CHAPTER 9. Discussion and conclusions

Community health workers (CHWs) have a unique intermediary position between communities and the health sector. They form an essential group of health workers in many low- and middle-income countries (LMICs), delivering promotive, preventive and (limited) curative health services. CHWs have been shown to contribute to improved health of rural and poor communities (Lewin et al. 2010). There has been a renewed interest in CHW programmes in recent years. It is of importance, therefore, to examine how the performance of CHWs could be improved, taking into consideration that CHWs only receive basic training on a – mostly expanding – package of tasks, but continuously face limited resources and other challenges of the health system and community contexts in which they work. According to the definition of performance used in this thesis, a well-performing CHW would work in ways that are responsive, fair and efficient to achieve the best health outcomes possible, given the available resources and circumstances (WHO 2006). CHW performance comprises the following characteristics: self-esteem, motivation, attitudes, competencies, guideline adherence, job satisfaction, and capacity to facilitate community agency (ERT2 2012). The sum of these different characteristics yields CHW performance, showing that CHW performance is a social process and has multiple influencing factors.

This Chapter discusses the main findings of this thesis according to the study questions defined in Chapter 3, which is followed by a reflection upon the conceptual framework that guided the research. Next, the main conclusions and recommendations for policy and practice are presented. The Chapter ends with considerations regarding the strengths and limitations of the conducted research and recommendations for further research.

9.1 Discussion of main findings

The aim of this thesis was to gain insight into how performance of CHWs in LMICs can be improved, in order to contribute to the realization of better informed, more effective and sustainable CHW programmes and ultimately improved health status of poor and rural communities. The study questions that were developed to achieve this aim have been answered in detail in their respective Chapters in the form of articles. This section provides a short, integrated summary and discussion of the main findings.

The theoretical component of the research presented in this thesis addressed study questions 1-3:

1. Which factors related to CHW programme- or intervention design influence the performance of CHWs?
2. Which contextual factors, including the broader and health system context, influence the performance of CHWs?

3. How do these factors interplay with each other?

Chapter 4 showed that variations in the design of CHW programmes or interventions have significant influence on CHW performance. The most prominent factors that influenced CHW performance in different settings from around the globe were related to:

- the definition and clarity of CHWs’ tasks and the time they spent on service delivery;
- human resource management, including the selection process, the way CHWs were supervised and trained, and the kind of incentives they received;
- quality assurance processes, such as the use of standard operating procedures and programmatic guidelines;
- structures facilitating CHWs’ links with the community and health sector, such as village health committees (VHCs) and the organization of professional support; and
- resources and logistics, including transport, CHW kits and job-aids.

These factors were often related to one another, were highly context-specific and could therefore not be seen separately from the health system and broader context in which they were situated.

Chapter 5 presented the most prominent contextual factors influencing CHW performance, derived from studies of CHW programmes from a variety of countries and settings. These factors related to:

- the community context, including cultural and gender norms, the education and knowledge level of CHWs’ clients and the extent of disease-related stigma;
- the economy, more specific the economic hardship that CHWs cope with;
- the environment, including geography, distances to cover and climate;
- the health system policy, which included political commitment and the existence and extent of implementation of policies and legislation on CHWs or human resources for health in general; and
- the health system practice, which was related to the functionality of the health system as a whole and the embedment of CHW programmes within it.

These contextual factors formed a complex and interactive web and influenced the daily practice of CHW programmes through the experiences, mind-sets, and values that shape the behaviour of actors within them.

Factors that directly influenced performance at the level of the individual CHW did so by interfering or changing one or more of the characteristics of performance. For example,
studies reported an influence on competencies, self-esteem or motivation, whereby the influence on the latter two was mostly self-reported. It became clear that many factors that influence CHW performance also influenced one another. Factors could also have a direct influence on the end-users of CHWs’ services (the community), such as on their health-seeking behaviour, and as such indirectly influence individual CHW performance. In addition, the performance of CHWs could have a reciprocal influence on the initial factors influencing CHW performance. Chapters 4 and 5 presented numerous examples of the ways in which different factors interplayed with each other. Three examples are given below. It is important to note that the examples do not intend to present a complete overview of (combinations of) pathways influencing CHW performance, rather they intend to illustrate the complexity of how CHW performance is shaped in certain settings.

**Culture, gender and CHW performance**

In certain cultures, gender roles and norms had an influence on health-seeking behaviour of people in the community, especially women. When women were not free to move around, interventions were developed in such a way that home visits were included in the work package, assuring that CHWs could reach their target group. This necessitated other features in the design of interventions, such as transport for the CHW and on-site supervision. When women were not free to interact with men outside their household, CHW programmes focused on selecting female CHWs according to set criteria. However, when the same cultural context prevented female CHWs from being free and able to interact with men in the community on health-related issues, the involvement of male CHWs was considered. In patriarchal societies, this had other implications for CHW programmes: as the society saw them as breadwinners of the family, male CHWs were less motivated to work on a voluntary basis than female CHWs. Furthermore, men were not seen as “caring” persons, and following this viewpoint, some CHW programmes had specific types of tasks (the more caring, and administrative and technical tasks) officially assigned to female and male CHWs respectively, with implications for workload division and communication between CHWs.

