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Designing for motivations in community-managed rural water supply

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Certificate of original authorship

I, Ian Cunningham declare that this thesis, is submitted in fulfilment of the requirements for the award of Doctorate of Philosophy (Sustainable Futures), in the Institute for the Sustainable Futures at the University of Technology Sydney.

This thesis is wholly my own work unless otherwise referenced or acknowledged. In addition, I certify that all information sources and literature used are indicated in the thesis. This document has not been submitted for qualifications at any other academic institution.

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List of acronyms

AACES	Australia Africa Community Engagement Scheme
ABCD	Asset Based Community Development
ACFID	Australian Council for International Development
ADC	area development committee
AI	appreciative inquiry
AMCOW	African Ministers' Council on Water
BPN	basic psychological needs
CADECOM	Catholic Development Commission
CBM	community-based management
CSDT	Center for Self-Determination Theory
CSO	civil society organisation
DC	District Commissioner
DFAT	Department of Foreign Affairs and Trade
DFID	Department for International Development
DRA	demand-responsive approach
DWDO	District Water Development Office
GDP	gross development product
GLAAS	Global Analysis and Assessment of Sanitation and Drinking-Water
GNI	gross national income
GoM	Government of Malawi
ICD	integrated community development
INGO	international non-government organisation
ISF	Institute for Sustainable Futures
JMP	Joint Monitoring Programme
KII	key informant interview
LGCD	local government and community development

M&E	monitoring and evaluation
MDGs	Millennium Development Goals
MGDS	Malawi Growth and Development Strategy
MoAIWD	Ministry of Agriculture, Irrigation and Water Development
MWK	Malawi kwacha (currency)
NCST	National Commission for Science and Technology
NGO	non-government organisation
NHMRC	National Health and Medical Research Council
NSO	National Statistics Office
O&M	operation and maintenance
ODA	official development assistance
OECD	Organisation for Economic Co-operation and Development
ORT	other recurrent transfers
PAR	participatory action research
RAI	relative autonomy index
RWS	rural water supply
RWSN	rural water supply network
SBA	strength-based approach
SDGs	Sustainable Development Goals
SDT	Self-Determination Theory
SRQ	self-regulation questionnaire
TD	transdisciplinary research
UN	United Nations
UNDP	United Nations Development Programme
UNICEF	United Nations' Children Fund
UTS	University of Technology Sydney
VDC	village development committee
WASH	water, sanitation and hygiene

WES Network	Water and Environmental Sanitation Network
WHO	World Health Organisation
WPC	water point committee
WPDx	Water Point Data Exchange

Village case study descriptors

The following table is included as a reference to help the reader navigate the six village cases and water committee member participants.

District and villages	Descriptor	WPC members and roles
Phalombe district villages	Villages in Phalombe district where CADECOM implemented integrated development projects using an asset-based community development (ABCD) approach. Boreholes were installed by CADECOM in each of these locations.	-
Helema	Village where the water point committee (WPC) had moderate efficacy. Members were relatively new, having replaced the previous WPC after corruption concerns.	Olivia (female,F), member Hendreson (male, M), member
Malekuwa	Village where the WPC had moderate efficacy. I have included a vignette from Cynthia who was from Malekuwa.	Cynthia (F), secretary Paul (M), chair
Nanchopwa	A village where the WPC had higher levels of efficacy. The water point was functional, but water salinity had led to some corrosion challenges.	Annie (F), secretary Francis (M), member
Blantyre district villages	Included villages in Blantyre district where CADECOM had implemented integrated development projects prior to adopting ABCD. Here they used a needs-based or 'top-down' approach.	-
Chilaulo	Village where Oxfam, not CADECOM, had previously installed the borehole. The management efficacy was low and relationship with users was poor.	Grace (F), member Esther (F), treasurer
Galufu	Village where Freshwater had previously installed the borehole. They also had shallow wells with handpumps. All were dry, the Freshwater borehole produced a minimal amount of water. The management efficacy was low.	Trish (F), member Charles, (M), chair
Nkhumba	A village where the WPC had higher levels of efficacy. The WPC were proactive and had access to an area mechanic. ABCD was introduced at this location part way through the relationship with CADECOM. However, no participants had memory of it. The borehole was installed by CADECOM.	Palesa (F), secretary Wisdom (M), chair

Thesis abstract

Malawi has achieved significant progress in rural water supply (RWS) coverage in the last 20 years. However, sustaining RWS services has proved difficult, compromising the health, economic, and education benefits associated with improved supply. As in most low-income countries, community-based management (CBM) is the dominant approach used in Malawi to manage RWS. In CBM, volunteer village water point committee (WPC) members are responsible for the operation and maintenance of RWS. The CBM model assumes a community's interest in sustained RWS will motivate them to take on management responsibilities. However, members' motivations have been oversimplified in academic and practice literature.

This doctoral research determined the drivers, nature and impacts of members' motivations. The research analysed: the types and quality of members' motivations; the influence of context, including an asset-based community development (ABCD) program approach, in shaping these motivations; and the implications of motivations for committees' management effectiveness. The research examined six WPC case studies in rural Malawi. Methods included semi-structured interviews, a borehole survey, and a motivation questionnaire. Self-Determination Theory, a theory of motivation, was used to explore motivation constructs. The theory proposes a continuum of motivation types determined by the degree to which behaviour is experienced as autonomous or controlled.

Most members' motivations were low to moderately autonomous. Higher-quality autonomous motives of WPC participation included the benefits of reduced water collection times, pro-social motives, and enjoyment associated with collaboration and opportunities to exercise initiative. Members' autonomous motivations were internalised, and associated with persistence and navigating management challenges. Controlled motives also drove members' participation, these included status-seeking, avoiding shame, and avoiding disappointing users and donors. Such motivations were lower quality, tenuous, and associated with feelings of pressure.

Autonomous motivations were supported by a positive WPC–user relationship, social and technical support from others, and the relevance of RWS to community development goals. These conditions supported members' psychological needs of autonomy, competence, and relatedness, and were a precursor to autonomous motivations. Regarding relevance, the ABCD approach helped participants endorse water projects. Participants contrasted the approach with top-down "imposed" projects, which along with an absence of district and development partner support, were reported as controlling and demotivating.

A nuanced understanding of motivations is critical in sustaining RWS services. Thesis findings point to the importance of approaches to CBM which support members' autonomous motivations. When this is done, members' internalised motivations are likely to result in both improved management outcomes and RWS services.

Chapter 1 Introduction

Improved access to quality drinking water is fundamental to well-being and an adequate standard of living. It brings a range of benefits such as time savings; health and nutrition benefits; and improvements in economic and education opportunities (Bartram & Cairncross, 2010; Hunter et al., 2010; Prüss-Üstün et al., 2008). Globally, basic access to water for rural populations – that is, a safe water supply within 30 minutes of homes, has increased from 69% to 80% between 2000 and 2015 (WHO & UNICEF, 2017a). Malawi has made significant progress in improving access to rural water, and met its 2015 national targets for RWS access under the Millennium Development Goals. Between 2000 and 2015, the percentage of the rural population with basic access to water increased from 46% to 63% (WHO & UNICEF, 2017a). Although progress is encouraging, a significant proportion of the rural population in Malawi still has poor access to drinking water, leading to considerable health and welfare impacts.

Most rural Malawians access their water via a communal borehole fitted with a mechanical handpump. Since the 1990s, management and maintenance for such water services have been almost entirely the responsibility of community users under an approach called community-based management (CBM). In CBM, a group of village-based volunteers forms a management committee, referred to in Malawi government guidelines as the Water Point Committee (WPC)[1] (MoAIWD, 2015b). WPCs are responsible for the operation and maintenance of boreholes, including enforcing rules for water collection and ensuring the boreholes remain hygienic and functional. The approach was thought to bring improvements in both the efficiency and scale of RWS management by transferring responsibility of management and repairs to those closest to the water source who have a vested interest in its maintenance – the users (Mansuri & Rao, 2012; Kleemeier, 2000). CBM remains the predominant approach to managing

[1] Village-level management structures are referred to by a variety of names depending on country. Further, their approaches to management can also vary within countries. For example, some complete O&M themselves while others may engage a third party, such as a handpump mechanic to undertake O&M. While acknowledging village-level operation and maintenance structures can vary, I continue to use the term WPC throughout this thesis for simplicity and to remain consistent with terminology used in MoAIWD guidelines.

rural water supplies (RWS) in Malawi and low-income countries globally (Schouten & Moriarty, 2003).

However, both globally and in Malawi, it has proved more difficult to sustain RWS than construct systems (Foster et al., 2020). There is growing evidence of CBM's shortcomings in sustaining supply, with an estimated 20–30% of boreholes in Malawi not functioning at any time (Water Point Data Exchange, 2015; Banks & Furey, 2016; Mwathunga et al., 2017; MoAIWD, 2012). The sustainability solutions that have been proposed in the academic and grey literature alike has largely been technocratic. These responses have focused on aspects like finance models, asset management, regulation, and institutional capacity to improve the sustainability of RWS systems. Although such technocratic responses are valuable, they do not consider the nuances of human experience and how they affect management efforts at the socio-technical interface.

The motivation of WPC members is one area that has received little attention. The absence of motivation research in the CBM literature is notable, considering its centrality to the CBM model. It is assumed that the vested interests of communities in having reliable water supplies is central to driving community-level management responsibilities (Carter et al., 1999; Lockwood et al., 2003; Moriarty et al., 2013). However, in research to date, members' motivations have been neglected or reduced to binary terms (motivated or demotivated). As will be discussed later in this introduction, such simplifications ignore the range of motivation types and qualities experienced by members, the impacts of members' motivations on their experiences of CBM, and their subsequent management approaches. A more nuanced approach that is focused on motivations will enable researchers to examine the extent to which current CBM approaches support high-quality, autonomous motivations. In addition, it will provide a basis for considering alternative approaches to CBM as part of RWS sustainability efforts.

Given this background, this research explores WPC members' motivations in the context of CBM and program design. I focus on the types and quality of members' motivations, how these motivations were shaped based on the village context and program design,

and the implications of motivations for both members' experiences of CBM and their management efforts. In focusing on program design, I critique CBM in general, and asset-based community development's (ABCD) potential to support participants' autonomous motivations. In ABCD, community members decide, plan and act on their own development goals using their existing assets; in contrast, externally-driven approaches often focus on deficits and needs. The academic and grey literature claims that the ABCD approach is motivating; however, to date ABCD has received little critical focus. I use Self-Determination Theory, a theory of motivation, to explore experiences of motivation in CBM, and to assess the motivational claims and mechanisms in ABCD to determine its relevance to future iterations of CBM.

The following sections of the introduction explore the context of CBM in rural Malawi in more detail. The chapter starts with an overview of CBM and its origins as part of a global agenda of decentralisation. I then outline the sustainability challenges of CBM in Malawi, firstly from a techno-managerial perspective, and secondly from a human-centric perspective. I focus on the motivations of those central to CBM – WPC members. This chapter does not discuss the broader Malawi country context. Instead, this topic is discussed briefly in Chapter 3 to situate the research in the broader country context.

1.1 The participation movement, community-based management and demand-responsive approaches to water supply in Malawi

Since the 1980s, CBM has been the main approach to RWS management used by governments and development partners in low-income countries (Harvey & Reed, 2007; Lockwood & Smits, 2011; Moriarty et al., 2013). In the 1980s, as with other thematic areas of development in low-income countries, it was acknowledged that many top-down RWS projects had failed. Low RWS coverage, limited confidence in the state, and the rise of participatory approaches, led to calls for a shift in responsibility for RWS management and maintenance from government and development partners to community end-users (Harvey & Reed, 2007; Katz & Sara, 1997; Lockwood & Smits, 2011; Moriarty et al., 2013).

In the RWS sector, this transfer of responsibility to community actors was further shaped by the United Nations (UN) International Drinking Water Supply and Sanitation Decade (1980 to 1990). The UN aimed for universal coverage during this period, and the decade coincided with an increasing number of critiques concerned with the limitations of top-down approaches to water service delivery, with a subsequent emphasis on the participation of community-level actors. This culminated in the New Delhi Statement (United Nations, 1992) in which community management was adopted as a guiding principle (Nicol et al., 2012). The subsequent Dublin Statement (United Nations, 1992) further focused on RWS management decisions being made at the "lowest appropriate level" (United Nations, 1992, n.p) and the involvement of community members, with an explicit focus on women, in the planning and implementation of RWS programs. Importantly, it also identified water as an economic good.

The shift towards CBM was part of a broader global trend in development in participatory approaches. These trends were in part driven by neoliberal ideology and development actors such as the World Bank (1992, 2001). It was argued that greater participation of community end users in RWS and other development projects would offer both instrumental and intrinsic value. Instrumental value was facilitated by incorporating local knowledge, increasing the relevance of projects to end users, improving program efficacy and efficiency, and offering the possibility to scale the delivery of development projects (including water projects) in rural and remote areas (Kleemeier, 2000; Mansuri & Rao, 2012). Intrinsic value was generated through the building of social capital at the local level, the promotion of pro-social behaviour, and the empowerment or rural communities (Mansuri & Rao, 2012). In essence, CBM provided community users with a say in development initiatives and their outcomes.

Globally, CBM is typically implemented as part of a demand-responsive approach (DRA) to RWS (Moriarty et al., 2013). In DRA, communities receive the RWS services they want. Demand is signalled by community commitment and participation in decision-making, pre-construction, and construction activities (Katz & Sara, 1997; Whittington et al., 2009). This includes participatory activities that elicit input into the location and type of RWS, and input into the management system used. The community also contributes

materials, labour and finance for the construction of infrastructure (Kleemeier, 2000; Katz & Sara, 1997; Whittington et al., 2009). The up-front commitments in this approach were designed to prevent the building of water systems in places where they were a low priority (Kleemeier, 2000). DRA is typically the precursor to CBM, and the two approaches are often integrated as is the case in Malawi. When new RWS services are implemented, ongoing management responsibilities are defined to secure village commitment. However, there are arguments for the separation of DRA and CBM. Some argue DRA is necessary for the equitable, relevant and sustainable operation of RWS systems, while CBM's efficacy in delivering sustainable RWS services has been questioned (Harvey & Reed, 2007; Katz & Sara, 1997). In Section 1.2 below, I discuss some of the sustainability challenges CBM faces in Malawi.

In Malawi, the participation movement was reflected in Malawi's Decentralisation Policy (GoM, 1998a) and the Local Government Act (GoM, 1998b). These policy instruments devolved administrative and political authority to the 28 districts which make up Malawi (refer to Figure 3), to local political leaders, and to traditional leaders (Nijaya et al., 2012). The decentralisation process formed part of the Government of Malawi's (GoM's) poverty reduction strategy, and included the decentralisation of RWS via the National Water Policy (MoIWD, 2007). Through the policy and subsequent national strategies and guidelines, the GoM devolved responsibilities for the ongoing operation and maintenance of RWS from government to the community level, as described by the Ministry of Agriculture, Irrigation and Water Development (MoAIWD:

> *In the past, the Malawi government took full responsibility of the O&M [operation and maintenance] of rural water supply facilities. However, this system was marred by numerous inefficiencies making it unsustainable. Without a strong presence in communities, these water supply facilities would often fall into disrepair, but also experience other issues such as catchment encroachment and vandalism. In response, the National Decentralization Policy, instated in 1998 by the Malawi Government, emphasizes community empowerment through a transfer of power and responsibility to local authorities. Since then, there has been an increasing emphasis on developing community ownership through the adoption*

> *of practices like Community Based Management (CBM) trainings (Ministry of Agriculture, Irrigation and Water Development, MoAIWD, 2015a, p. v).*
>
> *The rights of the communities to pursue their own objectives, set their own priorities and critically examine their own situation is given as the rationale for participatory approach. This goes beyond cost sharing in benefits to a process of co-operative action, learning and confidence building. The main aim here is community improvement through building capacity and requires a more proactive than reactive role from the beneficiaries. The communities need to take* ***full*** *[my emphasis] responsibility towards management, operation and maintenance of their facilities for both the water supply and sanitation (Ministry of Water Development, now MoAIWD 1998, pp. 4–5).*

The language used by MoAIWD is significant. First, it reflects the purported instrumental and intrinsic benefits of community participation described earlier. Second, the transfer towards "full" community responsibility emphasised the limits of government's role in supporting community managers. Like other low-income countries, Malawi has subsequently relied almost completely on CBM as the management model to deliver RWS. Recent national census data (NSO, 2019) found 75% of the rural Malawi population access their water via a communal borehole (i.e. a drilled or dug well) fitted with a handpump. If managed at all, these boreholes are managed almost exclusively under the CBM approach.

Although approaches to CBM can vary, in Malawi, village-level operation and maintenance roles are generally undertaken or co-ordinated by a group of community volunteers – the WPC. The WPCs are the central actors in the CBM model, and ideally are in place in the early stages of borehole implementation (MoIWD, 2010). The committee typically consists of up to 10 residents, usually from the village in which the borehole is located. Government guidelines suggest committee members should be democratically elected and include specific roles (typically chair, secretary, treasurer, and general members), and at least 50% should be women (MoIWD, 2010; MoAIWD, 2015b). The government approach to installing boreholes is shown in Box 1, and a full

list of WPC responsibilities is shown in Box 2. In sum, the WPC roles include collecting water tariffs from users, enforcing rules for water collection, and ensuring the borehole remains hygienic and functional through regular maintenance and repairs.

In line with global trends, in Malawi, the demand-responsive approach (DRA) was adopted to underpin the CBM model. In practice, the approach to implementation of both DRA and CBM is inconsistent. Although DRA is referenced in Malawi's National Water policy (MoIWD, 2007), the policy provides limited guidance on its implementation. Grey and academic literature suggests DRA implementation in Malawi is fragmented and inconsistent (Baumann & Danert, 2008; Chowns, 2014; Lockwood & Kang, 2012). For example, Ministry of Irrigation and Water Development[2] guidelines (2010) describe an expected community cash and labour contribution amounting to 5% of capital costs, with at least half in the form of cash. The more recent operation and management (O&M) guideline series (MoAIWD, 2015b) discuss capital contributions, but are not specific on the amount. Similarly, previous research (e.g. Baumann & Danert, 2008; Chowns, 2014) found variable approaches to cash, labour and material contributions to capital works. Such variability creates confusion and inconsistent standards for communities, donors and district staff (Baumann & Danert, 2008; Chowns, 2014; Lockwood & Kang, 2012).

