of the cooperatives of community health workers*, 3. *And the nature of community health worker's cooperatives*.

4.1 Time spent in cooperative's income generating activities

Respondents confirmed that the time dedicated to community health care services is not affected at all by the cooperative's income generating activities. Almost all participants mentioned that, the time they dedicated to community health care services before the introduction of cooperatives and the PBF remuneration has remained intact. Participants confirmed that, they have fixed time and days they use to tour around the village visiting especially households that have special need for care e.g. pregnant and lactating mothers, homes with children under five, and homes that have sick people.

Besides the two days per week dedicated to the village tour, the CHWs are always alert to respond to any call when any health issue comes up. As narrated one of the respondents "*I have set apart Thursday and Saturday as my village tour days each week. I always emphasize on visiting the homes of people with HIV, pregnant and lactating mothers to ensure that they are practicing good health behaviors that protect them and the young ones. I have been doing this*

ever since I started working in community volunteering and my schedule has never changed. Every time when something serious arises during my other days, I am always ready to respond to the call either from the local authorities or even sometimes from the patient's household themselves. I think there is no way we can relate the time we spend on community health services to the demand of the cooperatives. We are trust the committee of our cooperative and the staffs who help technically the cooperative to run as well, they are very well organized and the sector leadership helps us in making sure everything is under control. This gives us time to do our duties in the community and we feel motivated that in the backstage our business is earning us money too."

FGD participants mentioned that the role they play in the community is highly valuable and this can't be overlapped with the income generating activities. *"After all we know and we understand well our role and consideration in our community, yes we have to supervise the treatment of patients living with terminal illness in our village, so that they can live healthier and longer lives, for example people living with HIV/AIDS and tuberculosis (TB) patients, we have to make sure that they are taking their medications correctly and regularly in order to prevent them from developing drug resistance, or worse yet, to prevent fatal side effects arising from the misuse of these medications"*. He continues by saying that, *"Actually we are healthcare educators, even his excellence the president of the Republic knows and considers our role! We are providing vital education about the healthcare, and leading education campaigns in our villages, brief we encourage our community to take charge of their own health"*.

These perceptions confirm that, the time spent to the cooperative's income generating activities does not affect the time dedicated to community health care activities because of their commitment and plan of action.

4.2 Management of the cooperatives of community health workers

4.2.1 In term of registration,

All respondents confirm that, with support from the ministry of health and local authorities, the community health worker's cooperatives are actually recognized by law. They have registered their cooperatives with the Rwanda Cooperatives Alliance (RCA) which assists in the preparation of application files for and the acceleration of the acquisition of legal personality.

The community health workers understand the importance of working together in cooperatives and the value registering with the RCA adds to their business activities.

One of respondent said from Bugesera said that,

“I started working as a community volunteer in 2009. By then I had no idea that the services I rendered to the community would later become a turnaround of my own life. I now earn an income from the profits of the cooperative; I have an account in the SACCO and can now save and even get a loan to support my own family any time I want. Our cooperative received legal documents from the RCA in 2012 and is now officially recognized as an independent business entity. It has improved my reputation and I find it a good thing that the ministry of health led us in this system of cooperatives and now we are able to contract with financial institutions for seeking funds or loans.”

As seen in this statement, to be registered for a cooperative is a first step and very crucial status for a business entity and its development growing.

4.2.2 Capacity building

Almost all respondents confirm that, they receive trainings from the ministry of health purposely designed to build their capacity and empower them with skills to provide health care services. But until the moment of FGDS, they said that they did not receive any training related to management of their cooperatives. They stated that even fundamental principles of managing cooperatives, conditions and membership criteria, rights and obligation of members, the importance of the cooperative to its members, and management of cooperative assets among others all these fundament knowledge relating to cooperative's concept, they did not receive any

training on them . As cooperatives grow in size and in revenue, the ministry of health hires qualified staffs that are tasked to the daily management of the cooperative but members remain ignorant in this matter.