**Economy, financial constraints and CHW performance**

CHWs were motivated if they received remuneration or non-financial incentives, or even – in the case of volunteers – if they had hope to be compensated in the future. The economic situation in a country had an unavoidable influence on the financial model of the health system, which in turn had an influence on the types of incentive packages of CHW programmes and the price of health care for clients (which could influence health-seeking behaviour). Economic constraints sometimes resulted in stress experienced by
CHWs, because of their continuous exposure to the struggles of their clients. A lack of compensation for services rendered sometimes led to an inability of CHWs to provide for their family, leading to demotivation or neglecting their tasks as CHWs as a result of seeking other income. Financial constraints furthermore dissatisfied and demotivated CHWs, as they lacked resources such as job aids, drugs and equipment and felt unsupported, as intervention design elements such as supervision were often the first issues to “be cut off”. In some cases, a vicious circle of demotivation could not be prevented, because community expectations could not be met and CHWs’ position lost legitimacy.

Task shifting and CHW performance

In many contexts, CHW tasks seemed to expand, leading them to increasingly performing curative tasks. This often led to motivation and satisfaction, as a result of being able to assist people better and receiving recognition from community members. Expanding tasks required intensified training and supervision, which were mostly included in the intervention design. However, regulatory frameworks within the health system did not always accommodate these expanded CHW tasks. This could lead to CHWs not being supported in case of malpractice or conflict and lack of cooperation from other cadres when the most up-to-date CHW job description is not widely known. The latter could in turn hamper community trust and recognition for CHWs, leading to demotivation. In certain cases, task-shifting led to demotivation because of increased workload, but incentives remained the same.

While answering study questions 1-3, it became clear that situations in which CHWs’ relationships with the community and the health sector were facilitated – through certain contextual factors or design elements – were associated with improved CHW performance. This triggered the research team to look deeper into how relationships were shaped between CHWs, their communities and actors in the health sector. This is covered in the empirical component of the research presented in this thesis, addressing study questions 4 and 5.

4. How are relationships between CHWs, their communities and actors in the health sector shaped and how do they influence CHW performance in selected countries?

Factors that influenced CHWs’ relationships with the community and health sector in Ethiopia (Chapter 6) and Malawi (Chapter 7) were related to certain programme design elements and cross-cutting issues. In both countries, CHWs’ relationships with their communities were facilitated by:
CHWs, because of their continuous exposure to the struggles of their clients. A lack of compensation for services rendered sometimes led to an inability of CHWs to provide for their family, leading to demotivation or neglecting their tasks as CHWs as a result of seeking other income. Financial constraints furthermore dissatisfied and demotivated CHWs, as they lacked resources such as job aids, drugs and equipment and felt unsupported, as intervention design elements such as supervision were often the first issues to be cut off. In some cases, a vicious circle of demotivation could not be prevented, because community expectations could not be met and CHWs' position lost legitimacy.

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**Factors that influenced CHWs' relationships with the community and health sector in Ethiopia (Chapter 6) and Malawi (Chapter 7) were related to certain programme design elements and cross-cutting issues. In both countries, CHWs' relationships with their communities were facilitated by:**

- the nature of CHWs' position and role;
- the support in implementation of activities that CHWs received from traditional leaders, volunteers and the wider community; and
- community-driven monitoring and accountability mechanisms.

**CHWs' relationships with actors in the health sector were facilitated by:**

- the referral and supervision system;
- the training undertaken by CHWs;
- monitoring and accountability from the side of the health sector; and
- support that CHWs received from health professionals and managers.

**Within the above programme design elements, the following cross-cutting factors triggered strong relationships:**

- trust;
- communication and dialogue; and
- expectations (of actors in the community, the health sector and CHWs themselves).

The case studies showed that these factors, which shaped CHWs' relationships with communities and the health sector, particularly influenced CHW performance through motivation.

In Ethiopia, the fact that health extension workers (HEWs) were selected from the community that they served enhanced community trust in HEWs, partly facilitated by good attitudes and high self-esteem of HEWs as a result of serving their own community. The positive influence of the support that HEWs received from the health development army (HDA) on CHWs' relationships with community members is also worth mentioning. Working together with the HDA provided HEWs a vehicle for improved communication and dialogue with a wide variety of community members. The HDA presents an opportunity for further strengthening HEWs' relationships with the community, by expanding its function from providing support to HEWs' tasks towards monitoring HEWs' performance and accountability. In a number of areas, joint review meetings between the health sector, HEWs and community members already took place. Supervision with a fault-finding approach and without feedback – partly as a result of lack of resources and training of supervisors – hampered relationships between HEWs and supervisors. Although the supervision approach was not always conducive for the establishment of trusting relationships between CHWs and the “upper level”, HEWs indicated that they felt supported when they received regular assistance in their daily work from health professionals at the health centre level, which enhanced their competencies and made them feel part of a team.
Health surveillance assistants (HSAs) in Malawi were assisted in their communication with community members by traditional leaders, which was also often the case for HEWs in Ethiopia. However in Malawi, relationships between HSAs and communities were more problematic than in Ethiopia, because HSAs often did not reside and come from their communities of service, which hampered community trust in HSAs. Prioritization of facility-based work further constrained relationships with the community, because of hindered communication as a result of not being present in the community. Furthermore, a high degree of mistrust was discovered between volunteers and HSAs and also between HSAs and their supervisors and managers related to (financial) incentives that were not always available and were assumed to be withheld from the persons who were supposed to receive them. There was further mistrust by HSAs of the health sector because of perceived favouritism related to training attendance, disrespect by other health workers, and lack of support from supervisors and management.