The management arrangements of water points under CBM in Malawi also vary. Previous research has cited inconsistent approaches of both government and NGO actors regarding the implementation of CBM (Baumann & Danert, 2008; Oates & Mwathunga, 2018). Training can be non-existent or mixed, variable models of financial and technical management are presented, and there is often limited follow-up support or monitoring beyond the initial establishment and training of WPCs (Baumann & Danert, 2008; Chowns, 2015b; Oates & Mwathunga, 2018; Lockwood & Kang, 2012). In addition, WPC management arrangements can change with time. For example, actual management arrangements may include the ongoing involvement of a few motivated members of the WPC (Whaley et al., 2019), as opposed to a gender-balanced WPC with

[2] The original name for MoAIWD.

specific roles. Or, WPCs may action maintenance based on need rather than schedule, despite the latter being suggested in GoM guidelines. Further, WPC members may adjust their approaches in response to their experience and the village context. Whaley and Cleaver (2017, p. 59) describe this dissonance between supposed formal WPC roles (as listed in Box 2) and reality as an "incongruity between [CBMs'] bureaucratically-informed model and the *modus operandi* of village life".

Box 1: GoM approach to borehole implementation

According to government guidance (MoIWD, 2010), the implementation of RWS borehole projects involves the following steps:

- Communities orientated by district staff on rural water supply programs including CBM approach
- Community demand signalled through raising of capital contribution, the application for, and opening of, a bank account, and the request is escalated via village and area development committees[3]
- Desk and field verification of application by district
- Pre-selection and shortlist of priority villages, notification to applicants
- Community mobilisation and planning by community with district support (e.g. training of WPCs, preparation of management plan, identification of roles)
- Implementation plan and schedule by district
- Construction, procurement of contractors, installation by contractors with district and WPC supervision
- Operation and maintenance, managed by WPCs and supported by area (i.e. borehole) mechanics and suppliers

Box 2: CBM in Malawi policy, strategy and guidelines

CBM policy and strategy has been operationalised in the Rural Water Supply Operation and Maintenance Series of documents[4] ('O&M Series', MoAIWD, 2015a). Based on these documents, community and WPC member responsibilities are as follows (MoAIWD, 2015b):

Community

[3] I expand on the role of Village and Area Development Committees in Chapter 3.

[4] These are technical documents which include guidelines, implementation manuals, training manuals, handbooks and tools which superseded several historical GOM guidelines and manuals.

- Assess community need and request assistance
- Attend community meetings
- Elect members of WPC
- Choose type of water facility and site
- Mobilise physical resources (land, sand, stone, bricks) and capital contribution for infrastructure
- Agree on facility maintenance
- Provide communal labour and local materials for construction of water facilities where required
- Agree and adhere to rules for use of new or old water supply facilities
- Maintain a clean environment around the facility
- Participate in hygiene and sanitation promotion
- Protect catchment areas
- Protect water and sanitation facilities
- Monitoring the water and sanitation facilities

WPC

- Conduct community meetings on plans or problems in regard to water supply
- Lead the community in planning and assist in construction
- Take responsibility to operate and maintain new and existing facilities
- Raise and manage funds and other resources for the water point
- Keep records of meetings, money raised, money spent and repairs
- Hire and sign contracts with area mechanics and other service providers, supervising and monitoring their activities and signing off on completed work
- Organise maintenance and repairs carried out by caretakers and other service providers
- Organise communal labour for site cleaning and maintenance
- Facilitate education and planning on water, sanitation and hygiene and other cross cutting issues including HIV and AIDS, gender and environment
- Monitor and evaluating activities and analyse results and using these to improve management
- Purchase hand pump spare parts for repairs from selected spare parts retail shops.

Despite the near total adoption of the CBM model, an increasing body of grey and academic literature argues that the approach may need rethinking, firstly to consider other models of RWS delivery, and secondly to improve existing approaches to CBM (Chowns, 2015b; Harvey & Reed, 2007; Hutchings et al., 2015; Katz & Sara, 1997; Lockwood & Smits, 2011). In the following section, I outline the RWS context in Malawi, including Malawi's progress in improving access to RWS; sustainability challenges of RWS; and the GoM and their development partners' policy mechanisms, budgeting, and expenditure approaches relevant to RWS.

1.2 Sustaining rural water supply gains in Malawi: challenges and sector responses

Under the CBM approach, Malawi has seen significant improvements in water access for the rural population over the last 15 to 20 years. Water access in Malawi has increased, and Malawi exceeded its 2015 Millennium Development Goal (MDG) target of 74% access to an 'improved' water source (Ministry of Finance, Economic & Ministry for Planning and Development, 2015). I acknowledge the term "improved sources" does not factor in collection times and refers to sources with "the potential to deliver safe water by nature of their design and construction [and] include piped supplies … and non-piped supplies such as boreholes, protected wells and springs, rainwater and packaged or delivered water" (WHO & UNICEF, 2017a, p. 12).

Subsequent changing definitions by WHO and UNICEF of what constitutes adequate access to RWS complicates national targets. The 2022 target of 87% of the population having 'basic access' (GoM, 2017), refers to water sources which have the potential to deliver a safe supply within 30 minutes, or which are less than 500 metres from the user's residence. These targets are harder to achieve than historic improved access goals associated with the MDGs. Joint Monitoring Programme (JMP) data reported *basic* access to water supply increased between 2000 and 2015, from 46% to 63% for the rural population (WHO & UNICEF, 2017a). Relative to neighbouring nations (shown in Table 1), progress in access to RWS in Malawi has been high. However, Malawi is unlikely to meet its 2022 basic access targets (GoM, 2017). Consequently, with 84% of

the population living in rural areas, a large portion of the country remains without access to a safe, proximal water service.

Table 1: Malawi and regional changes in basic access to RWS between 2000 and 2015

	% rural population who have basic access to RWS[A]	
	2000	2015
Malawi	46	63
Mozambique	7	32
Tanzania	21	37
Sub Saharan Africa	29	43

A: Data from JMP (WHO & UNICEF, 2017a)

Consistent with global trends, national RWS targets in Malawi are further at risk due to sustainability challenges.[5] Globally, it has become evident that sustaining RWS infrastructure is more difficult than the construction of new systems (Harvey & Reed, 2007; Lockwood & Smits, 2011; Schweitzer & Mihelcic, 2012). Functionality is often used as a proxy indicator for sustainability. It refers to whether a water point is delivering water at a particular time. There are some inconsistencies in national figures on handpump functionality in Malawi, though they are generally in the range of 70 to 80%. The Water Point Data Exchange ('WPDx' 2015) indicated 70% of handpumps in Malawi were functional in 2015.[6] Similar figures were reported by MoAIWD (2012) and UPGro (Mwathunga et al. 2017), while RWSN figures from 2016 (Banks & Furey, 2016) reported functionality as 79%.[7] By comparison, sub-Saharan Africa functionality levels were estimated to be between 66 and 80% (Foster et al., 2020). Further, functionality in Malawi in 2004 was reported as 76% (The World Bank, 2013). This suggests that although RWS coverage in Malawi has improved over the past ten to 15 years, functionality has remained relatively constant.

[5]I have adopted Lockwood and Smits' (2011, p. 24) definition of sustainability as an "indefinite provision of a water service with certain agreed characteristics over time".

[6] There are several limitations to WPDx data described on their website. One of them is that the fact data for each handpump or water point is uploaded over time, and hence the collective data may not represent an accurate 'snapshot' of functionality.

[7]NSO and ICF (2017) data reported that approximately 82% of rural population had water available. That is 82% of users reported there had been no interruptions for longer than a day in the previous two weeks from either a handpump or piped water source. Note that access is people-focused (i.e. ability to access a supply) and different to functionality which is technology-focused (i.e. if a handpump is working or not). The two are often confused in the literature.

The estimates of 70 to 80% functionality in Malawi may also be inflated. Functionality as defined above is criticised for being overly simplistic (Bonsor et al., 2018; Carter & Ross, 2016; Whaley & Cleaver, 2017). If definitions are expanded to consider yield (flow rate greater than ten litres per minute), reliability (downtime less than 30 days per year), and suitable water quality, functionality rates in Malawi may be closer to 40% (Mwathunga et al., 2017). Low functionality rates reflect a limited ability to maintain RWS systems. They represent a wasted capital investment, and importantly a burden for users who may have to revert to unsafe water sources.

The blame for low functionality is often directed at community managers themselves, and their failure to manage and maintain systems. GoM RWS implementation documentation noted "lack of ownership and community involvement were the paramount problems in sustainability" (Ministry of Water Development, 1998, p. 1). Some argue this is a politically convenient response and ignores the suite of factors which impact sustainability (Chowns, 2014; Lockwood & Smits, 2011). For example, research in Malawi and other sub-Saharan nations has found the quality of the initial borehole installation and construction (Chowns, 2014), the handpump type, the implementing organisation, proximity to urban centres and system age (Foster, 2013) as significant determinants of functionality. Hence, the exclusive focus on WPCs' sense of ownership is both misguided and an indication of an abdication of responsibility by those with power and resources, namely government and development partners.

Recent research has emphasised the importance of the broader system[8] necessary to drive the expansion and sustainability of RWS. An example of the actors in such a system is shown in Figure 1. The World Bank[9] (2017) reviewed "good practice" of RWS management systems in 16 countries (Malawi was not included) and across diverse approaches to management including CBM, self-supply, the private sector, local government, and public utility supplies. The research identified five categories of

[8] For example, the Sanitation and Water for All partnership and the Agenda for Change Coalition.
[9] Other relevant literature includes Lockwood and Le Gouais (2011); Lockwood and Smits (2011); Willetts (2012); Moriarty et al. (2013); Smets et al., (2017), and Whaley and Cleaver (2017).

building blocks important for effective RWS services, these being: institutional capacity, asset management, financing, monitoring and regulation, and water resource management, (The World Bank, 2017). As the scope and breadth of these building blocks suggests, ensuring the sustainability of RWS is a complex challenge. To move towards 100% access to RWS requires much more than investment in infrastructure (i.e. handpumps installed) and 'community ownership' (AMCOW, 2010). Instead, an approach to RWS as a system is necessary. It needs to be an approach in which multiple actors in the sector, including WPCs, interact and execute their responsibilities to deliver and sustain RWS. In the next section I discuss Malawi's national approach to sustainability.

Figure adapted from Moriarty (2017)[10]

Figure 1: Typical actors in an RWS system

1.2.1 'Building blocks' of rural water supply in Malawi

[10] Some icons from https://www.flaticon.com/authors/freepik

In this section I describe the key policy and strategy documents which shape Malawi's approach to RWS, followed by a discussion of budgeting and expenditure in the RWS sector. The last section outlines the flow (or lack thereof) of funding to districts.

Policy and targets

Malawi's RWS service is transitioning from a project- and donor-driven approach to a programmatic approach coordinated at the national level (AMCOW, 2011; Lockwood & Kang, 2012). The African Ministers' Council on Water (AMCOW) (2011) ranked Malawi in the top five of 22 African countries in regard to the enabling environment for RWS, with policy and planning relatively strong compared to other nations. In terms of national governance and budgets, water, sanitation and hygiene (WASH) is centrally controlled by the Ministry of Agriculture, Irrigation and Water Development (MoAIWD), with aspects of sanitation and hygiene within the scope of Ministry of Health (MoH).

The GoM's Growth and Development Strategy III 2017–2022 (MGDS III, 2017) is the overarching national development strategy for Malawi. WASH budgets are required to align to the national strategy. The Ministry of Finance is responsible for ensuring this alignment and for setting budget limits, though the MoAIWD is able to identify priority areas and table the WASH budget. The MGDS III (GoM, 2017) has two national 2022[11] targets relevant to rural water supply:

1) Ensuring 89% of the rural population has access to an improved water source. As discussed, an improved water source is a protected source (e.g. piped supply into house or plot, a communal standpipe, a protected well, a rural borehole, a protected public well, tanker water or bottled water).
2) Ensuring 87% of the rural population has access to an improved source, within 500 metres or 30 minutes' walk.

Joint Monitoring Programme (JMP) definitions remain a subject of debate; however, they are generally the accepted standards for water service levels in the RWS sector.

[11] The World Bank Water sector investment plan (2012) references government 2030 targets for rural water. As these are not discussed in other government strategy documents I have used figures from MGDS.

The two GoM targets[12] listed above are approximately equivalent to JMP definitions of 'improved' (target 1) and 'basic' (target 2) water supply[13] (WHO & UNICEF, 2017a). As mentioned above, the basic target is more difficult to achieve. Regarding baseline levels for basic access, there are discrepancies between the MGDS and JMP data. The MGDSIII cites 2016/17 baseline basic levels of 26% compared to 67% in JMP data (WHO & UNICEF, 2017a).

The 2005 Malawi National Water Policy (MoIWD, now MoAIWD 2007) operationalised the current and former GoM growth and development strategies. WASH tends to be integrated with other national priority areas at the policy and ministerial levels. Hence, the National Water Policy includes irrigation, fisheries, tourism and hydro power, and the remit of MoAIWD spans agricultural activities (including water for agriculture) and water for domestic uses. Although this presents some opportunity for a more holistic outlook for WASH, in practice WASH has historically been a lower priority than agriculture (Chowns, 2014). The Water Policy outlines overall goals in the RWS sector, describes monitoring and evaluation arrangements, clarifies roles and responsibilities, and sets national objectives. However, the Policy lacks currency and only extends to 2010. In the following section, I discuss GoM budgeting and expenditure on RWS.

National budgeting and expenditure

Before discussing RWS budgeting and expenditure in Malawi, I make two clarifications on the data sources and information provided. First, Malawi provided financial data to the widely accepted 2018 UN Global Analysis and Assessment of Sanitation and Drinking Water (GLAAS) report (World Health Organisation & UN-Water, 2019). However, this data is not as detailed as the data I present below from UNICEF (2018, 2019), which provides a breakdown and financial analysis on an annual basis. Because of this I have

[12] The target 2 figure for basic access in the MGDS III also differs from those presented in the MoAIWD Sector Performance Report: Irrigation, Water and Sanitation (2012).
[13] Basic access in JMP (WHO & UNICEF, 2017a) include a source that has potential to deliver safe water and where collection time is less than 30 minutes, including queuing time. It does not include distance. JMP define an improved source as either piped water, boreholes or tubewells, protected springs or dug wells, rainwater, and packaged or delivered water (WHO & UNICEF, 2017a).

used the UNICEF data[14]. Second, the figures presented below are for water supply, sanitation and hygiene collectively. Based on low government expenditure on sanitation, the figures presented below are indicative of the GoM water supply expenditure. MoH budgets in 2018/19 were the first to include a line item for sanitation and hygiene, although allocations in 2018 were only 5% of those recommended by the GoM's Health Sector Strategic Plans (UNICEF, 2019). As a result, water supply comprises the majority of WASH expenditure in GoM budgets. In addition, it is not surprising that more progress has been achieved in RWS, than in sanitation where improvements have been moderate (WHO & UNICEF, 2017a) .

GoM WASH expenditure is low, with the majority directed towards RWS infrastructure. It is estimated WASH received US$35.7 million[15] or 1.52% of the GoM total budget in 2019/20, equivalent to 0.44% of GDP (UNICEF, 2020). This compares with a historical range of 0.93% and 6.73% of the national budget since 2012 (UNICEF, 2020). I was unable to source data showing how funding was split between capital and O&M in 2019/20. However, in 2017/18, WASH capital costs consisted of 96% of the total WASH expenditure, with minimal (<1%) amounts spent on operation and maintenance (O&M) (UNICEF, 2018).

Current RWS expenditure is below what is required to meet national targets. The World Bank's WASH Sector Investment Plan report (2012) estimated that Malawi needed to spend over US$2 billion between 2011 and 2030 to reach improved access to RWS for 98% of the population. This included US$430 million for RWS, with 3% of this capital investment needed for ongoing O&M (The World Bank, 2012). These estimates assume a target of universal, improved access to rural water by 2030. Current and recent budget allocations have been approximately a quarter of what is needed to reach this target (GoM, 2020; UNICEF, 2019).

[14] There are some discrepancies between the GLAAS and UNICEF analysis. The GLAAS report estimated government expenditure was US $42.1 million rather than US $32.1 million, it also attributed a higher percentage of the expenditure to government as opposed to external donors.
[15] Based on 1 USD = 735.760 MWK on 8/8/2020

The GoM WASH program in Malawi relies heavily on overseas aid, and a significant portion of the expenditure mentioned above is funded through official development assistance (ODA). Over 93%[16] of WASH sector development costs are met by donors, with the remaining 7% funded by the GoM (UNICEF, 2019). It is not clear in the literature what percentage of the remaining 7% consists of tax revenue. The GoM's reliance on ODA is indicative of historical trends. Since 2012 the GoM expenditure on WASH has tended to remain steady and insignificant compared to ODA-supported WASH (UNICEF, 2019, 2020). As a result, the funding of RWS targets in Malawi remains tenuous in the absence of a significant domestic revenue scheme. The reliance on uncertain ODA funds makes the GoM's long-term planning and strategy regarding RWS coverage and sustainability more difficult. Sustainability is further compromised by limited resourcing of O&M at the district level, as I discuss below.

Partial decentralisation of resources to districts

Following decentralisation, districts in Malawi became responsible for many of the national government's activities which supported the sustainability of RWS. The district's responsibilities now include the coordination of RWS activities within the district in collaboration with donors and local structures (area development committees), the training of WPCs, monitoring and evaluation of RWS and supporting other structures such as area mechanics and spare parts suppliers who play important roles in RWS sustainability.