As narrates one member of the cooperative in Kicukiro that deals in agri-business; they sell crop produce. Referring to the management of the cooperatives, he says that: *“from the time we started the cooperative, I had no idea what it means to manage operations of a cooperative but the ministry of health sent for us a qualified staff and now is running our business with elected committee and we are trusting them even if we did not share the dividend until today, we are in hope.. If it were for the trainings we had to receive at the beginning of the cooperative, we wouldn’t be able today to know what to ask of our leaders and the people who run the cooperative. Actually, we are interesting to go for reading and interpreting the books of accounts of our cooperative, that is the matter of committee and but now we are hearing that our business is running very well.”*

Another participant from Bugesera community health worker’s cooperative also confirms the importance of the training and how it should translate into a better management, he also stressed the importance of the leadership at sector level and the support of the ministry of health. In his own words he said *“The training I got from the beginning of this cooperative made me able to understand how the work of community health workers is very important for the habitants of village, I received trainings how to treat several diseases, how to conduct a door to door complain, etc; but in term of cooperative’s management only a little has done. And it is from the same informed reasoning that I can’t now assure you that our cooperative is run smoothly by the staff. Ok sometime the sector leadership also provides support on overseeing the activities of the cooperative which gives me assurance that there will never be a problem. But a positive point should be noted on this, I cannot recall of a time when I had to do my tour of the village to provide either health service to the household in my area and failed to do so because of the demand to attend to the business of our cooperative. We have a staff of three people who are paid by the cooperative to run its operations. I also have confidence in the leadership of the Sector and the person who leads us at sector and I think there is no doubt because they have been supportive to us all the way through, but it should be better if we beneficiate ourselves the*

training related to cooperative's management and running ourselves the business our cooperatives. ”

These responses suggest that the Ministry of Health has been successful in CHWs program for preparing them to the community health care service proving and as their cooperatives grow, there is a need of trainings in term cooperative's management.

4.2.3 Dividend sharing

On this point, all respondents confirm that they have never received dividend from their cooperative. Even if they stated that they didn't benefited training on management of cooperative, thing interesting is that they all know that dividend payment is a return on surplus revenues to members at the end of each year, proportionate to their contribution to the cooperative.

One of the respondents from Kicukiro district said that, *” I know very well what means dividend sharing; I know that the more you contribute to the cooperative, the more you will earn through profit-sharing benefits. But for us, we are waiting for dividend sharing since two years and till now, we don't know if this distribution of our profits will happen! We are selling our products of banana, we have even our Dina car which support in transportation of our product to the market, and other days is hired to enterprises of contraction and it earns important revenue. Our committee said one day that we have to share dividend from these business, but it never happened , and because of our big number of members, we can sit and found one solution on this problem, some of us even wished to sell this car and put the money on cooperative's account because they don't trust on its management income generating”.*

Another participant from Bugesera district said that,

“I know that a dividend is a payment made by a cooperative to its members, usually as a distribution of profits. When our cooperative earns a profit or surplus, it can re-invest it in the business (retained earnings),and it is what we did, because our cooperative was just at starting level,but now it could pay a fraction of this income as a dividend to cooperative's members, but we are waiting for that, it is not yet happened until today”.

From these responses, respondents know very well what means dividend sharing in cooperative, but they all said that they are not yet receiving dividend since the starting of their income generating activities. When we asked them how the cooperative has impacted their life without receiving dividend, one of participants from Kicukiro said that,

” I has been in community service since 2010, and the impact the new remuneration program impacted my financial and social life even enough . Since the time I started working as a community health worker to perform health promotion activities, there has never been a time when I felt respected and financially developing as the time we started receiving remuneration based on performance. This new approach instilled in me a strong sense of responsibility and also a motivation to keep doing well what I do always, serving my community. So far, I have provided council to close to 400 women in my village on the importance of nutrition to pregnant and lactating mothers as well as their young children and the whole family, antenatal care (ANC), pneumonia, malaria and diarrhea case management among other things. As a result I have managed to earn PBF allowances as a reward to my performance. This income in my community additional to what I do in my usual life; it is something important to me. That keeps me motivated and makes me work even harder to ensure that health indicators in my area do not go down but keep improving instead. As a result of my income, my family is well off now we are able to send our first born to a school she is in secondary. You know, it discourages when you preach what you can't prove. Now when I encourage my community on health and nutrition, they can see it evidenced in the life of my own children. When partners come in the community, they seek our advice and this makes us feel we are an important part in the development of our community. I have been dignified through the vocation of being a community health worker. I really contribute to improve my neighbors' health and we are all proud of being trusted while providing services to villagers. My children can't suffer from kwashiorkor because I know all about avoiding malnutrition. The community is now enjoying improved health, some health issues such as child and maternal mortality rates significantly decreased. Children now eat healthy food; every child is being cared for. On my opinion, even if we are not yet sharing dividend from our business, the 30% we receive is also a kind of dividend and our wish would be to increase it from 30% up to 50%”.