5. What are the similarities and differences regarding factors that influence relationships of CHWs with communities and actors in the health sector in selected countries?

This study question was addressed in Chapter 8. The similarities and differences in “how” relationships of CHWs with communities and the health sector were shaped were analysed through the identification of mechanisms, which are the recourses that interventions offer to enable their subjects to make them work, more specifically the process of how relevant actors interpret and act upon the intervention stratagem. Where possible, we related context (C, in this case the CHW programme and broader societal context) to underlying generative mechanisms (M) leading to an outcome (O, in this case relationships). These are called context-mechanism-outcome (CMO) configurations (Pawson and Tilley 1997).

Figure 8.3 in Chapter 8 presents an overview of factors that influenced relationships between CHWs, communities and the health sector, derived from a multiple case study including Ethiopia, Kenya, Malawi and Mozambique. Perceived trusting relationships between CHWs and their communities were caused by the following mechanisms:

- feelings of connectedness, familiarity, serving the same goals, free discussion (all from both the CHW and the community side);
- perceptions that CHWs serve in the community's interest, enhanced recognition, respect and credibility (from the community side); and
- feelings of self-fulfilment (by the CHW).

For these mechanisms to be triggered, the following programme-related contextual factors were found to be important:
• CHWs to be recruited from their area of service;
• CHWs to be selected with involvement of communities;
• volunteers to form an official element of the programme;
• traditional leaders to be involved in the programme;
• curative tasks to have been shifted to CHWs; and
• CHWs to be female (only in contexts where gender roles in (reproductive) health care were separated).

The broader contexts in which the mechanisms were able to exist were contexts where community participation was promoted and valued, contexts with a history and value of volunteerism, or contexts where traditional leadership played an important and respected role at the community level.

Trusting relationships between CHWs and actors in the health sector were related to the following mechanisms:

• feelings of connectedness and serving the same goals (from both sides); and
• feelings of being supported (from the side of the CHW).

Only a few mechanisms leading to trusting relationship between CHWs and the health sector were identified, as compared to those leading to trusting relationships between CHWs and their communities. Moreover, few mechanisms related to feelings or behaviours of actors in the health sector were found, although this might be a limitation of the study itself. Other studies have been able to identify additional mechanisms, for example, related to health professionals reporting that CHWs assist them in reducing their workload (Glenton et al. 2013). For the identified mechanisms to take place, the following programme-related contextual factors were found to be important:

• professional support structures to be available;
• curative tasks to have been shifted to CHWs; and
• regular and visible supervision to take place.

The study also revealed contexts and mechanisms associated with weak relationships. For example, weak relationships between CHWs and their supervisors and managers were a result of:

• disrespect and doubts about CHWs’ competencies (from the side of the health sector);
• feelings of disconnectedness, unfamiliarity and not being supported, a lack of confidence in the upper level (supervisors and management) and perceptions of dishonesty and unfairness of the upper level (from the side of the CHWs); and
• misunderstandings related to lack of communication (from both sides).
In certain cases, weak relationships between CHWs and their supervisors or managers had a negative knock-on effect on the strength of CHWs’ relationships with their communities.

Some CMO configurations were more specific to particular settings. For example, communities could perceive CHWs as dishonest if CHWs were (forced to be) involved in politics (Ethiopia) or if volunteers received different and irregular incentives, as a result of multiple vertical programmes in a context where resources are scarce and receiving allowances to top up salaries is common (Malawi).

9.2 Framework on community health worker performance

The complexity and intersection of factors that influence CHW performance call for the development of a framework that could assist policy makers and programme managers to shape their interventions and researchers to guide their studies. In Chapters 4-8 of this thesis, the initial conceptual framework (as presented in Figure 2.2) was tested and reflected upon. Figure 9.1 presents an adapted framework on CHW performance, in which the evidence from both the theoretical and empirical component of this thesis has been captured. The framework and its underlying set of hypotheses form a theory focusing on CHW performance as a social process, embedded in the health system seen as a social construction (Franco et al. 2002; Sheikh et al. 2011). The hypotheses on how the different elements presented in this framework affect each other form the cadres in which specific pathways that could lead to improved CHW performance are situated. These pathways, some of which have been discussed above as examples, can be tested in the upcoming two cycles of implementation research on quality improvement interventions within REACHOUT¹³.