Despite a national policy rhetoric of decentralisation, in reality, decentralisation to districts has only been partly achieved. Much of the administrative burden of RWS has been transferred to districts, but power and financial resources remain centralised at the national level (Oates & Mwathunga, 2018; Lockwood & Kang, 2012). As noted above, current funding levels for O&M are low. In addition, O&M is often not explicitly listed in national budgets or investment plans (WES Network 2020). As a result, the flow

[16] The GLAAS report estimated external sources (such as donors and NGOs) and repayable loans as 30% of the total government WASH budget (World Health Organisation & UN-Water, 2019). The difference with UNICEF figures was significant. Based on the most recent MoAIWD estimates from 2016, it is likely the GLAAS figures are underestimates. The discrepancy may be due to differences in how ODA has been allocated. For example, if donor funds were channelled through government structures this would reduce the external source allocation and increase the government allocation.

of money to districts is low. In 2019–2020 only 10% of the national WASH budget was allocated from MoAIWD to District Water Development Offices (DWDOs) – the district agencies responsible for RWS), up from less than 1% in 2016–2017 (Battle & Mambulu, 2017; UNICEF, 2019). The significant increase was primarily due to a new Borehole Fund introduced in 2018/2019. However, this allocation remains low. By comparison the health sector allocated approximately 30% of the national health budget to districts in 2012 (Lockwood & Kang, 2012).

Budget lines referring to 'other recurrent transactions' (ORT) are typically used by districts to fund O&M. The current average ORT fund is estimated at 20 Malawi Kwacha (MK20[17], or US$0.03) per capita annually (GoM, 2020). This figure represents a significant shortfall, it is estimated a minimum of MK1600 (US$2.17) per capita is required to fund district water responsibilities and support the maintenance of existing infrastructure (GoM, 2020). Wahba and colleagues (2017) estimated that an increase in funding of 40% per year between 2016/17 and 2034/45 was required to enable districts to undertake their three most important tasks – providing support for WPCs and water point monitoring, supporting and supervising area mechanics, and supporting and supervising water users' associations.

The limited funding of DWDOs has been criticised as contributing to the poor functionality rates described earlier in this research (Battle & Mambulu, 2017; Lockwood & Kang, 2012; Oates & Mwathunga, 2018). Coupled with an estimated 60% vacancy rates across the sector and low district staff capacity (Baumann & Danert, 2008; Oates & Mwathunga, 2018), district staff do not have adequate resources to monitor and support WPCs. To highlight how this translates into practice, Lockwood and Kang (2012, citing Chiweza, 2011) reported on the state of eight DWDOs. They found four offices were without a vehicle, six had limited internet access and all lacked basic water monitoring equipment. In some cases district staff could not afford the fuel to visit water points to support WPCs and conduct monitoring (Bawi Consultants, 2018;

[17] Conversions to USD based on 1 USD = 735.760 MWK on 8/8/2020.

Lockwood & Kang, 2012; Oates & Mwathunga, 2018). As a result, most WPC support from districts (and NGOs) stops after the initial water point has been installed.

As discussed, districts also have a responsibility to play a coordination, linking and training role for donor-based projects. Ideally, this means they coordinate donor activities to reduce project overlap, target priority locations for RWS projects, link donors to local structures such as area and village development committees (discussed later in Section 3.4), and provide WASH training for donor-funded projects. However, this assumes DWDOs have the capacity and capability to deliver this service.[18] Their lack of resources limits the ability for DWDOs to execute such duties, and reduces their ability to resource long-term national or district strategies.

Instead districts are often responding to short-term donor agendas and transient project funding. In addition, donors often bypass district structures either because DWDOs lack the capacity to engage, or because donors simply choose to implement projects independently and sideline government structures (Baumann & Danert, 2008; Boulenouar et al., 2017; Oates & Mwathunga, 2018). This has further undermined the authority and capability of districts to undertake their roles.

Box 3: District responsibilities according to Malawi's National Water Policy

The Malawi national water policy (MoIWD, 2007, p. 18) outlines just four points regarding the district responsibilities regarding water supply. They are to:

- *Plan and co-ordinate the implementation of water and sanitation programmes at local assembly level;*
- *Solicit funding for implementation of water, sanitation and environment programmes;*
- *Collect, process, analyse and disseminate relevant data and information to all stakeholders within the water sector; and*
- *Promote private sector and NGO's participation in the delivery of water supply and sanitation services.*

[18] I refer readers to forthcoming PhD research from Oates (N. Oates, personal communication, 13 March 2018).

The limited financial flows from central government suggest point two could be interpreted as soliciting funding from non-government sources. The absence of consistent and sufficient funds has made the execution of these other responsibilities difficult.

Despite these challenges, there are several examples of positive changes in policy and approaches at the national and sub-national levels which have contributed positively to sustainability. I outline three such approaches below in the following section.

1.2.2 National and sub-national strengths in sustaining supply

Malawi's standardisation of handpumps is one example of an initiative which has contributed to sustainability. The Afridev pump has been endorsed by the GoM (MacArthur, 2015; Baumann & Danert, 2008) and is the most common and preferred mechanical pump in Malawi (Holm et al., 2017). The Afridev was designed in such a way that it could be repaired by communities themselves (Arlosoroff et al., 1987). The adoption of the Afridev has supported economies of scale for infrastructure, simplified maintenance documentation and training, and supported a wide network of spare parts suppliers across Malawi (Baumann & Danert, 2008; de Saint Méloir, 2009; McNicholl, 2011). In selected districts in Central and Southern Malawi, InterAide has supported suppliers of spare parts, and in some cases negotiated minimal stock levels and standard prices for parts (de Saint Méloir, 2009). Hence, spare parts proximity and pump quality are generally less of a concern than in other countries.

The mapping of water points is also a relative strength of RWS sustainability. In Malawi, a number of substantial mapping projects have been conducted since 2003, across multiple platforms (Baumann & Danert, 2008; A. Miller et al., 2018). Over 125,000 water points, which include boreholes, have been mapped in Malawi (nationally) with functionality data for just over 80% of these points (mWater, 2020). Mapping has supported assessment of RWS progress, and encouraged targeted investment in expansion and maintenance. It has also acted as a tool to challenge political influence and track water quality disease risks (A. Miller et al., 2018; Oates & Mwathunga, 2018).

Although, further work is needed to integrate such mapping tools into GoM and district planning and address the challenges to its use and upkeep by government staff.

At a district level, area mechanics are also an important innovation. They provide maintenance support to village WPCs. Area mechanics are local entrepreneurs trained to provide fee-for-service support to WPCs, and they either undertake maintenance or carry out repairs. To date, their establishment and success appears to be contingent on NGO support, with notable programs from InterAide, the African Bank for Economic Development in Africa, and UNICEF which have supported the establishment of area mechanic networks and support systems (Baumann & Danert, 2008; Rijsdijk & Mkwambisi, 2016). Grey and academic literature indicates that area mechanics are a promising option, and that they have provided an important backstop and support option for WPCs in the absence of ongoing support from government or development partner actors (Chowns, 2015b; Nekesa & Kulanyi, 2012).

1.2.3 Reforms of RWS and CBM

Despite such initiatives, limits to functionality in Malawi and beyond have led to questions about the future of CBM. Chowns (2014, 2015b, 2017b) surveyed 276 respondents from 24 villages in Malawi, and argues that CBM has failed to provide regular maintenance or adequate repairs, and has failed to collect necessary funds – all fundamentals of the CBM approach. Based on these findings, she called for CBM to be replaced by alternative models (Chowns, 2017a).

Suggested reforms to CBM extend beyond Malawi. However, generally, the views expressed about CBM by other scholars and practitioners are more moderate than those expressed by Chowns, and tend to focus on both a wider range of management models in addition to CBM, alongside reforms rather than replacement of CBM (Moriarty & Verdemato, 2010). Suggested reforms have included a more professional approach to RWS, and additional financial, technical and managerial support to CBM actors, in particular post-construction support as I described earlier (Hutchings et al., 2015; Moriarty & Verdemato, 2010; Lockwood et al., 2003; A. Miller et al., 2018). In addition, there are recommendations for policy support and regulatory support, as well

as a move towards agreed standards and accountability measures in the CBM model (Lockwood & Le Gouais, 2011). Alternative management structures to CBM include private or public sector models, or self-supply as opposed to the current over-reliance on CBM (Harvey & Reed, 2007; Lockwood & Le Gouais, 2011; Sutton, 2006). Such reforms are usually described as CBM plus, indicating the next iteration of the CBM model.

In Malawi, many of the challenges faced by the water sector are systemic. Patronage networks have taken precedence over the state's responsibilities to its citizens, hindering the efficacy of policies in a variety of sectors including water (Booth et al., 2006; Oates & Mwathunga, 2018). Government funding flows are often determined by patronage or short-term political interests rather than need which I discuss in more detail in Section 3.3. In addition, low district capacity as described above (Lockwood & Kang, 2012; Oates & Mwathunga, 2018), the emphasis on community responsibility, and a focus on new installations rather than sustainability (UNICEF, 2018, 2019) have meant WPCs have few options for ongoing support.

While recognising the importance of an institutional and governance focus on RWS sustainability discussed above, such approaches often fail to consider the nuances of human experience and human drivers within the RWS system. I am in agreement with Whaley and Cleaver (2017, p. 63) who view historical approaches to addressing RWS and CBM sustainability as largely a "techno-managerial exercise". In part, this is a legacy of disciplinary silos. RWS has historically been dominated by the discipline of engineering, albeit with an increased focus on the intersection of rural water supply with areas such as gender equality and human rights. Hence, technocratic solutions often lack a nuanced understanding of the psychological experience of the different actors shown in Figure 1. This is a critical oversight and it ignores the messiness of human experiences at the people-CBM/RWS interface. Approaches which do not pay due attention to such experiences risk being poorly equipped for addressing sustainability issues.

On human experience, this research focuses on the motivations of those who currently share most of the responsibility for managing RWS in Malawi – the WPC, shown intentionally in the centre of Figure 1. The following section, Section 1.3, takes a step back to examine the participatory roots of DRA and CBM. It unpacks how participation and DRA and CBM are currently delivered, the implications for the WPC and broader community experience, and potential implications for RWS management efforts. This sets the scene for the focus of this research – a more detailed analysis of the experiences and motivations of WPC members as primary actors in CBM programs. Although the experiences of other supporting actors (e.g. district staff, national government etc.) associated with CBM are also important, this doctoral research focuses on the WPC members.[19]

As DRA and CBM tend to be integrated in policy and practice in Malawi, from this point on, for the sake of simplicity I do not distinguish between the two approaches, except when their distinction is necessary for the analysis. Hence, I use the general term CBM to include both DRAs and inception phases and ongoing management under CBM. The following section returns to where I started this introduction. I examine some of the core assumptions of participation and CBM, and how these may reflect on the experiences and motivations of WPC members.

1.3 From systems to people

As discussed at the beginning of Section 1.1, the global adoption of participatory approaches in development increased the responsibilities held at the local level, while reducing the accountability of the state and donors. In the case of Malawi and RWS, the transfer of responsibility to community actors was significant (Chowns, 2015b). As mentioned above, according to GoM guidelines, community-level actors "need[ed] to take full responsibility towards management, operation and maintenance of their facilities" (Ministry of Water Development, 1998, p. 5). Users' responsibilities included bearing 100% of O&M costs (Ministry of Irrigation and Water Development, 2010;

[19] For a more detailed analysis of other actors, I refer the reader to the political economy research of Chowns (2014) and Oates and Mwanthunga (2018).

MoAIWD, 2015b) while districts are not responsible for providing any financial support, even in the event of major breakdowns (MoIWD, 2010). Indeed at times community members are also asked to pay the fuel costs of district staff when their assistance is needed (Baumann & Danert, 2008).

Clearly, the success of the CBM model is largely reliant on the motivation of community actors to drive management responsibilities. However, motivations in CBM have received little attention in grey and academic literature. When motivations are discussed, they are often oversimplified and framed in binary terms (motivated or demotivated). It is assumed community members' vested interests in having a sustained water supply, coupled with participatory activities (e.g. involvement in decision-making on the type, level, location and governance of the RWS system; and community contributions of material, labour and cash) will motivate ongoing management responsibilities (Carter et al., 1999; Lockwood et al., 2003; Moriarty et al., 2013)

Simplistic assumptions concerning motivations also fail to consider the role of both community context and RWS program design in shaping a diversity of members' motivations. In a community context, political and social dynamics within communities are significant but oft neglected factors which impact community-led initiatives such as CBM. As water is a contested resource, it can create conflict within communities and between WPCs and users (Cunningham et al., 2019). For example, tariff collection as part of WPC duties can be a source of tension and conflict between WPC members and users (Chowns, 2014, 2015a). A poor WPC–user relationship can provide a disincentive for members to collect tariffs and discourage users' cooperation regarding their responsibilities for borehole management such as following rules associated with the water point (Chowns, 2014, 2015a; Domínguez et al., 2019; Hutchings et al., 2015). In addition, some have argued that fundamental assumptions of CBM, which include community cohesion, community willingness and ability to form institutions, and volunteering of time, are 'myths' based on idealised notions of rural communities (Rural Water Supply Network (RWSN), 2010; Harvey & Reed, 2007; Moriarty et al., 2013). Such assertions highlight notable complications to WPC motivations to simply vested interest in an improved supply.

Indeed, the general term 'community' used in grey and academic literature, and in this thesis, disguises the diversity of groups, relationships, agendas and power dynamics within communities. Such diversity has significant implications for the equity of the different stakeholders. It influences the level of influence individuals or groups may have with respect to water management (Van Koppen et al., 2012; Carrard et al., 2013). Although I continue to use the term community throughout this research for simplicity, I acknowledge its shortcomings in reflecting such diversity and its implications.

Variable program design of DRA and CBM between implementing agencies also impacts participants' experience, and hence motivations. Ownership is often considered the driver of management responsibilities in the RWS academic literature, and hence it is often considered a proxy for motivation. One of the few studies on the influence of ownership on RWS was conducted by Marks and Davis (2012) in Kenya. They found there was a threshold effect for cash contributions, beyond which users reported having a sense of ownership of a RWS system. Households who contributed US$50[20] or more expressed a sense of ownership whereas those who contributed a tokenistic amount did not (Marks & Davis, 2012). By contrast, the study found labour contributions had only a moderate contribution to a sense of ownership. The research findings were significant in demonstrating not all participatory activities are equal in their effects. Sense of ownership outcomes differed in response to material participatory activities.

In addition to *what* participatory activities are done, *how* implementing agencies engage with community actors has an important effect on participants' experiences. Organisational agendas of NGOs and governments can affect the level of control and ownership afforded to community-based organisations (Narayan-Parker, 1995). For example, upward accountability to donors to meet timelines and budgets, and to achieve predetermined results, can skew external agencies investment in and approach to participation (Cooke & Kothari, 2001; Mansuri & Rao, 2012; Neely & Walters, 2016).

[20] Equivalent to one month's income for participants (Marks & Davis, 2012).

These potentially competing agendas have implications for the level of decision-making and control which community actors have. In such cases, participation can be tokenistic or focused on efficiency rather than empowerment outcomes. I discuss the effects of external agendas on motivations later in Section 6.5.

Such variable approaches highlight the need for a nuanced understanding of what participation means for both the implementing organisation and the so-called participants. Mansuri and Rao (2012) categorise participation as either ‘induced’, externally-driven; or 'organic', the latter referring to instances where motivations to participate are internalised within the participant or community. Induced participation presents complications when agencies attempt to hand over ownership to participants, when participants’ motivations are not necessarily internalised as is likely the case in organic types of participation.

Similarly, Arnstein’s (1969) seminal 'ladder of participation', provided a useful metric to qualify participation types and possible framings of RWS interventions. Arnstein (1969) outlined a spectrum of participation from tokenistic (informing, consulting or placating citizens) to participation at the level of citizen power (delegated power by citizens and/or direct citizen control). White (1996) built on Arnstein’s work, and distinguished between what participation meant for the implementer and the participants based on their different motivations and agendas. White (1996) defined four types of participation, for the implementer these were nominal (for display), instrumental (for objectives such as efficiency), representative (for voice) and transformative (for empowerment). Such nuance is usually absent in references to participation, and the spectrum that Arnstein and White propose offers a somewhat sobering reflection on the use and abuse of the term ‘participation’. They highlighted the diversity of "form, function, and interests within the catch-all term [of] participation" (White, 1996, p. 7).

ABCD approaches to development are one means of program framing and delivery which aims for transformative participation as per White’s model. An ABCD approach was central to three of the case study sites which form the focus of this research.

Hence, I touch briefly on the approach as a precursor to a more detailed discussion and analysis of ABCD and its motivational mechanisms later in Section 6.5 and Chapter 7.

1.3.1 Asset-based community development and motivations in participatory approaches

ABCD was popularised in the 1990s via the seminal work of Kretzmann and McKnight (1993). They criticised community development practices whose dominant paradigm framed communities as problems which needed to be solved. They, along with other ABCD practitioners and scholars, argue that such approaches perpetuate perverse incentives including an emphasis on the identification of problems in order to secure funds. The problem-focus has resulted in the formulation of fragmented and often ineffective solutions to development challenges, a reliance on outside assistance, and an internalised sense of helplessness (i.e. de-motivation) (Kretzmann & McKnight, 1993; Willetts et al., 2014).

ABCD provides an alternative approach which philosophically views communities and people as sources of strengths and potential rather than as problems to be solved. It views the capacities of local people and their associations as being necessary to progress lasting community development. Practically, in an ABCD process, community members determine their own development goals and then identify, organise and mobilise their assets to work towards achieving these goals (Kretzmann & McKnight, 1993; Mathie & Cunningham, 2003). Assets are considered broadly and include categories such as individual skills and personal qualities, associations, natural resources, physical and economic assets, and cultural and spiritual values. The change of orientation from deficits to assets is considered a transformative reframe, which can challenge an internalised sense of powerlessness associated with traditional deficit approaches (Mathie et al., 2017, p. 56; Mathie & Cunningham, 2005). These assets are then mobilised towards achieving development goals. The limited ABCD literature argues that this focus on strengths and self-identified goals is motivating and a driver of more sustainable change processes compared to external approaches to development (Kretzmann & McKnight, 1993; Mathie et al., 2017; Mathie & Cunningham, 2003; UN-Habitat, 2008; Willetts et al., 2014).