As exemplified from the quotation above, participants consider PBF as a very key factor of their motivation in their community health care activities even though they are not yet receiving dividend from the cooperative's income generating activities.

4.3 Nature of community health worker's cooperatives.

All participants to this study expressed that the nature of their cooperative is different from others, according one of respondent to the study from Kicukiro district, she said that

“The cooperative normally must be owned, or managed by its members; Ownership is a very important factor in the success of any cooperative, in other cooperatives members have full authority to manage and control their cooperatives and they have decision making to all matter relating to the life of cooperative, this is very important. But for our cooperatives, it is not the same, we have no full autonomous character in management of our cooperative. For example, Minisante sent the staff to our cooperative without our consultation, we do not even participate in recruitment, even to decide salaries of these personnel, and the money they receive is withdrawing from our account, it is our contributions and profits. I think it would be better if our cooperatives become like others.

This topic has been characterized by several perceptions and respondents were very participating in FGDs. Another participant from Bugesera district said that,

” For me, Cooperative serves best when it answers the real felt needs of the members, and as we all know, Cooperative is Business enterprise, it means members have to participate in the income generating activities to insure the growth of their business, and when member drop out for any reason, he or she must have the benefice of his shares. But for us it is different, when a member leaves the cooperative, he/she does not receive any money from the shares that he has in the cooperative, he goes without anything, that is the nature of our cooperatives and it is time to review this policy”.

5. DISCUSSION

The results of this study demonstrate that Community health worker's cooperatives play a key role in community health care service delivery. The relationship between the work done in community and the income generating activities is very considered. The findings presented above are here put in confrontation with the existing body of literature on the subject to be able to respond to our research questions and thus understand better, the perspective of CHWs on the PBF remuneration and their cooperatives vis-à-vis the community health care service they are required to provide. Discussions will concern the discourse pertaining to the objectives of the study.

We found that Management of cooperatives shown above, the community health workers have no sufficient knowledge in term of issues relating to management of their cooperatives. The trust they hold in the leadership, local authorities and the ministry of health is actually the basis of this perspective. It is critically important to note that sustainability of cooperatives of community health workers greatly depends on the commitment and continued follow up of local leadership and the ministry of health.

The CHWs are trained on basics of community health care service delivery, but they did not receive training on cooperatives management and this does not guarantee to be able to clearly understand and scrutinize any malfunctions if there be any. It therefore important to ensure that audits are done regularly and the support these important people receive is kept intact.

It was also observed that the CHWs' families are now acknowledging their work as something that is really important since they are earning an income which is opposed to what they used to think of them when they were just volunteering.

It was also identified that the time spent on community service is not in any way interrupted by attending to cooperatives. This rules out the assumption that as cooperatives grow, the demand to attend to the operations and business may override the time dedicated to community health care services.

Recommendations

The local authorities should ensure that the cooperatives are audited and all operations and management of the resources are done well. This is critically important because, even though the CHWs were trained but they still lack the capacity to ensure that proper management of resources is conducted. The system is built on trust and it would cause critical setbacks in cases of embezzlements or mismanagement and this would affect the work of CHWs;

The ministry of health also should continue to support the CHWs with technical expertise and ensuring that the dividends reached the right persons. Reports should continue to be given to the ministry and local authorities;

Limitations

This study provides primary information on perspective of the PBF and cooperatives vis-à-vis the community health service. The study however has several limitations.

- a) The qualitative data of this type cannot be generalized to other settings.
- b) Financial limitations did not allow the more in-depth analysis of the issue.

However, the study provides the basis for future investigations. Future researchers can explore more on the relationship between the PBF remuneration and the work of community health workers.

Conclusion

This study found out that the remuneration program of the Ministry of health on indicators is well spoken of by the community health workers. The CHWs believe management of the incomes from their cooperative's activities, they are based on trust. However, they need an improvement on this, because their cooperatives are still remaining in control of the local leadership. A part from this minor challenge, all CHWs confirms that in case of good management of their cooperatives, these ones contribute positively to the health services they provide to the community.

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ANNEXES

ANNEXE 1: Consent form for study participants

Umwanya usabwa umunyamuryango mu iterambere ry'amakoperative y' Abajyanama b' ubuzima, n' imicungire yayo.

Icyemezo cy' uwemeye kugira uruhare mu kiganiro.