The framework and its underlying hypothesis

The framework has CHW performance in the centre, as this is the issue of focus. Different circles around CHW performance present the multiple layers of influencing factors, starting with the programme or intervention design in the inner circle and the health system and broader context in the outer circles. Health systems’ related influencing factors are divided into “hardware” and “software” (Sheikh et al. 2011) and are coupled with hardware and software elements of intervention designs. System hardware includes the six building blocks of the health systems framework as presented in Chapter 2, Figure 2.1, and they affect intervention design factors, such as the supervision system; training, accountability and communication structures; incentives; and supplies and logistics (see also Section 9.1). These intervention design factors, in turn, influence CHW performance.

¹³ More information about REACHOUT can be found in Chapter 3, Section 3.2.
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motivation and satisfaction – are influenced by both hardware and software elements, and therefore presented in the middle of the circle of CHW performance. The hardware and software elements continuously influence each other (indicated with the big arrows in the circle). For example, the availability and design of the supervision system influences the strength of relationships between CHWs and health system actors and sometimes also between CHWs and the community (Roberton et al. 2015). If relationships between CHWs and communities are constrained, intervention design elements (hardware) could be adjusted or introduced to improve software elements. For example, when representatives from existing community networks receive a formal role in identifying challenges in service delivery, testing solutions and monitoring changes within the CHW programme, relationships and thus CHW performance could improve (Lunsford et al. 2015).

CHW performance is not a static measure. The different characteristics of performance will be present to different extents at different times, and they do not stand on their own, but influence each other as well (indicated with the arrows in the circle of CHW performance). The “status” of CHW performance, in other words the constitution of its different characteristics, could have a reciprocal effect on the intervention, system and broader context in which the CHW is working (indicated by the two arrows from the centre pointing towards the surrounding circles). Actors in the CHW programme and in the health system and society as a whole have opinions and perceptions about CHW performance, which influence their trust in and relationships with CHWs, again influencing CHW performance. At the hardware side, assessments of guideline adherence or change in the CHW programme elements related to hardware can never fully “fix” problems related to the software. Secondly, the current literature clearly shows the influence of hardware elements on performance characteristics such as adherence and competencies, but less on agency, attitudes and self-esteem. When the interactive cycle is stimulated, we would expect characteristics such as self-esteem and agency to change as well, which would further improve CHW performance.

Reflections on the framework

The presented framework substantially differs from the initial conceptual framework presented in Figure 2.2. The initial conceptual framework was developed based on a first reading of the literature and mainly shows system and intervention hardware elements influencing CHW performance. This suggests that the perspective of CHW performance as a social process has not been examined in detail in the literature. During the course of this research, the importance of relationships for CHW performance became clear, and further investigation into this sub-element of the software elements influencing CHW performance was undertaken. As a result, more light was shed on the mechanisms through which software elements triggered changes in CHW performance, and how these interplayed with mechanisms triggered by hardware elements. A clearer picture on factors influencing CHW performance emerged, and was summarized in the new framework. It needs to be noted that the research presented in this thesis did not focus on all software elements that could influence CHW performance: the focus was on the underlying issues...
shaping relationships and issues like power were not researched in-depth. In addition, the research did not intend to reflect on the specific concept of CHW performance. The characteristics of (individual) CHW performance were taken from the initial reading of the literature and not individually analysed nor assessed, rather they were taken as (sometimes self-reported) outcome measures in the respective studies. The new framework does not visualize the effects of CHW performance at the end-user and impact level, however, it assumes that improved CHW performance leads to improved services, positive changes in health-seeking behaviour of and utilization of services by communities and ultimately impacts on the health of the population.

The adjusted framework touches upon some interesting considerations for policy, practice and research. Firstly, the realization that hardware and software elements are both needed and meant to strengthen each other calls for the incorporation of programme or intervention elements facilitating this process. This discussion further presents some recommendations on how to do this in Section 9.3. However, additional research is needed to attain a more complete overview of possibilities and it should be kept in mind that the broader context, such as social connectedness and trust within communities, is diverse; and thus CHW programme elements related to hardware can never fully “fix” problems related to the software. Secondly, the current literature clearly shows the influence of hardware elements on performance characteristics such as adherence and competencies, but less on agency, attitudes and self-esteem. When the interactive cycle of hardware with software elements is stimulated, we would expect characteristics such as self-esteem and agency to change as well, which would further improve CHW performance. Implications for the type of research that would be needed to observe these changes are discussed in Section 9.5.