Although ABCD approaches claim to offer an alternative to externally-driven development, the fact remains that many of the claims concerned with ABCD lack critical analysis. There are three main critiques of ABCD. First, the approach is criticised for its focus on community actors driving development, leaving the obligations of state actors unchallenged. Second, it takes an optimistic view of community, and although power dynamics within communities are acknowledged, they often remain unchallenged (Friedli, 2013; Gray, 2011; MacLeod & Emejulu, 2014). Third, it has largely been developed through practice rather than research meaning much of the evidence base is largely anecdotal and lacks a constructive critical lens. In addition, ABCD is context dependent: its focus depends on community goals and available assets. As a result, it has been difficult to compare or generalise findings across studies. Hence, the evidence base of ABCD is fragmented, with some claiming the ABCD academic literature is yet to capture change processes in a meaningful and consistent manner (Friedli, 2013; Gray, 2011). This extends to the relationship between ABCD and participant motivation. The motivational mechanisms of ABCD interventions and participatory processes are superficially understood, and motivational claims currently lack nuance.

The discussion above points to the variable ways participation can be implemented by external agencies and experienced by participants in community-driven. A change in focus from what participatory practices are used towards human experience and behaviour in CBM, adds an additional level of complexity in understanding what leads to lasting RWS services. However, I see this change in focus as necessary, given that participatory approaches such as CBM/DRA are predicated on material approaches which aim to promote empowerment and provide a psychological ‘sense of’ or ‘feel of’ ownership. The experiences of participants matter within this context. A focus on this area necessitates a return to core assumptions which underpin participation (and CBM): that vested interests and participation promote a sense of ownership and a commitment to manage water systems. As part of reforms of CBM, such assumptions need to be interrogated as part of a nuanced approach to understanding participation. This is, in addition to the system-scale responses I described in Section 1.2.

This sets the scene for the focus of this research on WPCs' motivations. The following section outlines my research agenda, including the research questions. In Chapter 7, I return to further examine the underlying principles and motivational claims and mechanisms of ABCD approaches.

1.4 Research agenda and research questions

The context described above suggests that an understanding of human-centred experiences and motivations is important to inform future RWS interventions. In response, the objectives of my research are the following. First, I aim to determine what motivates WPC members to participate in WPCs. Second, I aim to identify how these motivations were shaped in the context of participatory approaches (namely ABCD), and the CBM community context. Third, I examine what implications these motivations have for management practices in CBM.

These objectives are investigated through a case study approach across six villages in rural Malawi, where RWS was implemented by a non-government organisation (NGO) and water was subsequently managed under CBM arrangements. In three of the six villages, an ABCD approach was used by the implementing NGO to frame RWS interventions.

I draw on Self-Determination Theory (SDT), a theory of motivation, and mixed-methods research to investigate the motivations of WPC members. SDT is an established and tested theory, with its seminal literature cited close to 50,000 times. The theory is used as a framework to determine the type and quality of members' motivations, and the contextual drivers of these motivations. SDT proposes a continuum of motivation types determined by the degree to which a behaviour is motivated by a sense of autonomy or a sense of being controlled (Ryan & Connell, 1989). I discuss these motivation types in more detail later in Section 2.3, briefly, autonmous motivations are internalised and are characterised by a sense of volition, well-being and persistence (Deci & Ryan, 2000). By contrast, controlled motivations are driven by internal or external contingents and experienced as being pressured (Deci & Ryan, 2000). Repeated SDT research has shown

that people are more likely to experience autonomous motivations when their basic psychological needs are satisfied by their social environments (Deci et al., 1999; Ng et al., 2012). These needs, and the theory, are explored further in Chapter 2 and Chapter 7 as part of a more detailed analysis of the theoretical framework which features throughout this research. SDT provided a suitable framework for examining the drivers of the motivations and motivation experiences of WPC members, and how these motivations influence management approaches. In this thesis I distinguish 'motivation types' from 'motivation experiences'. The former refers to the categories of motivations as defined in SDT literature (e.g. autonomous compared to controlled types which I discuss further in Chapter 2). The latter refers to members' lived experience of motivations, the subjective 'why' of their behaviour.

Given the objectives listed above, my research responds to the following four research questions:

1. What motivated members to continue to participate in the WPC, and were these motivations autonomous or controlled?
2a. What aspects of the motivational climate were significant for WPC motivations, and how?
2b. From a theoretical perspective, does ABCD support autonomous motivations, and if so, how?
3. How did the quality of WPC members' motivations influence their management efficacy?

In the following section I describe the scope boundaries of this doctoral research in responding to these research questions. Later in Section 4.7 I discuss design limitations to the research.

1.5 Scope of the research

I recognise that the limits of the current CBM model has resulted in justified calls for a greater diversity of approaches to deliver RWS. Although I see value in comparing how

different management models support or hinder autonomous motivations and subsequent RWS outcomes, such analysis does not form part of this doctoral research. This research focuses on motivations within CBM only, and motivations within this context are not compared with those found in alternative delivery approaches to RWS (e.g. self-supply or privately supplied water).

As described above, within the context of the case studies, I examine the significance of the ABCD approach used by the NGO. Indeed, the original aim of this research was to explore the role of ABCD in supporting autonomous motivations in RWS. In three of the case study sites, the ABCD approach framed the engagement and participation of community members more broadly. However, the direct application of ABCD to ongoing RWS management was limited, and as I discuss later, WPC members had little exposure to ABCD or recall of the approach. Hence, my claims about the motivational mechanisms and potential of ABCD are largely theoretical. The case studies are used to provide a grounded example of ABCD principles and SDT motivation constructs rather than a weight of evidence of the efficacy of ABCD in supporting autonomous motivations. In addition, judgements about the role of ABCD in promoting autonomous motivations in RWS are speculative.

Further, I acknowledge the importance of other actors' motivations in supporting improvements to RWS and increasing its sustainability of RWS. However, I limit the focus to exploring the motivations of WPC members only. Finally, the exploration of motivations and motivational climate focuses on immediate factors (i.e. the day-to-day environments of WPC members) identified as significant by WPC members. Previous SDT research suggests more subtle and insidious factors are also likely to shape the motivational climate and motivations of WPC members. Such factors include pervasive cultural (e.g. Chen et al., 2015), economic (e.g. Kasser et al., 2007) and political contexts (e.g. Chirkov & Ryan, 2001). However, these factors are generally considered more moderate in their motivational effects compared to an individual's immediate context such as task design and interactions with others in the course of the role. Because of this more moderate effect, these factors are not a focus of this research.

As I describe later in the research design (Chapter 4), I use SDT to critically assess the motivational mechanisms and claims of ABCD. However, the research does not seek to extend or build on SDT. My focus was the application of SDT rather than testing and developing the theory itself.

Finally, in my examination of water supply, SDT and ABCD, I deal with multiple academic disciplines. This has meant compromises on depth of engagement in each discipline. Although I have covered the fundamentals of each area, this coverage will inevitably be incomplete due to time and space restrictions.

In the following section, I summarise the thesis structure.

1.6 How the thesis is structured

In Chapter 2, I expand on the SDT, the theoretical framework for this research, introduced above. In Chapter 3 I describe the country background to the research. In Chapter 4 I discuss the research design and introduce the six case study villages which were the focus of this research.

Chapter 5 is the first of four findings chapters. It answers Research Question 1. I present and discuss the different motivation types and their prevalence for each member. Chapter 6 is concerned with Research Question 2a. I outline and discuss the program design and village contexts (i.e. the motivational climate) which were significant in shaping members' motivations. Chapter 7 continues with the theme of motivational climate and responds to Research Question 2b. This chapter has a theoretical focus. I use SDT as a framework to determine if and how ABCD might support more autonomous motivations. An ABCD approach was used to frame RWS programs in three of the six villages which formed the focus of this research. I discuss the principles, application and contentions of ABCD, based on academic and grey literature. I also expand on the background of SDT presented in Chapter 2. Chapter 8 is the last of the findings chapters. In this chapter I answer Research Question 3, discuss the efficacy of each WPC, and draw links to the quality of their motivations.

In Chapter 9 I discuss the theoretical and practical implications of the research findings for RWS researchers and practitioners. I make recommendations on basic psychological need (BPN)-supportive approaches to CBM design. In Chapter 10, I summarise the research findings that have been discussed and propose areas for further research.

1.7 Chapter summary

In this chapter I introduced the focus of this research, the motivations of volunteer WPC members in Malawi who are responsible for the management of RWS. To situate the research, I explained the role of global trends of decentralisation and participation paradigms in shaping the near universal adoption of the CBM model to manage RWS. Following, I discussed the status of RWS in Malawi. There have been impressive gains in RWS access over the last 20 years in Malawi, but infrastructure functionality has continued to be neglected and problematic. Contributing factors to poor sustainability include a focus on new infrastructure at the expense of sustainability, a shortage of resources at the district level and associated limited technical, managerial or financial post construction support to CBOs from government and the NGO sector. In sum, the flow of responsibility to the district and community level has not been matched with a flow of resources.

I then described critiques of the CBM approach, and subsequent recommendations for reforms of CBM. These included improvements and professionalisation of CBM, along with a greater diversity of approaches to RWS management. Such calls have not yet gained traction in Malawi policy and practice, and CBM remains the principal model to manage RWS in Malawi. I also discussed the dominance of technocratic approaches to conceptualising and addressing functionality and sustainability in CBM. Lastly, I outlined the importance of a person-centric focus which explores the experiences of actors, and how their experiences influence, and are influenced by RWS management practices. This provided the context for the research agenda and scope presented in the last sections of the chapter.

In the following chapter I discuss the theoretical framework used to explore motivations.

Chapter 2 Theoretical framework: Self-Determination Theory

In the previous chapter, I introduced Self-Determination Theory (SDT) as the theoretical framework I used to analyse motivation constructs. In this chapter, I outline the core concepts of SDT in more detail. I discuss different motivation types as defined in SDT and their relationship to the satisfaction of BPNs. This discussion provides context of SDT for the reader, before I outline in Chapter 4 the integration of SDT into the research design. Most of this chapter is taken from a journal article which I co-authored. The article has been accepted pending revisions. The article addresses Research Question 2b: "from a theoretical perspective, does ABCD support autonomous motivations, and if so, how?". The remainder of the article forms the bulk of Chapter 7. Minor edits of the article have been made to assist with readability and coherence. The acknowledgement of publication for this chapter and Chapter 7 is included in Appendix A.

2.1 An introduction to SDT

SDT is a meta theory of motivation which originated in psychology and has developed over 30 years to become one of the most accepted theories of motivation. SDT proposes a continuum of motivation types differentiated by the degree of an individuals' sense of autonomy and internalisation associated with the behaviour in question (Ryan & Connell, 1989). Autonomy is fundamental to SDT and is defined as a feeling of being the origin of one's behaviour, as opposed to feelings of being controlled or pressured (Ng et al., 2012). Compared to controlled motivations, autonomous forms of motivation are considered more internalised, while SDT meta-analysis research has found autonomous motivations to be associated with experiences of wellness, performance and persistence (Deci et al., 1999; Yu et al., 2018).

SDT has been applied and tested in a diverse and growing range of domains such as education (e.g. Chirkov, Ryan, et al., 2011), healthcare (e.g. Ng et al., 2012), organisations (e.g. Slemp et al., 2018), sports and exercise (e.g. Owen et al., 2014), goals (Deci & Ryan, 2000), well-being (e.g. Ryan, Huta, et al., 2008), and environmental issues

(e.g. Pelletier et al., 1998). Academic research has shown SDT constructs to be relevant across multiple countries and cultures, both collective and individualistic (Chen et al., 2015; Chirkov, Ryan, et al., 2011; Gagné et al., 2015; Sheldon et al., 2004).

There is only a limited amount of SDT research in an international development and low socio-economic context (e.g. Alkire et al., 2000; Sayanagi et al., 2019; Sayanagi & Aikawa, 2016; van Egmond et al., 2017). In addition, SDT has been criticised for abstracting motivation constructs from the messiness of people's social contexts, and limiting the voice of participants through an almost exclusive reliance on quantitative measures (Chirkov & Anderson, 2018; Wisniewski et al., 2018). I discuss these critiques in more detail later in Section 7.6.1. Contexts like Malawi are likely to present unique challenges in applying SDT. For example, low literacy levels for some participants, and significant power differentials between researchers and participants, mean that existing SDT measurement tools (discussed later in Section 2.3.1) and approaches associated with the theory will need adaptation. However, researchers argue that the SDT concepts described below are universal and applicable across cultures (Yu et al., 2018; Chen et al., 2015; Chirkov, Ryan, et al., 2011). The most difficult challenge is likely to be not demonstrating the relevance of SDT but deciding how best to adapt SDT concepts and tools to contexts like rural Malawi.

In the following section I discuss the relationship between basic psychological needs (BPNs) and autonomous motivations in SDT. I then discuss motivation types and measurement approaches in Section 2.3.

2.2 Basic psychological needs in SDT

BPNs are central to how motivations are determined. SDT assumes that humans are by nature inherently engaged. It assumes they pursue interesting activities and social connectedness, and they seek situations to apply their capacities (Ryan & Deci, 2000b, p. 200). Such pursuits are essential to eudaimonic well-being[21] and human growth in the

[21] Eudaimonic well-being is concerned with the realisation of human potential (Ryan & Deci, 2001).

form of self-development and learning (Ryan, Huta, et al., 2008; Ryan & Deci, 2000a; Vansteenkiste et al., 2010). However, for these experiences to unfold, the satisfaction of BPNs is needed to energise these innate aspects of human nature (Haerens et al., 2016). The SDT literature proposes three universal BPNs which can be observed and quantified. These are: autonomy (as defined above), competence (the ability to express one's capacities and effect change in the external environment) and relatedness (a feeling of being cared for, and a sense of trust towards others) (Ryan & Deci, 2002). Ryan and Deci (2000b) describe BPNs as analogous to water, light and soil for plants. They are necessary psychological nutriments for human flourishing.

Multiple empirical studies in SDT have found that satisfaction of BPNs contributes to self-endorsed, high-quality forms of motivation, and well-being outcomes (Deci et al., 2017; Ng et al., 2012; Ryan, Patrick, et al., 2008; Gagné & Deci, 2005). Conversely, the frustration of BPNs can produce low-quality motivation and ill-being. Importantly, SDT maintains that autonomous motivations are contingent on the degree to which an environment (e.g. workplace, school, health care intervention) and subsequent social relations help or hinder the satisfaction of all three BPNs autonomy, competence and relatedness. For example, a teacher who uses authoritarian means to control student performance is likely to hinder both the relatedness and autonomy of their students. I use the term 'motivational climate' from SDT literature (Ames, 1995; cited in Keegan et al., 2009) to capture aspects of an individuals' context which shape their BPN satisfaction and consequently their motivations. Hence, interventions and interactions can be designed to support autonomous motivations through a motivational climate which supports BPN satisfaction.

2.3 Motivation types

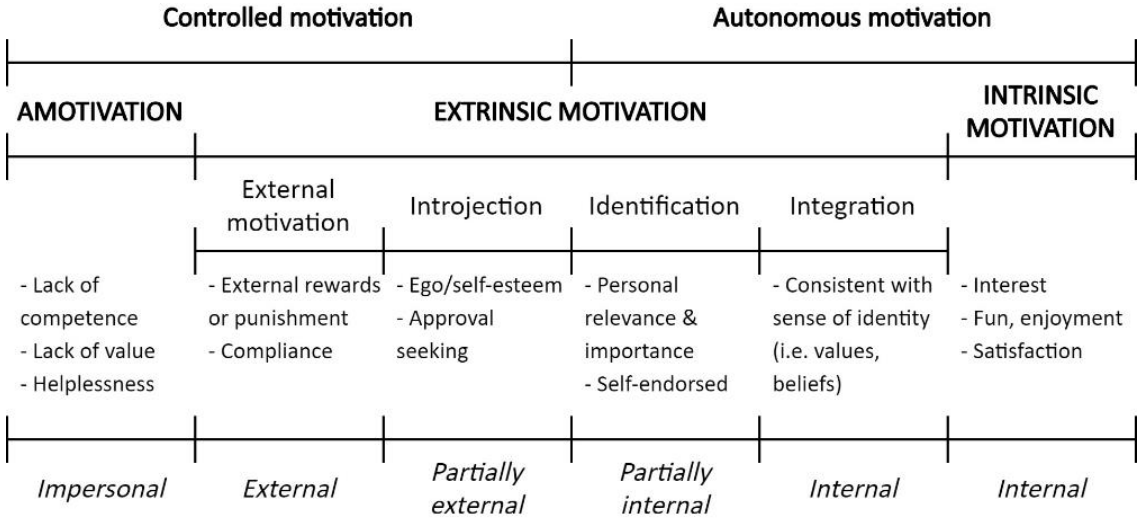
In the following section, I explore six motivation types as defined by SDT. They are intrinsic, integration, identification, introjection, external, and amotivation types which exist on a continuum from more to less autonomous as shown below in Figure 2. I use experiences of Malawi research participants to illustrate each motivation type.

Intrinsic motivation is considered the most autonomous, and hence the optimal, motivation in SDT. Empirical research has associated intrinsic motivation with well-being, performance outcomes and persistence of behaviour (Deci et al., 1999; Yu et al., 2018). In typical experiences of intrinsic motivation, behaviours are inherently satisfying, fun or interesting. Thus, an intrinsically motivated activity is performed for its own sake. For example, a water committee member in Malawi noted "I enjoy working in the committee as I learn a lot about water". In intrinsic motivation, the perceived cause of a behaviour is highly autonomous and thus internal. The activity has interest or enjoyment for the individual, the individual's capacities are being used, and the behaviour itself is the reward (Ryan & Deci, 2002; Sheldon et al., 2017). As seen in Figure 2 below, intrinsic motivation is a type of broader category of autonomous motivations. Actions that arise from autonomous motivations are self-endorsed, aligned with personal values, or hold inherent interest.