Iriburiro n' icyo tugamiye

Nitwa Canut DUFITUMUKIZA, niga muri kaminuza y' u Rwanda, ishami ry' ubuzima rusange. Ndimu gukorera impamyabushobozi y' ikirenga mu bijyanye n' ubuzima rusange, nkaba ndi gukora ubushakashatsi ku birebana n' amakoperative y' abajyanama b' ubuzima, ku birebana n' umwanya abajyamuryango baha ubuzima bwa koperative mu bukorwa bibyara inyungu, imicungire yayo, ndetse n' isano ibyo byombi bifitanye n' ubukangurambaga ndetse n' izindi serivisi zisanzwe zitangwa n' abajyanama b' ubuzima. Ubu bushakashatsi rero buransaba kugira amakuru ahagije kandi avuye kubo bireba, aribo mwe bajyanama b' ubuzima. Turaza kuganira rero kubantu binyuranye biganisha ku ngingo zavuzwe haruguru. Ndashaka kumenya, uko mubyifatamo, igihe umwanya wo kwita ku bikorwa bibabyarira inyungu muri koperative wagenda ubangamirwa n' igihe gisabwa cyo gukora akazi k' abajyanama b' ubuzima; igihe se mwabona ko koperative yanyu yaba idacunzwe neza! Ndifuzza kumva ibitekerezo byanyu ku bibazo muhura na byo, uburyo mu bikemura, cyangwa se ubafasha gukemura ibishobora kuba byabasumbya ubushobozi. Ibitekerezo n' amakuru rero muri bumpe nibyo biri bumfashe. Nzabyifashisha mu buryo bwo kurangiza amashuri yanjye, ariko rero ibivuye mubushakashatsi, hari igihe nshobora kubitangariza ababishinzwe, kugirango habe hafatwa ingamba zikwiye.

Uko biza kujyenda.

Ikiganiro cyacu kiramara igihe kiri hagati y' isaha imwe n' amasaha abiri. Ibitekerezo bya buri wese ni ingenzi cyane. Mugihe wemeranywa n' igitekerezo cya mugenzi wawe atanze umbwire, no mugihe kandi mwaba mutemeranywa nabwo umbwire. Ntagisubizo kiza cyangwa kibi kurusha ibindi. Ndashaka ko buri wese yumva yisanzuye mu gusubiza, ndabizi ibi ni ibibazo buri wese ashobora kuba afite uko abibona bitandukanye na mugenziwe. Bibaye kandi ngombwa hakagira kandi uwumva atishimiye kugira icyo yavuga, ni uburenganzira bwe busesuye, nta kibazo.

Kugira uruhare mu bushakashatsi

Kugira uruhare muri ubu bushakashatsi ni ubushake bw aburi wese. Ntawemerewe kubahatira kugira icyo muvuga. Uramutse wumvise ikibazo utakishimiye cyangwa se ntacyo wumva

wakivugaho, ntiwirirwe ugisubiza. Ndaza kandi gufata amajwi ibyo turi buganire, Atari ukugirango nzamenye ngo naka yavuze ibi, ahubwo kugirango ntaza kugira icyo nibagirwa mubyo twavuze, cyangwa ngo mbe nabahimbira. Uramutse kandi utifuza ko igitekereza cyawe tugifata mu majwi, cyangwa kimwe mu bika byacyo, umbwire.

Kubika ibanga.

Nta muntu wundi nzabwira ibyo twavuganye. Ibitekerezo byanyu nzabisangiza gusa abarimu dufatanyije muri bushakashatsi. Nta zina ryanyu ndi bufate kugirango buri wese ibitekerezo bye bibe ibanga. Ibyo nza gufata n' aka kuma gafata amajwi, nzabyumvana gusa n'abandi dufaanije muri ubu bushakashatsi, ariko nta zina rizamenyekana. Nabasabaga rero namwe, ko ibyo turi buganire mubifate nk' ibanga, bigomba guhama hagati yacu. Ni ibitekerezo by' abandi bigomba kubahwa.

Inyungu zo kugira uruhare mu bushakashatsi

Nta bihembo biteganyirijwe uzagira uruhare muri ubu bushakashatsi, byaba amafaranga cyangwa ibindi. Kugira uruhare , ni ubushake bwa buri muntu ku giti cye, mu rwego rwo kumfasha kurangiza amashuri; ariko rero nyuma, inyungu zishobora kuzavamo, kuko ibyifuzo byanyu ndetse bibazo mwaba mufite, bizashyikirizwa abashinzwe iterambere ry' amakoperative muri rusange, n' abashinze abajyanama b' ubuzima by' umwihariko.