9.3 Conclusions and recommendations for policy and practice

The main research question of this thesis is:

*How is performance of community health workers shaped in low- and middle income countries?*

This research has demonstrated that a complex and interactive web of multiple factors influences performance of CHWs. The main findings give useful insight into how CHW programmes could be developed or adapted to improve CHW performance. It is of great importance that the context is taken into account during this process, as CHW performance is highly context-dependent. Nevertheless, several recommendations that are applicable to multiple contexts can be made for policy makers and programme managers aiming to optimize CHW programme performance.
1. When developing the CHW profile and selection criteria, contextual realities and programme requirements need to be taken into consideration

There is a large diversity in CHW profiles. In some cases, the profile of CHWs simply developed over time, in many other cases it was a result of targeted selection based on set criteria. In all case studies included in this thesis, it was found that CHWs perform better if they come from the community that they serve. In some cases, the profile of CHWs was influenced by contextual factors (for example, in the case of gender preference) or by programme tasks and goals (for example, if certain skills and competencies were needed and therefore a certain educational background was required). Thus, performance of CHWs could be improved if the CHW profile is well thought-through and selection is implemented to accommodate the requirements. CHWs perform if they are both “fit for purpose” and “fit to practise” in a country’s context.

2. When a mix of CHWs is preferred in order to share workload, tasks of and incentives for the different CHWs need to be clearly defined

There are several CHW programmes that include both paid and voluntary CHWs in complementary roles. This mix was found to improve CHW performance in some settings, as teamwork made workload more manageable (Yeboah-Antwi et al. 2014). However, in other settings, a lack of clarity on tasks and differences in incentives led to problems between the CHWs and hindered their performance. Therefore, programmes that include both paid and voluntary CHWs need to ensure a clear task division, which is known by all relevant actors, as well as provide clear guidelines with regard to incentives for both types of CHWs. This is important to foster relationships between different types of CHWs and improve motivation and performance.

3. When a mix of CHWs is present as a result of vertical programming, coordination and harmonization efforts could improve CHW performance

In several countries, such as Kenya and Malawi, various vertical programmes use different types of CHWs. In this case, the mix of CHWs is not programme-based, but the fact that different (often non-governmental) organizations are present in one area results in a mix of CHWs. It has been shown that this situation often leads to lower CHW motivation and thus poorer performance, because of continuous comparison of benefit packages between different types of CHWs and lower recognition and trust from the community as a result of confusion regarding roles and diverse expectations. The latter can have further effects: if a woman visits a village clinic to receive contraceptives from a CHW and is sent back because another CHW, working for a different organization, is taking up this issue, it is questionable if the woman will take the extra effort to seek this service elsewhere. In
the case of an unintended mix of CHWs, a CHW programme mapping at the national and district levels could be considered, to provide input for improved coordination between vertical programmes and harmonization of, for example, incentive guidelines. This could clarify roles and improve collaboration between different types of CHWs. It could also assist in managing the expectations of the different actors involved, which is important for trust and relationship building.

4. **There is room for optimization of the benefits of the unique intermediary position of CHWs between communities and the health sector**

The intermediary position of CHWs between the community and health sector provides various challenges and opportunities that need to be taken into account to improve CHW performance.

   a. **The “voice” of communities in CHW programming needs to gain prominence**

Our research stresses the importance of the involvement of both the community and health sector in the selection and monitoring of CHWs. They can be seen as programme or intervention elements that stem from the intermediary position of CHWs between these actors. Therefore, it is advisable to promote the establishment of functional structures that facilitate involvement of and relationships between all actors, such as joint review meetings and village health committees (VHCs). This could assist CHWs in their work, as coordinated monitoring may prevent CHWs from feeling torn between the different interests of their communities and the health sector. In many instances, it was found that there was more influence from the health sector than the community side regarding selection and performance monitoring, presenting an imbalance in power and accountability. Existing VHCs often supported CHWs in conducting their tasks and creating health care demand, but had limited or no accountability functions. The same was found in a recent realist analysis of minutes of community health committee meetings in Nigeria (Abimbola et al. 2015). Communities are part of health systems and are, in many LMICs, attached to the rest of the health system through CHWs. Our research shows that there is a need for improved community agency and ownership in (monitoring of) CHW programmes (Mkumbo et al. 2014; Roberton et al. 2015). This could be realized through clear guidelines regarding accountability functions, mentoring and support and enshrinement in law of village or community health committees (Abimbola et al. 2015).
b. The role of CHWs in giving voice to communities needs revitalization