In extrinsic motivations, the 'why' of behaviour is separate to the behaviour itself. The behaviour is not necessarily considered fun or interesting, as with intrinsic motivation. Figure 2 shows the four categories of extrinsic motivation. From most to least autonomous, these are integration, identification, introjection and external motivation. Integrated motivation, although extrinsic, is perceived as originating from the sense of self and hence is highly autonomous. In this experience, the individual has self-endorsed the behaviour, integrated the behaviour with other internalised values and goals, and the behaviour forms part of a sense of self-identity (Gagné & Deci, 2005; Ryan, Patrick, et al., 2008). For example, a volunteer community mobiliser in Malawi said, "I am part and parcel of this community, because I live here, and I love it ... [hence] I serve the same community ... it is [my] personal choice to serve the community". Like intrinsic motivation, integration is associated with persistence of people's behaviour, as the behaviour (including any associated uninteresting tasks) is part of the individual's identity.

Behaviour driven by identified motivations is valued, accepted and personally important (Gagné & Deci, 2005). For example, when describing their motivation to volunteer, a water committee member in Malawi said, "people know that water is life. If the

borehole stops functioning, it will bring challenges to the users … they will have to access water from the old water source. Therefore, I want to repair and maintain it the same day". Although less internalised than both intrinsic motivation and integrated motivation, identified motivation is still considered autonomous, and hence it is associated with persistence, positive performance and well-being outcomes.



Adapted from Ryan & Deci (2000b) with permission

Figure 2: SDT motivation continuum

Introjected and external motivations are controlled forms of extrinsic motivation. In controlled motivation, behaviour is motivated by a sense of external pressure from self and others (e.g. "I have to or …." or "I should …"). In introjection, motivations are regulated by internal pressure. Typical examples include behaviours controlled by shame or pride (Deci et al., 2017). Perls (1973, cited in Deci & Ryan, 2000, p. 236) described it as "swallowing regulations whole without digesting them". For example, a volunteer described their motivation to take part in a water committee, as "I am hardworking … and committed to my work, so I do not want to disappoint the people". Although the motivational drive for the behaviour is inside the person, it is only partially internalised; hence, the motivations are still controlled (Ryan & Deci, 2000b). Recent literature (e.g. Sheldon et al. 2017) has distinguished introjected regulation into two types – avoidance (avoiding loss of self-worth, e.g. shame) or approach-based introjection (seeking self-worth, e.g. pride). The latter is viewed as the more positive motivation. This is based on limited evidence which suggests avoidance introjection

leads to more negative performance and poorer well-being outcomes for people when compared to approach motivation (Assor et al., 2009; Sheldon et al., 2017). Introjected behaviour is unlikely to be associated with longer-term adherence of behaviour and is experienced as moderately pressuring, as a sense of volition is reduced compared to identified motivation, or not present.

Motivation is external when a behaviour is motivated by the desire for an external reward or to avoid punishment. This includes compliance with societal or workplace pressures to please or avoid upsetting others. For example, a village head (i.e. chief) in Malawi described his motivation to take part in development projects: "since it has […] been donated as a community development project, I accept it. And people do participate in those projects, although not happily ... because it is a development [project] that they have just received". When important others (development agencies in this example) use their authority to offer rewards or punishments, they may foster external motivation (Sayanagi et al., 2018). Such approaches can stimulate motivation; however, it is often of poor quality. It brings feelings of pressure and is unlikely to be sustained once the external reward or punishment is removed.

Amotivation is the final motivation type, it is experienced when a behaviour is not valued, or there is a perceived absence of competence associated with the behaviour. In the former case, the individual no longer cares for, or understands the reasons for, the behaviour. For example, a water committee member commented, "it happens that others [NGOs] just impose the project. As a result, I hardly feel ownership ... For instance, if [the water point] has broken-down, I [do] not care to maintain it". In theory, amotivation is an absence of motivation, nonetheless, I refer to it in this thesis as a motivation type. With competence-driven amotivation, there is a belief the individual cannot effect change, or they see the behaviour as irrelevant to the change (Ryan et al., 2011). In Malawi, this was often associated with perceived low resources. For example, one participant said, "on our own we cannot manage [to repair the borehole], because it's extremely expensive to install … we are just depending on the well-wishers […] to help … we have not done anything to solve this problem". In both types of amotivation,

there are experiences of ill-being and a lack of intention to act. People are passive actors, or do not act at all (Gagné & Deci, 2005; Ryan & Deci, 2002).

In summary, if practitioners are interested in an individual's efficacy, perseverance and well-being, an understanding of both autonomous and controlled motivation types are critical. As described earlier, BPN satisfaction supports autonomous motivations, and is associated with greater persistence, performance and well-being (Chirkov & Ryan, 2001; Ng et al., 2012; Ryan & Deci, 2000b, p. 200). Later in Section 4.5 I discuss how I use these concepts to respond to research questions concerned with WPC members' motivations. Meanwhile, in the following section I discuss quantitative methods typically used in SDT research to measure motivation constructs.

2.3.1 Measurement of SDT concepts

The bulk of SDT's empirical findings are founded on Likert-style questionnaires that have been rigorously tested for validity. The questionnaires provide a codified means to test and measure individual and social contexts, and how they interact to influence behaviour. These validated quantitative measures provide means to assess: individual tendencies towards autonomous, controlled or amotivated motivation; people's intrinsic and extrinsic life goals; people's sense of BPN satisfaction; and practitioners'[22] support of peoples' BPNs. As noted earlier, these questionnaires have been tested in various environments, such as classroom, work and health contexts (e.g. Chen et al., 2015; Ridgway, 2017; Sheldon et al., 2017).

I elaborate on the self-regulation questionnaire (SRQ) from the SDT literature as it was used in this research to evaluate motivation types, as I describe later in Section 4.5.3. The SRQ questionnaire determines the degree to which a behaviour has been internalised (i.e. is autonomous) or not (i.e. is controlled). The questions ask about the significance of various 'whys' for a behaviour, with possible reasons reflecting intrinsic, identified, introjected, external, or amotivational reasons. For example, "because I

[22] I use the general term practitioner to describe the important other in the relationship with participant. For example, it may be a teacher, parent, health practitioners, boss etc. Their support refers to the nature of the role and interaction. For example, a teacher's support for students may include framing the work required, listening, and providing feedback.

would feel guilty or ashamed of myself if I did not [do the behaviour]" reflects introjected regulation, while "I do the [behaviour] because it is very important for being as healthy as possible" reflects integrated regulation (Sheldon et al., 2017, p. 1235). Appendix E includes the SRQ used for this doctoral research.

SDT recognises that multiple forms of motivation for a behaviour can coexist. For example, a volunteer may be motivated by both a sense of care for others, and a concern about how he or she is perceived by others. Increasingly, integrated regulation is not included in SRQ measures. Previous research has found integrated regulation difficult to measure via self-reporting and difficult to separate statistically and conceptually from identified and intrinsic regulation. Hence, it is often omitted from the SRQ (Gagné et al., 2015; Roth et al., 2009; Sheldon et al., 2017).

There are limited qualitative studies in SDT, in addition there are few applications of SDT which focus on low-income contexts. As I discuss later in Section 4.5.2, I used SDT to analyse interview responses from participants in addition to using the quantitative SRQ measure described above. Hence, I see this research as a contribution to exploring how SDT can be adopted to define motivations in a participatory, community development context. In Chapter 7 I explore the philosophical foundations and approaches to knowledge inherent to SDT in more detail as part of a journal publication. I also critique SDT's over-reliance on quantitative tools. In Chapter 7, I also examine SDT's relevance to the low-income, community development context and apply it to test the motivational claims and impacts of ABCD approaches.

2.4 Chapter summary

In this chapter I outlined the main concepts of SDT and the use of the theory as the theoretical framework used in this research. I introduced the concepts of BPNs of autonomy, competence and relatedness. These three needs, and their satisfaction or thwarting, mediate an individual's motivations. I also outlined the continuum of motivation types as defined in SDT research. The continuum includes a range of motivations distinguished by the degree to which a behaviour is internalised and thus autonomous. More internalised motivations are more autonomous (i.e. volitional as

opposed to controlled) and are associated with well-being and efficacy. Because of this, more autonomous motivations are considered high-quality motivations. More controlled motivations are less internalised or external, and they are associated with ill-being and lower performance outcomes. In the last part of this chapter I discussed the SRQ used in this research to measure motivation constructs, specifically motivation types. In the next chapter, I take a step back to explain the geographic and social context of Malawi to provide further country background for the research before discussing the research design in Chapter 4.

Chapter 3 Background on the Malawi context

In this chapter, I briefly outline the country background of Malawi to further situate the research and orientate readers unfamiliar with the country context. I first summarise the geographic and social landscape of Malawi, and the influence of donors in funding and shaping RWS in Malawi. Building on Chapter 1, I then discuss the national and local governance structures relevant to the RWS sector, elements which shape WPC management practices and motivations. In this thesis, the term 'context' or 'WPC context' refers to the social, political, economic, and geographical environment in which the WPC members live, and manage water in. The SDT derived term 'motivational climate' refers to elements of the WPCs' context which shaped their BPN satisfaction and thus their motivations. In this chapter I touch briefly on the theoretical relationship between the (broader) Malawi context and motivational climate. In Chapter 6, I focus on proximal elements of the motivational climate relevant to the case study WPCs, and the impact of the motivational climate on members' motives.

3.1 Geographic and social context

Malawi has a population of 17.6 million (NSO, 2019), consists of three regions and 28 districts and is bordered by Tanzania, Mozambique and Zambia border (refer to Figure 3). With a land mass of 118,000 km^2, Malawi is one of the smallest African nations by area. The wet season typically lasts from November to March. Rainfall peaks in January, and in the wet season monthly rainfall is between 150 and 300 mm (McSweeney et al., 2010). Climate change assessments have found no significant changes in total rainfall since 1960 (McSweeney et al., 2010), though monthly rainfall patterns have become more erratic (Simelton et al., 2013; Thulu et al., 2017; Wood & Moriniere, 2013). In Box 4 below, I have summarised key socio-economic indicators of Malawi.

Box 4: Snapshot of socio-economic indicators from Malawi

- Population of 17.6 million increasing at 2.9% p.a. (NSO, 2019)

- The median age in Malawi is 17 years (NSO, 2019)
- 84% of people live in rural areas (NSO, 2019)
- Malawi ranks 170 of 188 on Human Development Index (UNDP, 2016)
- 34% of people live on less than US$1.90 / day (The World Bank, 2010)
- 72% of men and 69% of women are literate (NSO, 2019)
- Average landholding has fallen from 1.5 ha to 0.8ha, between 1968 and 2010 (Wood & Moriniere, 2013)
- 90% of people rely on rain-fed agriculture (Thulu et al., 2017)
- Agriculture, forestry and fishing account for 73% of total employment. Women make up 59% of agriculture labour force (NSO, 2019)

The country's poverty, high population density, variable rainfall patterns, and reliance on rain-fed agriculture (Sutcliffe et al., 2016) mean Malawi is vulnerable to climate change and natural disasters. Droughts and floods are common, and in 2016 and 2017 Malawi experienced an El Niño-related drought throughout most of the country. Climate change modelling predicts an increase in the frequency of hot days (McSweeney et al., 2010; Wood & Moriniere, 2013) and a more intense and later onset of the wet season. The impacts of these changes on RWS are uncertain. In 2016, over 87% (WHO & UNICEF, 2017b) of rural Malawians relied on groundwater for domestic water use, but limited groundwater monitoring data and climate change research make it difficult to generalise on the extent to which climate change will affect groundwater supply (Robins et al., 2013).

3.2 Donors in Malawi

Since colonisation, external development assistance has heavily influenced Malawi. Despite high historical levels of donor assistance, the long-term efficacy of aid to Malawi is questionable (Booth et al., 2006; Wroe, 2012). Nonetheless, OECD (2018) records show aid to Malawi has generally increased over the last 50 years. Net official development assistance (ODA) was US$1,243,000,000[23] in 2016, equivalent to 23.6% of

[23] These values are the net total ODA, ODA is essentially 'Aid' funding.

gross national income (GNI) and US$68.7 per capita (OECD, 2018), with over 50% of ODA for education and health (OECD, 2020).

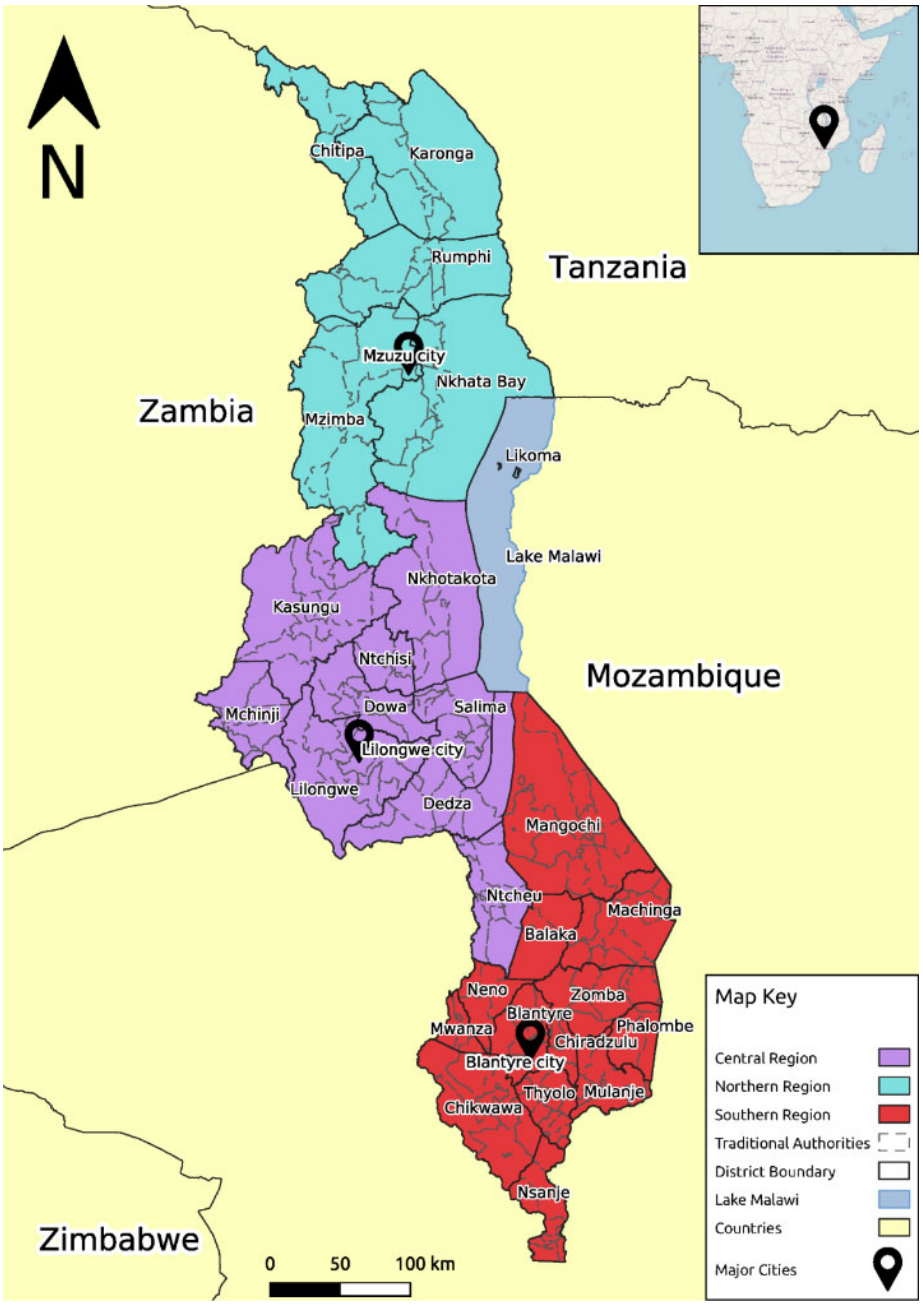


Figure 3: Location of Malawi and districts

Both donors and government alike have lacked a unified agenda in Malawi in regards to RWS (Taylor, 2014). The relationship between the national government and donors is complex and at times conflictual. In response to a significant and public government corruption scandal referred to as 'Cashgate' (Masina, 2014), many donors reduced or

froze aid in 2013, this included funding to RWS programs (Boulenouar et al., 2017; O'Neil et al., 2014). Questions concerning the reliability of government have meant some donor organisations are reluctant to contribute to national government budgets and RWS basket funds, and instead deliver directly to districts, or they provide direct RWS program funding (Oates & Mwathunga, 2018). The result has led to some fragmentation in RWS delivery and project-based approaches to RWS rather than a coherent national strategy. However, recent trends suggest a sector-wide approach to RWS is starting to emerge, characterised by increased collaboration between government and donors (Battle & Mambulu, 2017; Oates & Mwathunga, 2018; Sindani, 2016).

Coordination with district government and donors has also been mixed. As I discussed in Chapter 1, inadequate resources at the district level make long-term planning difficult. The reliance on donor funds means district are often responding to and accommodating short-term donor agendas rather than delivering a long-term, RWS strategy (Baumann & Danert, 2008; O'Neil et al., 2014). District staff interviewed as part of this research indicated major development partners mostly coordinated their (donor) programs with the district. However, they still complained that some organisations and political aspirants bypassed district structures to implement programs without district consultation. This has led to disparate approaches across districts and at times poor quality boreholes with no management structures.

In the following sections I discuss national culture, traditional and formal governance structures, and how they come to bear on RWS management.

3.3 Patronage and traditional and formal governance

Malawi's hierarchical culture reflects in both gendered RWS roles at a community level and reliance of the less powerful on others to address RWS challenges. There is a large power distance between citizens and leadership, meaning authority is concentrated and dependency normalised (Booth et al., 2006). The more powerful control resources and status, they also protect weaker members of society (Booth et al., 2006; Hofstede

Insights, 2020). The less powerful depend on the powerful; subordinates exhibit deference and obedience; and there is a general acceptance of elite privileges and women's deference to men (Booth et al., 2006). Although the hierarchical culture brings challenges it has also provided relative peace and security, as people know their places in society (Booth et al., 2006). Thus, although hierarchy brings challenges, it has also provided some benefits.