Abo wabaza ugize ikibazo

Uramutse ugize ikibazo cyangwa se ugakenera kugira ikindi usobauza mu birebana n' ubu bushakashatsi wampamagara kuri telephone yanjye igendanwa 0788350663, cyangwa se ugahamagara iy' umwarimu wanjye unyoboye muri ubu bushakashatsi witwa, Dr Laetitia NYIRAZINYOYE, TEL: 0788683209, cyangwa se ukaba wahamagara uy'umwarimu ushinze ubushakashatsi bw' umwuga, yitwa Dr Aline UMUBYEYI, TEL: 0788264144.

Niba rero mwemeye gutanga ibitekerezo muri ubu bushakashatsi, muranyandikira amazina yanyu, hanyuma muze no gushyira umukono kuri iyi nyandiko.

Amazina.....,

Umukono.....

Itariki.....

Niba wemeye ko tugufata amajwi, urashyira umukono kandi aha,

Amazina.....,

Umukona.....

Annex 2: Interview guides

FGD for members of HCW's Cooperatives

I. Ibibazo bitangira ikiganiro

1. Koperative yanyu imaze igihe kingana iki itangiye?
2. Koperative yanyu ifite abanyamuryango bangahe? Abagore bangahe? Abagabo bangahe?
3. Ibikorwa bibyara inyungu koperative yanyu ikora ni ibihe? Mubona bibazanira umusaruro?
4. Koperative yanyu igira ibyangombwa by'ikigo cy'igihugu gishimzwe amakoperative?

II: Ibibazo birebana n'umwanya w'ibikorwa bibyara inyungu bya koperative

- Ese kubijyanye n' igihe umara ukora muri koperative, ubona ute ingaruka byagira ku murimo w' ubwitange musanzwe mukorera abaturage?
- Ese ubona ufite igihe gihagije cyo gukorera abaturage? Ese ubona ko koperative yawe igufata igihe wakabaye ukora ibindi bifitiye akamaro abaturage?
- Abantu bamwe na bamwe bavuga ko abajyanama b' ubuzima bakora neza ari uko baretse amakoperative akigenga bityo bikabagabanyiriza imvune zo kuyacunga Nawe urabyemera? Cyangwa se ubitekerezaho iki?
- hari ikindi wifuza kuvugambere yuko dusoza iki kiciro cy' ibibazo?
- Haba hari undi se ufite icyo abivugaho?

III: Ibibazo by'imicungire

- Ushobora kunsobanurira uburyo koperative yanyu iyobowe?)
- Ese utekereza ko iya koperative haricyo abafasha cyagwa ibasubiza inyuma mu mikorere yanyu isanzwe ?
- Ese ubona ubuzima bwari bumeze bute mbere ugereranyije nuko bumeze ubu uri muri koperative?
- Utekereza iki ku micungire ya koperative yanyu ubu?
- Ese wambwira niba ubu ushimishijwe nuko bimeze muri makoperative yawe ?
- Niba bigushimishije se, niki kigushimisha? Kubera iki?
- Ese haba hari ibitagushimisha wifuza ko byahinduka?
- Niba hari ibitagushimisha nibihe? Ni ukubera iki? Byahinduka bite? Ni ibiki wifuza ko byakorwa?

IV: Ibibazo bisoza

- Tugeze mu mwanya w' ibyifuzo byanyu. Ni ibihe mubona byakorwa hano muri koperative yanyu kugirango akazi mwarewe nk' abajyanama b' ubuzima mwuzuze inshingano zako.
 1. Mu bijyanye n' ubufasha bw' ibikoresho muhabwa.
 2. Mu bijyanye n' amafaranga muhabwa
 3. Mu bijyanye n' inyigisho muhabwa
 4. Mu bijyanye n' uko babafata
 5. Ubundi bufasha?

Interview guide (English version)

FGD for members of CHW's Cooperatives

I. Introduction issues

- a. When exactly your cooperative has been created?
- b. How many members does your cooperative has? How many women? How many men?

c. What's kind of income generating activities do you have? Are you expecting income from those activities?

d. Has your Cooperative been registered by Rwanda Cooperatives Agency?

II. issues concerning time spent on the cooperative work

- How about the time you spend working in the cooperative. What do you think about that relative to your service to the community?
- Do you think you have enough time dedicated to community service? Do you find your cooperative an obstruction in any way to your daily commitment to the community?
- "Some people have said that one way to improve your work is to do make cooperatives independent and you won't bother managing them. Do you agree with this?" Or, "How do you feel about that?"
- Are there other recommendations that you have, or suggestions you would like to make concerning your cooperatives and the work you do for the community?
- Are there other things you would like to say before we wind up?
- Does anyone else have some thoughts on that?