The above call for more community voice is interesting in that CHWs themselves are often believed to be vehicles for facilitating community agency and triggering social change. Recently, some scholars stated that the function of CHWs as agents of social change has been pushed from the forefront by technical tasks focusing on attaining disease specific targets (Kalofonos 2014; Mishra 2014; Pérez and Martinez 2008; Sabo et al. 2013). This tendency has been affirmed in our review, although the few studies on CHWs’ roles in stimulating community agency could be a result of the fact that conducting research on this “vaguer” role is more challenging. The ethnographic research of Kalofonos (2014) describes how the work of voluntary CHWs in Mozambique changed from a social- and spiritual-oriented community-level response to the AIDS epidemic to an expanded, more technical scope of work as a result of HIV testing and anti-retroviral treatment (ART) becoming available. This transition devalued the non-technical skills of the CHWs and thereby the people that embodied and represented them: older, poorly educated women (Kalofonos 2014). In India, an ethnographic study found that relationship building with the community was valued as very important by CHWs and that the narrow indicators used to measure health system performance, including a hierarchical structure and the value of statistical evidence above field-based experiences, could disturb the potential role of CHWs as agents of social change, cultural mediators and health promotors through effective community participation (Mishra 2014). These studies show that programme or intervention hardware elements can have a profound influence on software elements: task composition and the way in which performance is measured can have a bearing on how communities look at CHWs and thereby influence CHWs’ capacity to relate to the community and facilitate agency. When CHWs are required to act as agents of social change, they themselves need to feel empowered (Kane et al. 2015). For example, they need to be trained in soft skills such as communication and problem-solving at community level (Redick et al. 2014). In addition, the introduction of new ways to measure CHW performance, focusing on for example agency and interaction with communities, could assist in further spearheading the role of CHWs as agents of social change.

c. CHWs’ relationships with the health sector need improvement

Despite the fact that the health sector has more influence on CHW programming than communities, we found that relationships between CHWs and their supervisors and managers generally needed improvement. Our research shows that many CHWs did not feel supported nor respected by the upper level, which hindered motivation and performance. Joint training of CHWs with their supervisors could contribute to better relationships, as understanding about each other’s roles and competencies can be established during the training. There is a need for improved, supportive supervision (Hill
et al. 2014; Marquez and Kean 2002), including training of supervisors in technical skills, the CHW programme itself and people management (Daniels et al. 2010; Hernández et al. 2014; Panda et al. 2015). As supervision is a form of human interaction (Clements 2007), strategies that reduce social distance between supervisor and supervisee (such as team building events) could also improve relationships. Thus, the hardware elements of interventions should reflect and take into account software elements, such as power relations and values and norms of actors involved, in order to yield better CHW performance. Improved supervision from the side of the health sector could have a positive ripple effect on CHWs’ relationships with their communities, through increased recognition. A recent study from Tanzania affirms this finding (Roberton et al. 2015).

5. Decisions regarding CHWs’ integration into the health sector depend on programme needs and context and require considerable debate

Recently, there has been a debate at the global and national levels about whether CHWs should be formally integrated workers in the health sector (Liu et al. 2011; Zulu et al. 2015; Zulu et al. 2014). Many Sub-Saharan African countries go into this direction\(^{14}\), with guidance from the One Million CHW Campaign. This process is dependent upon political will and perceptions of relevant actors, including community members, on CHWs and CHW performance. Integration of CHWs as a formal cadre in the health sector requires accommodating CHWs’ voices and rights through regulatory frameworks, career paths and worker associations (which are rarely found for any CHWs worldwide). The question whether to promote the integration of CHWs into the health sector is also attached to the unavoidable remuneration question: when can CHWs be volunteers and when is remuneration advisable? To be able to answer this difficult question, it is important to consider how remuneration would interact with or affect other programmatic and contextual factors.

a. When CHWs have multiple workloads, remuneration could be considered, while assuring that their connection to communities remains strong

Our findings support remuneration of CHWs when they have multiple tasks that require substantial time investments. Financial incentives need to be distributed in an equitable and reliable way (Strachan et al. 2012) to avoid mistrust between actors in the health system, as shown in the Malawi case study. Payment of CHWs is an essential motivator, as it contributes to meeting the basic needs for CHWs and their families, who often live in poor areas. However, philosophical considerations and financial realities can be the reasons for programmes not to pay (Cherrington et al. 2010). Some scholars argue that

\(^{14}\) Often aiming for a mix of paid and voluntary CHWs.
paid CHWs feel more answerable to the organization they are working for than to their communities, which could lead to mistrust and negative effects on CHW performance (Cherrington et al. 2010; Glenton et al. 2010; Maes 2014). In this case, hardware elements would have an unintended effect on software elements. On the one hand, payment of CHWs would lead to improved CHW motivation; on the other hand, it could lead to an increased distance between CHWs and communities. Both have contradicting effects on CHW performance. Innovative strategies that keep paid CHWs connected to their communities could be developed, and supervision and performance appraisal (with roles of both the health sector and communities) could be organized in such a way that they explicitly capture CHWs’ capacity to facilitate community agency.

b. When CHWs work part-time and on a limited set of tasks, voluntary CHW programmes could be appropriate, if incentives are responsive to CHWs’ realities

Programmes that include voluntary, part-time CHWs with limited tasks have shown positive effects, especially in engaging the community in grass-roots health-related empowerment (Singh et al. 2015). The history and value of volunteerism has been identified as an important contextual factor influencing CHW performance. CHWs can have different reasons to volunteer, such as gaining social respect, religious and moral duty (Glenton et al. 2010), altruistic concerns for others, the desire not to be unemployed and (future) career advancement possibilities (Akintola 2010a; Akintola 2010b). However, a recent study showed ambivalence in motivation: uncertainty in achieving basic food security and improved socioeconomic status for themselves and their families made voluntary CHWs in Ethiopia request for remuneration (Maes 2012). Thus, the socio-economic, cultural and religious context can shape CHWs’ expectations about incentives. Voluntary CHW programmes could make use of the contextual factors driving volunteerism, but at the same time ensure the incentives are responsive to this context.