On gender, on average, women have a poorer education, lower wages and fewer land rights than men (Booth et al., 2006). Women also have primary responsibility for the collection of natural resources such as firewood, food and water (Mawaya & Kalindekafe, 2010; GoM, 2011). Hierarchy and gender inequities are reflected in RWS roles and responsibilities. Although women and girls are responsible for collecting water, men dominate water committees (MoAIWD, 2015b). I discuss the implications of this in more detail in Chapter 5, while Box 5 provides further reflection on the cultural legacy of former President Hastings Banda.

Box 5: Banda's legacy regarding national identity and values

Hastings Banda was the figurehead of Malawi's independence from colonial rule, he remains a ubiquitous figure in national culture. He led the country as a totalitarian one-party state until a 1993 referendum, with the first democratic election in 1994. Banda's legacy remains significant in shaping Malawi's national identity. Banda attempted to shape national identity based on his understanding of Malawi culture. He emphasised the values of obedience, unity, loyalty, sharing, and respect for traditional leaders (Chiweza, 2007; Booth et al., 2006). In part, such values were topical to the period of decolonisation associated with Banda's term. He contrasted these "Malawi" values with western ideals of egalitarianism and individualism (Forster, 1994). These traditional values echoed the values of rural Malawians and were a foundation of the national identity and social cohesion which persist today (Chiweza, 2007). While the aforementioned values promoted by Banda had positive aspects such as fostering a relative peaceful society, they were also oppressive and

stifled creativity, initiative, tolerance and dissent (Booth et al., 2006) – characteristics of an autonomy-thwarting social and political context.

The system of patronage that prevails in the society and politics of Malawi reflects this hierarchical culture. The so-called "big bwana" (i.e. big man) political culture is pervasive, and government resources are often distributed according to patronage relationships rather than formal functions of the state (Booth et al., 2006). Booth and colleagues (2006, p. ix) note in Banda's era "patronage followed policy", while under subsequent governments this changed to "patronage [driving] policy", integrating corruption into the political process. The consequences of this culture are seen in RWS funding decisions which are often based on political interests rather than need (Chowns, 2014; Oates & Mwathunga, 2018). Village respondents in this doctoral research expressed limited confidence in their ability to secure government funding for RWS, firstly because of poor resourcing at the district level, secondly because of the "politicisation of development". Hence, greater needs of poorer regions and areas of high water stress are not reflected in higher levels of resourcing (Oates & Mwathunga, 2018; Wayland, 2019; Ejdemyr et al., 2017). In the following section I discuss the role of village heads in RWS management, and village and formal governance structures which, in theory, enable village actors to raise requests for RWS support to the district.

3.4 Village governance and interactions with district structures

The village remains the most common social unit upon which daily cultural and socio-economic activities are organised (Chiweza, 2007; Eggen, 2011). Although traditional governance structures are subordinate to the state, village political structures remain highly relevant in the daily life of rural Malawians. People are both citizens and subjects. They are governed by two parallel structures – formal government and 'chieftaincy' systems (Eggen, 2011). The village head rather than the state is responsible for most civil, customary and ceremonial matters.

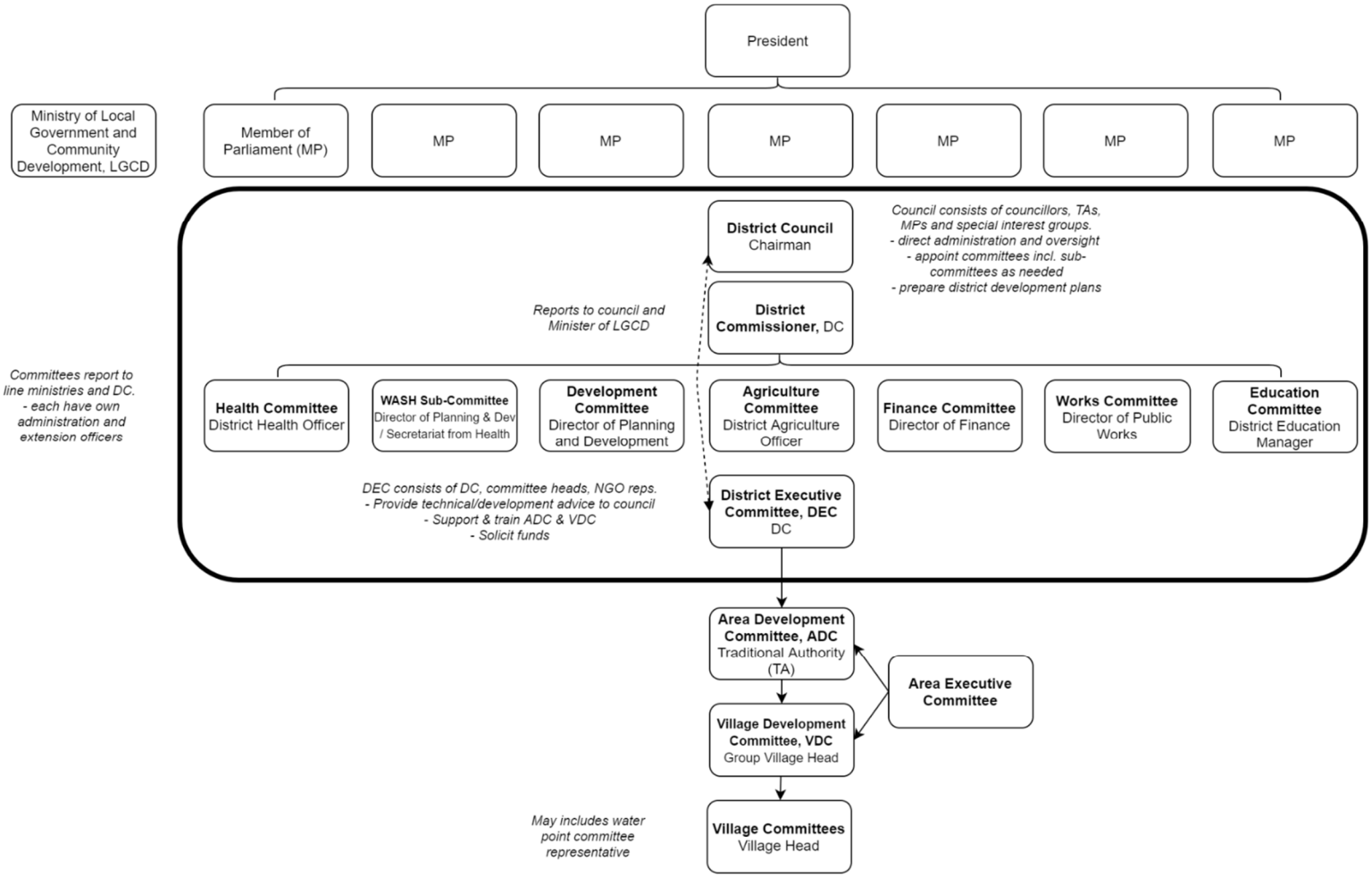
The village head also reflects the "big man" culture to a degree and plays an important role in RWS programs. Along with other sub-national actors such as MPs, councillors and traditional authorities, village heads mediate between the village and state and development partner actors (Gaynor, 2010). As a gatekeeper of development activities, including water supply projects, the village head is significant in the 'demand' side of development projects. Culturally they are the community entry points for development agencies and government. In the context of RWS, they influence the identification of community needs, oversee the selection of water project committees, coordinate the mobilisation of labour and material resources towards the water point, support the socialisation of rules and norms concerning water, and resolve significant disputes concerning village RWS (Chiweza, 2007; Eggen, 2011; O'Neil et al., 2014). As a result, their influence on RWS can be significant. As I discuss later in Section 6.3, the village head provide one of the few sources of support for WPCs in Malawi. However, their influence also has potential to infringe WPCs' independence and autonomy.

Other sub-national and traditional governance actors also play a mediating role in development activities including in the establishment and expansion of RWS projects. These structures are (theoretically) the first point of call for community actors in improvements to RWS and are thus an important aspect of members support network. The membership of area development committees (ADCs) includes group village heads[24] who exist under the patronage of a traditional authority (TA) chief. Figure 4 shows the updated district governance structure following local government reforms in 2010. In terms of bottom-up development needs, ADCs (in theory) receive requests for assistance from village development committees (VDCs, shown at the bottom of Figure 4). VDCs exist under the patronage of group village heads. They include representatives from all the villages in the group, and they include representatives from village committees[25] which may include the WPC, women's representatives, councillors, and a district extension worker representative. Theoretically, when WPCs need help for major works or a new borehole, they escalate requests via VDCs who then escalate these to

[24] TAs typically govern between ten to 45 GVHs, while Group Village Heads' govern between two and ten villages (Basurto et al., 2020).
[25] Village committees include the various committees operating at the village level that exist under the patronage of the village head.

ADCs. Part of the ADC role includes prioritisation of water and other development projects proposed by various VDCs in their area, and directing requests to the relevant district authority, the DWDO in the case of rural water. While DWDOs, are accountable to both regional administrators and district commissioners, they also have reporting lines to relevant national ministries. ADCs also mediate development activities in a top-down manner, as shown in Figure 4. They coordinate state and civil society development activities, and district development plans in collaboration with the district commissioner.

The system described above and shown below in Figure 4 rarely functions as intended. As I described in Chapter 1, district water offices (shown in the black border in Figure 4) are understaffed and underfunded. As a result, although village reports and requests regarding water supply support may flow bottom-up, there is little feedback passed back to the village level (O'Neil et al., 2014). Previous research has indicated VDCs are often inactive, and tend to become active only in response to approaches from development partners and offers of funding (O'Neil et al., 2014). Thus, they are unlikely to be engaged in the ongoing management and strategies associated with village-level development. In addition, limited public trust in government structures (Centre for Social Research, 2017) and a near absence of district support, further points to a dysfunctional system and the isolated environment WPCs operate in. Although local structures are in place to provide support, many of the actors who have roles in this process are inactive or unable to perform their function, meaning WPCs have few options for support. In Chapter 6, I discuss in more detail how the poor functioning of these structures negatively impacts the motivational climate and management efficacy of WPCs.



(Figure adapted from DFID, 2011, p. 7)

Figure 4: District government structure

3.5 The Malawi context and motivational climate

In this section, I infer how the context outlined in this chapter may impact Malawi citizen's motivational climate. Societies and their economic, cultural and political contexts exert pervasive influences which shape the more proximal environment and motivational climate of citizens (Ryan & Deci, 2017, p. 563). For example, those with access to basic human rights of freedom of movement could be expected to more readily have their BPN of autonomy satisfied than those without such rights. Below I discuss the implications of the economic, cultural and political context in Malawi and whether they are likely to enhance or diminish BPN satisfaction.

Economic

Economic poverty and tenuous agricultural livelihoods described in Section 3.1 limit opportunities for flourishing and the ability of Malawians to navigate challenges. Although poverty was defined in term of income in Box 4, poverty has other dimensions of deprivation including physical weakness, powerlessness and vulnerability to stresses and shocks (Chambers, 1995). Consider a theoretical example of a failed water point in response to drought and decreased rainfall. In this case, users and WPC members are limited in their capacity to address such water challenges. They are likely to have few financial resources and limited options in terms of external support in the face of low state capacity (as described in Section 1.2.1). Poor access to water has a compounding impact on poverty. Flow-on effects of poor access to water include health risks from low water quality, time spent collecting water and impacts on economic and education opportunities (Bartram & Cairncross, 2010; Hunter et al., 2010; Prüss-Üstün et al., 2008). Thus, Malawians' economic poverty compromises their choices (autonomy) and ability to affect change (competence) on their well-being. The frequency and severity of poverty at a national level is a pressuring factor in citizens' motivational climate. Later in Section 6.4.2 I expand on proximal implications of economic poverty to the functioning and effectiveness of WPCs.

Culture

How might Malawi's vertical (hierarchical) and collectivist culture (Hofstede Insights, 2020) influence citizens' BPN satisfaction? First, it is important to note, autonomy as defined in SDT is not the same as *independence*. People can be volitional (i.e. autonomous) in their independence from others, they could also be volitional in their dependence on others as characteristic of a collectivist culture. Equating independence with autonomy has led to some (e.g. Iyengar & Lepper, 2000) arguing SDT claims regarding the importance of autonomy are relevant only to individualistic cultures. Nonetheless, it is expected that not all cultural contexts are equal. Research by Chirkov and colleagues (Chirkov et al., 2003) offers one of the few SDT studies which analysed the influence of national-scale vertical-collectivist culture on BPNs. The research found such cultures were less internalised than more egalitarian cultures, and posited this was because hierarchical societies are more likely to require people to act subordinately and thus compromise autonomy (Chirkov et al., 2003). Though this study did not focus on Malawi, the conclusions echoed sentiments of Booth and colleagues (2006) observations of Malawi culture. This analysis argued hierarchy and collectivism in Malawian culture generated conformism, with individuals expected to know their place or risk being "cut down by gossip, false accusations and other expressions of jealousy" (Booth et al., 2006, p. ix). Such attitudes are likely to provide pressures on citizen's BPNs.

I recognise this critique is an example only of one aspect of Malawi culture and is generalised at a national scale. All cultures, whether collectivist and hierarchical like Malawi, or individualistic and egalitarian like Australia (Hofstede Insights, 2020) contain cultural elements which diminish or enhance an individual's BPN satisfaction (Ryan & Deci, 2017). Further research of BPN satisfaction in the Malawi (national) cultural context is needed to test the applicability of Chirkov et al.'s conclusions and provide a more nuanced analysis of how BPNs are supported or pressured. The national scale motivational climate is not addressed in this doctoral research. However, later in Chapter 6 I explore how WPC's relationships with other members, users and those in a position of authority (i.e. village heads and donors) shaped committee members' motivational climate.

Politics

In addition to culture, national and sub-national political system also impact citizen's BPN satisfaction. Consider a hypothetical country with an autocratic political system and high levels of inequality between the elites and majority of the population – it is likely such contexts would diminish citizen's feelings of autonomy, competence and relatedness. Limited freedoms and political and economic opportunity coupled with a poor relationship between citizens and the state could actively thwart citizen's BPN satisfaction. By contrast, political environments which are supportive of BPNs are evidenced by accountable governments, the voting rights in democratic elections, and where citizens and the state are equally subject to the law (Downie et al., 2007).

In the case of Malawi, citizens have low trust in National and District government (Centre for Social Research, 2017). As discussed, politics has historically been characterised by widespread corruption (Booth et al., 2006) with high levels of inequality between political elites and majority of the population. Such contexts would diminish feelings of autonomy, competence and relatedness. There are some encouraging political trends in Malawi which show improvements in democratic processes. On voting rights and elections, the incumbent President Peter Mutharika lost the most recent election after the federal courts ordered a rerun of the vote following mass protests (BBC News, 2020). The successful functioning of Malawi's judicial system and subsequent vote was praised by domestic and international civil society organisations. In addition, of 192 countries assessed by Freedom House, Malawi was the only country which under COVID responses had improved its performance regarding democratic practices and respect for human rights.

In the absence of empirical evidence, it is difficult to draw definitive conclusions on the impact of the national economic, cultural and political context in Malawi on citizens' BPNs. Nonetheless, I seek to highlight that ambient national political climate will provide a 'top-down' influence on citizens' (including WPCs) motivational climate. The national context forms the background and shapes the more proximal local context in which WPCs operate. However, these factors are generally considered more moderate

in their motivational effects compared to an individual's immediate context such as task design and interactions with others in the course of the role (R. M. Ryan, personal communication, 27 November 2018). These more distal factors are analysed later in Chapter 6.

3.6 Chapter summary

In this chapter I discussed the social, governance, and cultural context of Malawi to situate the research focus. I first outlined key geographical and socio-economic indicators, this included an account of the high levels of poverty and a reliance on external aid to fund basic services including RWS. I also discussed state governance structures from the national to the district and village levels. I highlighted the current lack of state transparency concerning donor funds, which along with different agendas of development partners, has meant funding approaches to RWS are often fragmented rather than co-ordinated at the sector level. I also pointed to the importance of hierarchy and patronage which are pervasive in Malawi culture and governance. At times this has meant RWS funds have been allocated according to political interests rather than need. In addition, hierarchy and so-called traditional values have also suppressed creativity and initiative. Finally, I discussed the governance mechanisms which in theory, mean village-level concerns regarding RWS can be escalated to decision-makers. However, as I explained, these structures rarely function well, meaning WPCs have few options for external support.

I then discussed how this context likely distally impacts citizen's BPNs satisfaction. I outlined how economic poverty limited choices (i.e. autonomy and competence) with respect to livelihoods and opportunities for flourishing. Cultural elements of Malawi's hierarchical culture which foster conformism in addition to low trust in government is also likely to compromise need satisfaction. By contrast, improved democratic processes are indicative of increased support for autonomy and competence in the national context. In the following Chapter 4 I outline the research design used for this study before I present findings in Chapters 5 to 8.

Chapter 4 Research design

This chapter describes the methodology and methods used to answer the four research questions outlined earlier in Chapter 1. To revisit, these questions are:

1. What motivated members to continue to participate in the WPC, and were these motivations autonomous or controlled?

2a. What aspects of the motivational climate were significant for WPC motivations, and how?

2b. From a theoretical perspective, does ABCD support autonomous motivations, and if so, how?

3. How did the quality of WPC members' motivations influence their management efficacy?

I start this chapter by discussing the experience and worldview I bring to the research and my reflexive practice as a researcher. I then explain how and why I chose the case study sites, and provide an overview of study site demographics. I then outline the mixed methods approach used in the research. This includes: how I selected participants, the qualitative and quantitative approaches I used to collect data, and the data analysis methods. I also describe the approach I used to minimise, manage or eliminate ethical risks associated with the research. I finish this chapter with a discussion of the limitations of the research design.

4.1 A pragmatic approach to transdisciplinary research

In framing this research, I drew from some of the central principles of transdisciplinary (TD) research. RWS is a complex and important contemporary challenge, and as Whittington alluded to when discussing the historical failures of RWS, RWS sustainability is a challenge which crosses disciplinary boundaries:

> *Engineers blamed poor quality construction; anthropologists described a lack of community participation, political scientists reported rent-seeking and poor*

> *governance structures and economists complained of poor pricing and tariff design* (Whittington et al., 2009, pp. 697–698).