III. Issues of management

- Can you explain to me how your cooperative is managed?
- Do you think these cooperatives are an enabler or a disabler to your work in the community?
- Can you tell me what life was like before the cooperatives as compared to what it is now when you have them?
- What are some of your thoughts about how your cooperatives are being managed?
- Would you say you are satisfied with the current situation, with the way things are going on?
- (If so) "What are you satisfied about? Why is that?" (Or, "What's going well...?")
- Are there things you are dissatisfied with, that you would like to see changed?" (Or, "What's not going well...?")
- (If so) What are they? Why is that? How should they change? What kinds of things would you like to see happen?

IV. Closing issues

- We are actually at the end of our conversation and it's the time to hear your wishes. What things do you need to be done in your cooperative which could contribute to the success of your work as community health workers elected by people.
 - a. Issues regarding assistance of materials you receive?
 - b. Issues concerning the money you receive?
 - c. Issues relating to the trainings you benefit?
 - d. Issues regarding the manner you are considered?
 - e. Other support?

Annex 3.

Table Respondents by age, gender and level of education

S/N	Code Name	Gender	Age	Education level
1	AARON KAYONDE	Male	37	S3
2	KARABO ANITHA	Female	31	S4
3	KANKINDI BERTHA	Female	42	S1

4	KABURAME DAMSCENT	Male	44	S3
5	NYIRAMANA CLAUDETTE	Female	30	S1
6	KANKUNDIYE EMERANCE	Female	36	S4
7	BAHATI JAMES	Male	41	P7
8	KARINGANIRE GEORGE	Male	39	S4
9	MUKAMURISA ARIDA	Female	28	S4
10	MUGENZI CLAUDE	Male	35	S2
11	NYIRANEZA CLAIRE	Female	40	P7
12	NTEZIRYAYO THEONESTE	Male	37	P8
13	UWINGABIRE CLAUDINE	Female	25	S3
14	MUTAMURIZA FLORIDA	Female	27	S2
15	GATABAZI JOHN	Male	39	P8
16	MUKESHIMANA CANSILDE	Female	34	P8
17	MUKASHEMA MATILDE	Female	41	S3
18	MURINGAHABI PAUL	Male	44	S2
19	MUKABUTERA JUDITHE	Female	48	P8
20	BARAKAGWIRA CHRISTINE	Female	32	S3
21	KABERA FRANCIS	Male	51	P6
22	MUSABYIMANA JOSEPHA	Female	38	S1
23	MUKAMINEGA ANATHALIE	Female	34	S2
24	KABANYANA COLTILDE	Female	30	S2
25	KAMANA CELESTIN	Male	37	S4
26	MUKARUGINA CECILLE	Female	42	P8
27	MWUMVANEZA VENUST	Male	47	P8
28	NYIRABUGENI ANONCIATA	Female	40	S3
29	GAHIZI STRATON	Male	39	S2
30	MINANI FAUSTIN	Male	49	P7
31	SINGIRANKABO ANATOLE	Male	38	S1
32	MUKAMANA CHANTAL	Female	31	S2

Table2: Distribution of CHWs by Sector in Bugesera District

No	Sector (a)	Number of Villages (b)	Total Number of CHWs (b*3)
1	GASHORA	35	105
2	JURU	32	96
3	KAMABUYE	40	120
4	MAREBE	52	156

5	MAYANGE	35	105
6	MUSENYI	46	138
7	MWOGO	25	75
8	NGERUKA	58	174
9	NTARAMA	22	66
10	NYAMATA	47	141
11	NYARUGENGE	39	117
12	RILIMA	56	168
13	RUHUHA	35	105
14	RWERU	39	117
15	SHYARA	20	60
	Total	581	17,843

Source: Bugesera District

Table2: Distribution of CHWs by Sector in Kicukiro District

No	Sector (a)	Number of Villages (b)	Number of CHWs (b*3)
1	GAHANGA	41	123
2	GATENGA	33	99
3	GIKONDO	19	57
4	KAGARAMA	15	45
5	KANOMBE	45	135
6	KICUKIRO	21	63
7	KIGARAMA	38	114
8	MASAKA	46	138
9	NIBOYE	41	123
10	NYARUGUNGA	28	84
	Total	327	981

Source: Kicukiro District