c. Both paid and voluntary CHW programmes require serious investments

Task-shifting to (often paid) CHWs requires further training, increased supervision and incentives (Ochieng et al. 2014; Sander et al. 2015; Zachariah et al. 2009). The challenge of voluntary CHW programmes is drop-out and, in the long term, maintaining sustainability. High turnover rates can result in extra costs to the programme, as CHWs need to be replaced and trained. Drop-out can (partly) be prevented by providing non-financial incentives, such as training (Haile, Yemane, and Gebreslassie 2014), materials such as bicycles, preferred access to health care services and recognition via “CHW days” or identity cards (Amare 2011; MCHIP 2014). When new tasks are added to the voluntary
CHWs’ job, the cost benefit trade-off of volunteering may shift, and therefore workload assessment and re-evaluation of support and funding are advisable to avoid attrition (Kasteng et al. 2015). Whether voluntary or paid, CHW programmes require substantial financial investments for training, equipping and supporting CHWs (Daniels et al. 2014). The huge variety in possible incentives makes the division between paid and voluntary programmes less defined (Bhattacharyya et al. 2001) and perhaps unimportant, as programmes would offer (either financial or non-financial) incentives according to programme needs and context.

9.4 Research strengths and limitations

A major strength of this research is the combination of methods, which were chosen based on their suitability to answer the study questions. The order in which they were employed allowed each study to build on understanding gained in previous studies. The qualitative research synthesis provided insight into the variety of factors that could influence CHW performance in different contexts from around the globe. This insight was used in the development of the country case studies which were conducted using harmonized methods. The notion that relationships were instrumental for optimizing the benefits of CHWs’ unique intermediary position between communities and the health sector, but were understudied, brought focus to the empirical component of the research. The multiple case study provided a suitable approach for exploring how relationships between CHWs, their communities and actors in the health sector were shaped and which mechanisms, in which contexts, triggered change in CHW performance. The wide variety of study participants provided good insight into different perspectives.

Another strength is that for the full duration of the research period, a group of researchers from various disciplines and countries were involved. This brought in different perspectives which enriched the research process, from study development to data analysis. At the country level, experienced data collectors who were familiar with the context conducted the field work and also participated in data analysis sessions. The experience of some of the researchers, including the PhD candidate, in district-level CHW programming added value to the analysis. In most study areas, findings were fed back to study participants. In addition, policy makers and programme managers played a role in validation of research findings. The research provided input into the development of quality improvement interventions in areas where the research was conducted.

The qualitative research synthesis was undertaken to unravel which factors influence CHW performance, and “why” and “how” they do so. This goal was only partially reached, because studies often lacked “thick descriptions” (Ceertz 1973). On the one hand, the inclusion of both qualitative and quantitative studies was a strength, as it allowed for studying CHW performance from all angles. On the other hand, including different study
types in research syntheses poses challenges in terms of both content and quality assessment (Mays, Pope, and Popay 2005), something that we also encountered. Inclusion of studies was decided using criteria related to the content of the study as captured in a data extraction form. The studies were also assessed on quality using an adjusted version of an existing tool containing general quality criteria in relation to both qualitative and quantitative research (see Chapter 4 and 5). However, study quality was not used as a reason for excluding studies. It also turned out to be not feasible to use the conducted quality assessment for weighing study results in the synthesis, as studies highly varied with regard to the influencing factors and characteristics of CHW performance they studied, making comparison between studies and decisions on their “weight” difficult. The researchers involved in data extraction reached a common understanding on how to apply content- and quality-related criteria before the process started by discussing some studies together. Further transparency about decisions made was safeguarded by double reading and joint analysis. Notwithstanding the above, the analysis remained an interpretive process in which full objectivity is never possible.

The qualitative research synthesis provided a wealth of data on CHW performance and offered different directions for further analysis. The choice to focus on relationships, and in particular the role of trust, was made by the research team based on data derived from the literature combined with the main emerging themes from the four country qualitative data sets. The choice was also informed by work of other scholars on the same topic, but which looked at different types of health workers (Gilson 2003; Hall et al. 2001). It is important to note that other aspects of relationships, such as commitment, communication and influence, could be important influencers of CHW performance as well. The questions posed regarding participants’ views on factors influencing CHW performance were open ended (although probing was done on mainly hardware elements such as supervision and training), and in different contexts, the issues of relationships and trust were brought forward by different types of participants, suggesting these software elements were found to be important.

The fact that only one of the software elements was researched in-depth poses limitations to the framework as presented in Figure 9.1. The complexity of CHW performance did not allow the research team to study all the aspects presented in the adjusted framework. As such, we did not aim to present a complete theory on CHW performance, but rather to capture evidence derived from both the theoretical and empirical components of the conducted research. The framework stresses the importance of software elements besides hardware elements, something that turned out to be instrumental for CHW performance. It is important to further test this framework.