Consistent with conceptions of TD research, this research crosses disciplinary boundaries of engineering (RWS), social science (ABCD and development), and psychology (SDT) in exploring the wicked problem of RWS sustainability. In crossing disciplinary boundaries, TD research typically adopts a pluralistic approach, a movement between multiple and sometimes conflicting paradigms and the viewing of subject matter from different angles (Palmer et al., 2018; Wickson et al., 2006). Similarly, in the case of this research, RWS, ABCD and SDT have different and often seemingly incongruent epistemological foundations (e.g. social constructionism in ABCD, and positivism in SDT).[26]

Because of this, I considered that adopting a single paradigm would be limiting, and I adopted a pragmatic approach for the research design. Pragmatism takes a pluralistic and problem-focused approach to research (Creswell, 2007; Patton, 2002). It uses the methods best suited to answering the research questions. As a result, it is not bound by one paradigm (Johnson & Onwuegbuzie, 2004). Pragmatism's flexible approach and ability to cross paradigm boundaries makes it particularly relevant to TD research. Consistent with pragmatism, I have used a mixed methods research approach, relying primarily on qualitative methods (including perspectives from multiple participants) with quantitative elements to triangulate findings (including perspectives from multiple participants) (Creswell, 2014, p. 201; Johnson & Onwuegbuzie, 2004; Patton, 2002). I discuss the mixed methods approach later in Section 4.5.

Besides a focus on real-world problems, TD research ideally integrates non-academic stakeholders into research processes (Jahn et al., 2012; Scholz & Steiner, 2015; Thompson Klein, 2004; Wickson et al., 2006). However, the practical constraints of this PhD meant the involvement of non-academic participants in the research framing was not possible, instead their contribution was limited to their contribution as research participants and as experts of their context. Participants had a stake in improved rural

[26] A more detailed comparison of theoretical and practical alignment between SDT and ABCD is discussed later in Chapter 7.

water supply and included government, NGO and community-level stakeholders – animators (village champions who were the primary liaison with CADECOM, the implementing NGO), village heads, area (borehole) mechanics, and WPC members[27]. Their inclusion helped enhance the societal relevance of the research. In addition, their different perspectives brought richness and rigour to the research. However, as noted these stakeholders were not involved in the framing of the research, as might be desirable in a truly TD research process.

4.2 Research reflexivity

Researcher reflexivity is a critical component of quality in TD research when moving beyond the confines of a single discipline and engaging with both congruent and incongruent worldviews (Mitchell et al., 2015; Mitchell & Willetts, 2009). Reflexive practice requires the researcher to articulate their conceptual, ontological and epistemological positions (Mitchell et al., 2015; Patton, 2002), and to reflect on how these positions affect the research process. I have used reflexivity as a method for three purposes in this research: to reflect on my standpoint as a researcher, to sense-make the research through different disciplinary and stakeholder lenses, and to consider how, with whom, and at what scale my research can contribute to social change. I discuss these practices below.

1) Reflecting on my standpoint as a researcher and its evolution during the research

Initially, I do this by being explicit about my researcher standpoint and worldview. My interest in this research stems from over ten years of professional experience in international development, mainly focused on supporting grassroots NGOs in WASH. During this time, I have trained other practitioners in strength-based approaches (SBAs) and ABCD as a development approach. My previous experience meant I brought existing conceptions of 'development' to the research founded in my own values, professional experience and experience with ABCD. This included a leaning towards grassroots, bottom-up approaches to development. Foundational to my own practice of

[27] These roles are explained later in detail in Table 6.

development is the valuing of development practice which supports meaningful choice and opportunities for those targeted by development programs, in addition to meeting their basic material needs.

How did my own values influence the research? First, they meant I focused on self-determination as it related to water supply. That is, I focused on exploring how people experienced autonomy (or the lack of it) through engagement in a management role, a role which had implications in sustaining RWS for themselves and others. Second, my research approach emphasised the knowledge and experience of participants. The focus of the research leans towards supporting actors from the 'bottom up' in the RWS system, namely how their autonomous motivations can be supported. Third, my values influenced the adoption of SDT as the theoretical framework. SDT had both academic applicability to the research and philosophical alignment to my existing approach to development. The importance of autonomy as a psychological need in SDT is consistent with my existing world view of development.

I also incorporated structured approaches to reflexivity regarding my standpoint during my research. In Malawi during data collection, this included keeping a diary of experiences, daily debriefs with my research assistant, regular meetings with my supervision team, regular discussions with research participants and CADECOM Malawi staff. CADECOM[28] was the NGO research partner in Malawi that introduced me to community participants, I explain CADECOM's role in more detail in Section 4.3. In Australia, reflection was via regular supervision meetings, six-monthly progress reports, candidature stage assessments, and accountability and support meetings with other Institute for Sustainable Futures (ISF) PhD students. These approaches helped make sense (or not) of my observations, interpretations and interactions, and they highlighted my worldview and assumptions. For example, diary notes from April 2018 highlighted my assumptions about, and internalisation of, ABCD principles, which assume everyone

[28] CADECOM is the domestic aid and development agency for the Malawi Catholic Church. CADECOM implements programs in governance, conflict management, livelihood, environmental, gender and women's empowerment, health and education (Caritas, n.d.). It is active in all districts through Catholic diocesan offices.

has unique strengths and gifts that are of value to others (Kretzmann & McKnight, 1993).

> *A few things were striking [from the ABCD training with committee members], first, the comments from [CADECOM co-facilitator] that people do not have many assets. Second, this theme from participants that their strengths and contribution extended to bricks and stones – as if that was all they were worth and able to do! Again, highlights my ideology with people … a faith in what they have inside but also a different perspective [to them] on what has value in regards to 'development'. – Diary notes.*

2) Making sense of the research through different disciplinary and stakeholder lenses

I practised sense-making through different lenses by engaging across the disciplines of water supply, social science, and psychology. This included in all stages of the research process and the research dissemination plan. The latter included presentations at an SDT international conference and an ABCD conference, and journal articles in rural water and community development disciplines.

Contradictions and commonalities between paradigms were central to the research. SDT and ABCD originate from different, and at times conflicting, research paradigms. As part of research question 2b, I explored opportunities to integrate SDT into ABCD, hence it was necessary to analyse where and how the different epistemological foundations may present barriers to integration. Equally as important was defining bridges between SDT and ABCD (e.g. a mutual concern with autonomy and a critique of hegemonic contexts) and proposing how the ABCD knowledge base and practice may benefit from integration of SDT's empirical evidence base.

Further, to incorporate different stakeholder lenses, I purposefully included participants from multiple backgrounds as part of the research design. Interviews with WPC members, users, village heads, animators, NGO staff, area mechanics, district staff, male and female participants was a deliberate aspect of research design to elicit diverse perspectives of ABCD's and WPCs' motivations. Inclusion of diverse stakeholders

inevitably made the research more complex. Perspectives often conflicted around the attribution of community successes and failures. For example, CADECOM attributed success to the ABCD approach, area mechanics attributed success to their maintenance support, and WPC members attributed success to their own performances. Although complicated, I found the use of diverse perspectives provided a closer representation of the reality of the WPC context than would have been achieved had I used a narrower cohort of research participants. Each participant brought a unique perspective. My approach to integrating diverse perspectives was at times analogous to the parable of the blind men and the elephant, each feeling a different but singular part of the elephant, and each individual defining the elephant through their limited perspective. At other times I described the process to my supervisors as being akin to weaving a tapestry, the unique perspectives slowly adding layers of learning to provide a more complete picture of the WPC members' contexts.

3) To reflect how change happens in my research context, and opportunities for impact of this research

In line with conceptions in the literature of TD research (Mitchell et al., 2015) I considered social change to be an essential aspect of my research. It was one of the central motivations for undertaking the research. The third element of my reflexive practice was to deliberate where, how, what type, and what scale of change might be most relevant to the research.

In terms of designing for change, I recognise that the use of academic evidence and the more obvious channels of research dissemination (e.g. this thesis, journals, conferences) are but one element of change creation (Mayne et al., 2018). As part of my research design and consideration of ethics, I identified opportunities for beneficence and reciprocity for participants through the research process. This included change through the process of dialogue and reflection as part of the interviews. For example, interviews with WPCs provided a forum in which they could reflect and analyse their own context, whilst I was undertaking a similar process in my role as researcher. One WPC member in Nanchopwa noted the interviews had prompted thinking and organisation around future plans for the committee. In addition, for some

participants, the interviews affirmed the importance of their roles. Others were grateful their contribution would help inform better practice. Although these are examples of less tangible outcomes, nonetheless I consider change through dialogue to be an important means to create change, both during the process of the research and post-publication.

I have also delivered and planned for more formal avenues of reciprocity and change. I reported my preliminary findings to CADECOM Malawi and CADECOM Blantyre. I also delivered training sessions with CADECOM staff for village heads, animators and area mechanics in Blantyre and Phalombe (shown in photographs in Figure 7 and Figure 10. The training focused on creative approaches to financial management and raising funds for RWS, one of the competency gaps of WPCs identified in the preliminary findings. The Phalombe training also included a refresher on ABCD. Importantly, the training at both locations was an opportunity for WPCs, animators, and village heads to network and share experiences across locations. As such it provided an avenue to strengthen peer support within and between WPCs.

Post-publication of this thesis, I plan to leverage my existing networks in the WASH and development sectors as part of research communication and dissemination through both formal (e.g. this thesis, journal publications, conference presentations, and presentations) and ongoing informal approaches (e.g. dialogue). As described in Chapter 1, I hope the research contribution can support: new ways of conceptualising the experiences of WPC members as part of CBM interventions, the importance of those experiences in affecting members' motivations and management performance outcomes, and integration of BPN-supportive approaches into RWS design.

In the following section I move to the mechanics of my research design and explain the case study approach used in my research.

4.3 Case study approach

To answer the research questions, the primary methodology was a case study approach, with a focus on obtaining an in-depth understanding of motivations in a RWS context. I chose this approach for three reasons. First, it allowed me to ground the study of WPC motivations and an ABCD development program in a real-world setting (Yin, 2018). Second, I was able to explore the lived experiences of WPC members and their motivations. Although SDT concepts provide a useful and universal framework of motivation typologies, these broader concepts such as motivation types and BPNs are consciously removed from specific disciplinary contexts. By using a case study approach, I was able to determine how SDT concepts and members' motivations were shaped by the messiness of the CBM and WPC context. Third, based on my review of the literature, this is the first research of its kind on ABCD, motivations, and RWS. The use of a case study approach provides an opportunity to fill an important gap in the literature, in particular using a novel approach (SDT) to how motivations in RWS may be explored. I outline how I chose the research partner and case study program in the following section.

4.4 Research partner and case study selection

My initial criteria for selecting a research partner and case study locations included the explicit use of a strength-based approach (SBA) in RWS and that the partner should be a non-government organisation (NGO). The ABCD approaches discussed in Section 1.3.1 are a type of SBA. SBA is a philosophical stance which views people and places as rich in resources or strengths which can be highlighted and harnessed to create change (Saleebey, 2000). A practitioner's role in SBAs is primarily that of a facilitator rather than an expert (Willetts et al., 2014). SBAs encompass a range of approaches which include ABCD. In scoping the case study, I reviewed grey and academic literature, contacted SBA practitioners, and met with multiple NGOs that work in the RWS sector. However, my findings from scoping case studies in RWS confirmed conclusions from the literature review – the explicit use of SBAs in RWS was rare. There was both limited literature and a limited understanding of SBAs amongst the NGOs I met. However, earlier project research work (Winterford & Cunningham, 2017) with NGOs Caritas Australia

('Caritas')[29] and CADECOM Malawi ('CADECOM') indicated Caritas and CADECOM staff, government representatives, and community members had a clear grasp of SBA concepts, had reflected on the motivational potential of SBAs, and had developed their own insights into the approach. Importantly, RWS was a prominent feature of their programs. Hence, I determined they were a suitable subject for a case study.

The selected case study villages were part of an integrated community development program[30] implemented by Caritas and CADECOM. The development program had an explicit SBA/ABCD focus and included RWS interventions among a broader suite of development interventions such as sanitation and hygiene, livelihoods, agriculture and food security, village savings and loans programs, child protection, disaster management, and environmental conservation (Wanjohi et al., 2016).

The Malawi program was funded through the Australian Government's Australian African Community Engagement Scheme (AACES), an AUD$83 million program delivered by NGOs from 2011 to 2017. AACES integrated SBAs into the program design, and included SBAs as a recommended development approach for partner NGOs (DFAT, 2015). As a result, Caritas and CADECOM used SBAs as their framework to engage with community participants. Based on project success beyond AACES, both Caritas and CADECOM permanently adopted SBAs as their organisational development approach.

CADECOM documentation and staff referred to the approach more generally as a 'SBA'. As I described earlier, ABCD is a type of SBA and CADECOM's approach shared the characteristics of ABCD principles and tools. Hence, I continue to use the term ABCD in describing their practice though it would be equally correct, though less specific, to use

[29] Caritas Australia is the international aid and development agency of the Australian Catholic Church. Caritas Australia (www.caritas.org.au) set the original SBA agenda for AACES and supported the integration of SBAs into organisational practice through funding, training and support for CADECOM. However, the bulk of my interactions were with CADECOM, and as CADECOM was largely responsible for implementation, I refer predominantly to CADECOM from this point forward, though I recognise the important role Caritas played in funding the program and integrating the SBA into program design and CADECOM operations.

[30] Integrated community development refers to a more holistic approach to community development rather than a focus on one or few thematic areas. It usually involves multiple projects targeting different areas of people's lives, rather than one project focus area, for example, a focus solely on food security.

the term SBA. In the following section, I discuss which village case study sites were chosen from CADECOM partner communities and why.

4.4.1 Selection of Phalombe and Blantyre case study districts

Within AACES, I focused the research on three villages where CADECOM had used an ABCD approach. These projects were located in the southern region in Malawi and were managed via the CADECOM Blantyre office (also in the southern region). The office was receptive to research and had some project experience in both strength-based and non-strength-based WASH programs. In consultation with CADECOM, I purposively selected the three ABCD villages, Nkhumba, Nanchopwa and Malekuwa, from the 50 villages CADECOM worked with in Phalombe district, between 2011 and 2017. Sample criteria included:

1. The community had worked or was working with CADECOM Blantyre.
2. Water supply had been implemented as part of the ABCD intervention.[31]
3. The main domestic water supply in the village was supplied via a borehole.
4. The borehole was managed under a CBM model.
5. The WPC had managed the water supply independently for over 12 months.
6. The village was broadly representative – a typical case, as opposed to extreme examples (Patton, 2002), regarding their participation and success in sustaining interventions.

Three non-ABCD villages were also selected, initially as comparisons to the AACES sites. The original intention in selecting these three villages was to compare the effect of the ABCD process on RWS management. However, as I discuss later in Section 6.5, the impact of ABCD was primarily in framing of RWS projects at project inception, rather than shaping the ongoing management of RWS. Hence, a comparison of the impact of ABCD on management practices between AACES and other contexts was not appropriate.

[31] Not all AACES villages included water supply because of either limited CADECOM resources or alternative community priorities.

Again, I purposively sampled these non-ABCD villages in consultation with CADECOM Blantyre. The same sample criteria listed above were used; however, criterion 2 was amended to: 'water supply had been implemented, *without* an ABCD approach'. No CADECOM projects in Phalombe district fitted this criterion. Because of this, three villages, Chilaulo, Galufu and Nkhumba, were selected from Blantyre district, approximately eighty kilometres east from Phalombe. The reason the ABCD approach was not used in these locations was because CADECOM had not adopted the approach at the time of the commencement of these projects. Figure 5 shows the location of both districts and the case study villages.

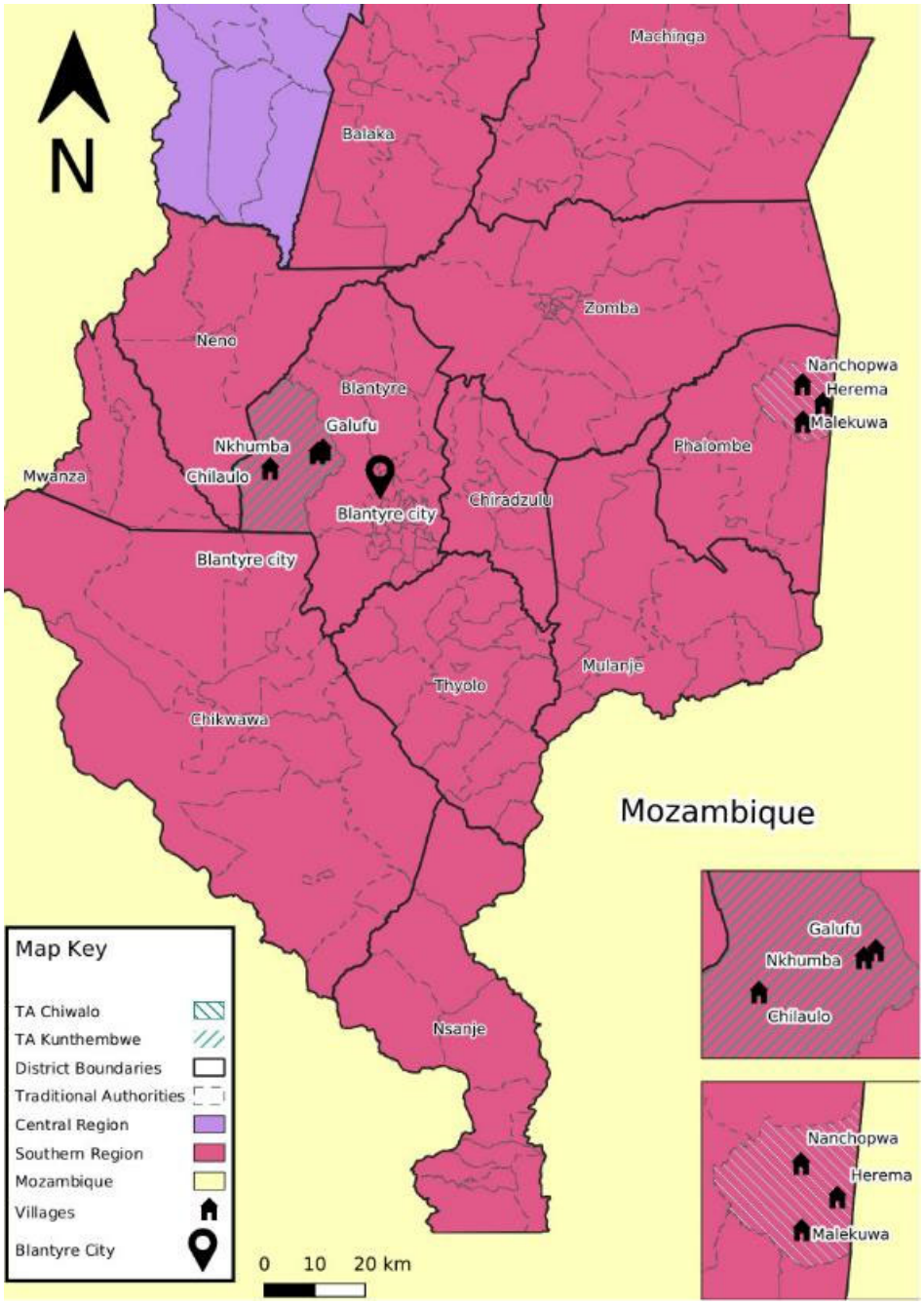


Figure 5: Case study village locations

CADECOM Blantyre had almost no experience in water supply prior to AACES. As a result, CADECOM had installed water supply only in Nkhumba. Chilaulo and Galufu had existing water supplies installed by other donors. Nkhumba and Galufu villages had worked with CADECOM for five years, while Chilaulo village had worked with CADECOM for one year, all under CADECOM's earlier approach to integrated community development (ICD). Nkhumba was also a unique case. According to CADECOM staff, CADECOM's participatory approach with Nkhumba started as needs-based, but mid-way

through the project cycle this changed to strength-based. However, the village leader, the animator and the WPC members did not understand or recall the ABCD process. Their description of CADECOM's engagement approach was more akin to a needs-based approach, hence, have considered them as a non-ABCD example. From this point in the report I refer to projects in Phalombe district as the 'AACES projects' and those in Blantyre as 'ICD projects'. This is for simplicity, though both projects used an integrated community development approach and targeted multiple interventions, not just RWS.