While the qualitative research synthesis covered the whole globe, the case studies were focused on Sub-Saharan Africa and only included CHW programmes in which CHWs had multiple tasks. The perspective of CHW performance as a social process stresses the
importance of the context, and therefore findings from one setting cannot be automatically valid in other settings as well. Having said this, we have been able to identify factors that influence CHW performance across different settings, supporting transferability of research findings.

9.5 Recommendations for further research

The research presented in this thesis opens up a range of questions for additional research that would further test the adjusted framework on CHW performance. It also raises issues regarding the way in which research is conducted.

Part of this thesis has shown the dearth of research on the software elements of the health system in general and of CHW programmes and interventions in particular. There is a need to better understand how ideas and interest, relationships and power, values and norms of actors in the health system positively or negatively affect CHW performance, or act as facilitators or pose limitations to the programme as a whole. It is also important to find out how interventions can be shaped to increase common understanding, improve relationships and balance power between different actors. Our study did not find many mechanisms related to feelings or behaviours of actors in the health sector that led to trusting relationships between them and CHWs. This could be an interesting topic for further research, to input into the development of interventions that stimulate trust between CHWs and actors in the health sector. In addition, programme designs facilitating community involvement in CHW programmes need to be further explored. Specifically, community accountability is an under-researched topic. The effects and functionality of different community accountability modalities need further study. There is also a need to shed more light on how the role of CHWs in facilitating community agency can be strengthened, and what implications this has for the design of interventions. In addition, it would be interesting to evaluate whether programmes that are designed with input from CHWs and community representatives are better tailored to the realities and needs of communities than programmes that are designed in a more top-down way.

With regard to the CHW programmes’ hardware elements, in many instances the “how” and “why” questions have not been fully answered. These “how” and “why” questions are closely related to the software elements. There is a need for studies that compare the effects of and experiences with different modalities of, for example, supervision as well as studies that compare similar modalities in different contexts. This would yield evidence on specific pathways that could improve CHW performance. The influence of context on CHW and programme performance has been explored in this thesis, but many research gaps remain. For example, the political context can shape relationships between the government, health sector and communities, which can influence CHW programme design and performance. Future research needs to focus on different characteristics of CHW
performance, so that CHW performance in totality can be better understood. At the moment, motivation is often included as a measured or self-reported outcome. Attention to other outcome measures, such as competencies or self-esteem (presumably much more complex) is needed, preferably combined with outcomes at the level of the end-users or impact. However, it remains challenging to attribute measured impact to CHW performance, because of the complexity of factors influencing it.

The above calls for research methodologies that are suitable for studying complexity. As CHW performance is a complex social process, and is the sum of different characteristics of performance that all vary in nature and change over time, it could be best researched using multiple methods. Quantitative studies that could measure certain performance-related outcomes should ideally be combined with qualitative studies, to be able to explain “how” and “why” things work or do not work, for who and in which contexts. Although there is an increasing body of literature on factors influencing CHW motivation, there is still a lack of research that gains in-depth insight in the realities of the lives of CHWs and the communities they serve (Gilson et al. 2011; Maes 2014).

A suitable knowledge paradigm for researching CHW performance is the critical realist paradigm, which can be placed in the spectrum between positivism and relativism (Gilson et al. 2011). Critical realism locates causal relationships not at the level of events (where scientists observe the relationship between cause and effect and impose a meaning), but at the level of non-linear generative mechanisms that continuously interact with each other. It argues that this complex world of things and contingent tendencies constitutes the object of on-going scientific investigation (Harvey 2002). In addition, it argues that society is both the condition and the outcome of human agency, and human agency is both the production and re-production (or transformation) of society (Bhaskar 2009). Causal mechanisms are believed to reside in social relations and contexts as much as in individuals (Marchal et al. 2012). This makes critical realism a suitable knowledge paradigm for health policy and systems research, and studying CHW programmes in particular. It is important to measure CHW performance, but at the same time understand how this performance was reached.

CHW programmes have elements that could be researched through observation and measurement (hardware elements), but these elements are constructed and brought alive by actors through the meaning they attach to (their interpretation of) experiences (the software, see Figure 9.1) (Gilson et al. 2011; Sheikh et al. 2011). This resonates with the recent call regarding the importance of people-centred health systems and thus people-centred science, that takes into account that systems thrive on mutual trust, dialogue and reciprocity, and their effectiveness correlates with the strengths and nature of the relationships between all health systems actors (Sheikh et al. 2014b). When the research community complements questioning how things work from the sole viewpoint of the health sector with listening to the voices of CHWs and communities, we would be better
able to identify the mechanisms that can lead to improved CHW performance. Then, the benefit of CHWs' unique position between communities and the health sector could be optimized, and their role in achieving universal health coverage enhanced.
References