To situate the case study sites, in the next section I briefly discuss some of the demographic background to the Phalombe and Blantyre districts and the case study sites.

4.4.2 Description and demographics of Phalombe and Blantyre case study districts

Blantyre district includes Blantyre city, the second-largest city in Malawi. The district has a total population of 1,251,484. Most of the population is based in Blantyre city with 451,220 living in rural Blantyre (NSO, 2019). Table 2 below shows a comparison of demographic data for the rural areas of Blantyre district and Phalombe district. Most residents in rural Blantyre are smallholder farmers, though burning charcoal and selling firewood are also sources of livelihood for many residents (Chawawa, 2018). Blantyre district comprises eight traditional authorities (TAs). TAs are traditional boundaries governed by a traditional authority chief. The sample villages were in TA Kunthembwe. In Blantyre district, Nkhumba and Galufu, and to a lesser degree Chilaulo, had notably better connectivity to transport and markets than Phalombe district villages. All Blantyre district villages were within a one-hour drive of Blantyre city.

CADECOM's baseline socio-economic report for the Blantyre case villages, Galufu, Nkhumba and Chilaulo, was not available. However, demographic indicators for the district at large are included in Table 2. The table indicates economic status and education levels are higher in Blantyre than both Phalombe and the national averages. Of particular note, the poverty levels of 40% in rural Blantyre are significantly less than those in Phalombe (NSO, 2016). However, major socio-economic differences between the two village groups in Blantyre and Phalombe were not immediately obvious based

on my observations. Figure 6, 7, and 8 below show a selection of photos taken from Blantyre district to assist with visualising the context and, for those unfamiliar with RWS, to see what a typical (Afridev) handpump looks like.

Phalombe district was the focus of CADECOM's AACES program. It is approximately 81 kilometres south of the commercial city of Blantyre and has a population of 429,450 (NSO, 2019). The district includes four TAs, with TA Chiwalo encompassing the three case study villages of Helema, Malekuwa and Nanchopwa. In general, the focus villages in Phalombe district were more isolated than those of Blantyre. Most residents in Phalombe were engaged in agriculture as smallholder farmers and supplemented their income through casual labour (CADECOM Blantyre, 2012). In 2011, 64% of the district's population was living in poverty – above the national average of rural poverty of 56.6% (NSO, 2016). However, CADECOM's baseline report (2012) estimated that only 3.2% of the population in the sample villages was supported by salaried employment. Food shortages were common, particularly from November to February (CADECOM Blantyre, 2012). CADECOM staff noted a recent drought had impacted economic activity in the area. Much of the district, including TA Chiwalo, was susceptible to floods. The most recent serious flood was in 2015, during the term of the AACES program. Figure 9, 10 and 11 below show a selection of photos taken from Phalombe district, as a visual reference to support the context provided.

In sum, socio-economic conditions in the two districts are similar, with district indicators in Phalombe suggesting slightly higher levels of poverty than in Blantyre. As is the case with Malawi more generally, poverty levels by global measures in both locations is high. As I discussed in Chapter 3, an over-reliance on rain-fed agriculture with limited crop diversity means incomes and food security are tenuous. Socio-economic data in both districts makes the absence of district support for major works stark. As I discuss in Chapter 6, a new borehole, including drilling, costs approximately US$2,250. Considering approximately half the population in both districts lives on less than US$1.90/day, this cost represents a significant and unrealistic financial burden for the majority of populations in Blantyre and Phalombe to meet.

Table 2: National, Blantyre rural, and Phalombe district side-by-side

	National (urban and rural)	Blantyre district (rural only)	Phalombe district (urban and rural)
Population (# people)	17,563,749	451,220[A]	429,450[A]
Area (km^2)	94,552[B]	1,792[B]	1,394[B]
Population density (people/km^2)	186[A]	253[A]	325[A]
Average household size (people/household)	4.4 [A]	4.1 [A]	4.3 [A]
% population below poverty line of US$1.90/day	51% [C]	40%[C]	64% [C]
% population who reduced number of meals per day to mitigate food shortage	46%[D]	35% [D]	53% [D]
Literacy rate	69%[A]	75%[A]	65%[A]
Secondary school as highest level of education	5%[A]	7% [B]	4%[B]
Employment rate (15-64 years old)	59%[B]	60%[B]	65%[B]
% of population for which borehole is main source of drinking water in dry season	62%[A]	71%[A]	67%[A]

A: NSO (2019); B: African Development Bank and National Statistical Office (2019); C: (NSO, 2016, based on 2011 figures) D: NSO (2018)

Figure 6: Water point, Charles (chairman, left) and research assistant (Elton, right) in Galufu

Figure 7: Water point committee members from Chilaulo, Galufu and Nkhumba at a workshop in Galufu

Figure 8: Meeting with the Nkhumba committee and area mechanic

Figure 9: Meeting with Francis and Annie in Nanchopwa village

Figure 10: Water point committee members from Helema, Malekuwa and Nanchopwa at a workshop in Phalombe district

Figure 11: Original water point at Helema, not installed by CADECOM

Table 3 and Table 4 below show demographic data from Blantyre ICD and Phalombe AACES villages respectively. As seen in the tables, most villages have a population below 500, except for Galufu. The population size gives some indication of the demand for water in each village. Though often when a borehole is installed, neighbouring village members will also draw from the water point meaning demand is in most cases higher than what is shown below. Later in Table 16 in Chapter 8, I outline the number of users per water point.

Some of the demographic data presented in Table 3 and Table 4 are also link to the socio-economic data above. For example, female-headed households are more likely to

experience poverty, with the absence of men generally due to death, divorce or migration[32] (Buvinić & Gupta, 1997). Further, Nkhumba and Galufu were within one kilometre of market areas, meaning they were closer to a greater diversity of economic opportunities. All Blantyre villages were within a one-hour drive of Blantyre city, providing greater access to economic opportunities, employment and services than Phalombe villages.

Table 3: Demographic data from Blantyre ICD sites

Village name	Chilaulo	Galufu	Nkhumba
Location (latitude / longitude)	-15.695791°, 34.789382°	-15.660478°, 34.888182°	-15.666729°, 34.878171°
Traditional authority	Kunthembwe	Kunthembwe	Kunthembwe
Group village head	Chilaulo	Stande	Kadikira
Village head	Ezra	Josie	Chimwemwe
Population[A]	492	1255	542
No. female / male headed Households	25/95	200/106	53/79
Distance to market	14.8km	<1km	<1km
Duration of CADECOM program	2008-2013	2008-2013	2013
Year of borehole installation	2007	2000	2012

A: Estimated using the average household size of 4.1 for Blantyre District (NSO, 2019)

Table 4: Demographic data from Phalombe AACES sites

Village name	Helema	Malekuwa	Nanchopwa
Location	-15.573952° 35.821551°	-15.608444° 35.784011°	-15.538568° 35.783182°
Traditional authority	Chiwalo	Chiwalo	Chiwalo
Group village head	Chinani	Nambera	Chimbalanga
Village head	Gift	Clem	W.
Population[A]	266	224	430
No. female / male headed Households	38 / 24	30 / 22	52 / 48
Distance to market	10.3km	4.1km	13.5km

[32] In Phalombe, it was common for men to migrate to neighbouring Mozambique for work. While participants in Blantyre noted women were often heads of households in Galufu because of issues with alcohol consumption among men.

Duration of CADECOM program	2011 - 17	2011-17	2011-17
Year of borehole installation	2014	2014	2014

A: Estimated using the average household size of 4.3 for Phalombe District (NSO, 2019).

In the following section I discuss the mixed method approach I used for data collection and analysis.

4.5 Mixed methods approach

As I discussed in Section 4.1, I took a pragmatic approach to this research. Consequently, I used a mixed method approach – qualitative methods with quantitative elements, in order to use the most appropriate method to answer the research questions. I have adopted Johnson and Onwuegbuzie's (2004, p. 17) definition of mixed methods research as being, "research where the researcher mixes or combines quantitative and qualitative research techniques, methods, approaches, concepts or language into a single study". In the following section I describes the data sources I used, how and why I used mixed methods, data collection methods, and my approach to analysis. I then discuss my approach to ethics and the limitations of my research.

4.5.1 How and why of mixed methods

I used three principal data sources in this research which I discuss in more detail in subsequent sections. The data sources were:

1) qualitative interviews, supplemented with my daily diary notes
2) quantitative data from an SDT SRQ questionnaire completed by WPC members
3) a borehole and WPC survey.

Table 5 summarises the method, data type and analysis I used to address each research question. I discuss the specifics of methods, data types and my approach to analysis in more detail in Sections 4.5.2 to 4.5.6, this includes further details on participants in Section 4.5.2. For Research question 1, I used a 'convergent parallel' mixed methods approach for the research design (Creswell, 2014). Illustrated in Figure 12, I collected both qualitative and quantitative data at the same time, analysed the data separately,

and then compared and contrasted the analyses side-by-side, as described by Creswell (2014). I then integrated findings to respond to the research question. For Research Questions 2a, and 3 I predominantly used interview data. Interview data relevant to Question 3 was also supplemented by a borehole and WPC survey. Research Question 2b was theoretical and drew primarily from existing literature. This question was addressed via a journal article submitted to the journal *Community Development.* I present the article and methods used for question 2b in Chapter 7.

Table 5: Research questions, data collection method and analysis approach

Research question	Method	Data type[A] and source	Analysis
1. What motivated members to continue to participate in the WPC, and were these motivations autonomous or controlled?	Qualitative	Interviews (**members**, users, village heads, animators) and daily diary[B]	Transcript coding and thematic analysis
	Quantitative	SDT SRQ Questionnaire (**members**)	SRQ: individual sub-scales and relative autonomy index
2a. What aspects of the motivational climate were significant for WPC motivations, and how?	Qualitative	Interviews (**members**, users, village heads, animators, CADECOM staff, area mechanics) and daily diary	Transcript coding and thematic analysis
2b. From a theoretical perspective, does ABCD support autonomous motivations, and if so, how?	Theoretical	**Literature** supplemented by interview responses to illustrate theoretical concepts.	Epistemological. paradigm comparison based on approaches from Lincoln et al. (2011)
3. How did the quality of WPC members' motivations influence their management efficacy?	Qualitative	Interviews (**members**, **users**, **village heads**, animators, CADECOM staff, area mechanics) and daily diary	Transcript coding and thematic analysis
	Survey	Borehole and WPC survey (**members**)	Borehole functionality and WPC performance evaluation

A: The primary source/s of data are bolded.
B: The daily diary is explained below. My diary notes were based on the activities of each day of data collection/creation.

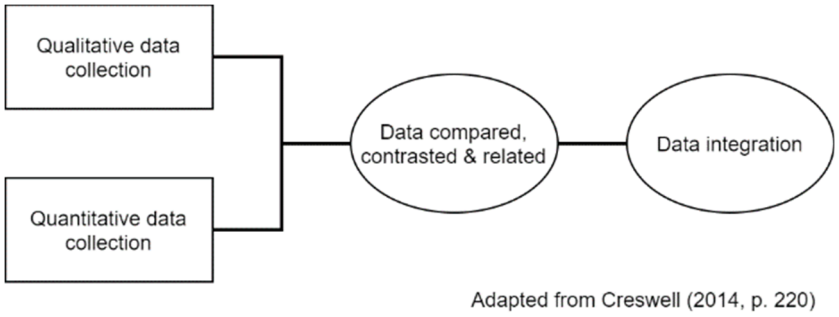


Figure 12: Convergent mixed method approach

Regarding the mix of qualitative and quantitative methods for Research Question 1, it is pertinent to describe, not only how methods were mixed, but why they were mixed (Bazeley, 2004). Hence, I touch briefly on how I used each method before explaining why it was used. In terms of quantitative data, the main instrument I used was an SDT questionnaire which I used to define the significance of various motivation types relevant for members, and draw conclusions of dominant motivation types across WPCs. As I discussed in Section 2.3.1, SDT research has primarily been developed through rigorously tested questionnaires. They are used to support generalised statistical correlations associated with the quantitative tradition (Chirkov & Anderson, 2018) and provide a codified means to define, test and measure SDT constructs and causality in SDT. This includes applications across contexts from work environments to relationships, and use in different cross-cultural environments and disciplines (e.g. Chen et al., 2015; Chirkov, Ryan, et al., 2011; Gagné et al., 2015).

Interviews provided most of the data for Research Question1. As WPC motivations have received little attention in the literature, the (qualitative) interviews provided nuance and depth in exploring members' motivational experiences and subsequent motivation types. The use of SDT as a framework enabled me to analyse interview responses related to lived motivation experiences from the perspective of an established theory which I discuss in more detail in Section 4.5.2. The parallel use of the quantitative SRQ tool meant I could triangulate qualitative findings and demonstrate the relevance (and the limitations) of the SRQ in the Malawi CBM context. By itself, the questionnaire findings do not provide a nuanced understanding of how motivation types were

experienced by participants in their specific contexts. By using both methods, I was able to determine a more complete picture of members' motivations.

Triangulation across the data types was relevant for confirming congruence and highlighting inconsistencies between the conclusions I drew based on interviews and the SRQ. The SRQ findings also clarified inconsistencies in the qualitative data. For example, when participants provided conflicting accounts of motivations in interviews the SRQ could provide an additional data point to clarify their motivation experiences or types. In sum, by using both methods, I was able to determine a more complete picture of members' motivations. Further, the triangulation approach enabled me to interrogate the methods I used and reflect on the methodological strengths and weaknesses of each approach.

4.5.2 Interviews and daily diary

In this section I discuss the selection of interview participants and my use of a daily diary which I used to capture initial impressions of interviews. I then outline how both interviews and diary notes were analysed.

Research participants and interviews

The aim of interviews was to provide an in-depth understanding of the research question constructs (Patton, 2002). All interview participants were purposefully sampled based on their roles in the ICD or AACES program. They included people from CADECOM national and Blantyre staff, the district government, animators, village heads, area mechanics, WPC members[33] and water users, with 44 interviews in total completed. All interviews were semi-structured, with some unstructured interviews with CADECOM staff. As I was often based in CADECOM's Blantyre office, there was additional time to opportunistically seek clarifications on emergent issues. The category / role of each participant, the number of interviewees for each category (disaggregated into male and female where relevant) and their roles, are outlined in Table 6 below. I

[33] Members also completed the self-regulation questionnaire. This is discussed later in this section.

have also included a full list of interviewees identified by category, location and gender (where relevant) in Appendix B.

WPC members and animators were purposively sampled based on their gender. Malawi government guidelines recommend WPCs include an equal mix of men and women. Hence, I aimed to interview one male and one female from each WPC. In addition, all 12 WPC members interviewed were active members. I aimed to interview one male and one female animator in each community. However, this was not always possible as in some villages there was only one animator, or in one case, two males. The research assistant randomly selected water users for interviews. All users except one were women as women have primary responsibility for collecting water. Other participants (village heads, CADECOM staff, area mechanics, district staff and other NGO staff) were interviewed based on their role, not their gender.

I completed additional interviews with district staff (two in Phalombe, one in Blantyre), area mechanics (two in Phalombe, one in Blantyre) and representatives of WASH NGOs (InterAide and Concern in Phalombe, Water for People in Blantyre). These interviews were used to gather information on the RWS context, hence WPC members' motivational climate, in each region. As area mechanics are an important form of support for the WPCs, their interview responses were coded and included in the detailed analysis. The district staff and NGOs were relevant for understanding the RWS context more broadly. However, district and NGO staff, CADECOM excluded, did not work directly with the case villages and were more peripheral to the research focus. As a result, I did not code or include these interviews in the analysis.

Each interview was completed at a location comfortable for the participant, typically either their home or at a community meeting area. Interviews with CADECOM, NGO and district staff were completed in English; all other interviews were in Chichewa via a translator (the research assistant). I recorded the interviews with a digital recorder and a backup recorder in case of technical failure. One interview with a user in Galufu was not digitally recorded.

A 44-year-old male research assistant helped with translation, logistical support, navigating the cultural context, building rapport with participants, and daily debriefs with me on our observations and interviews. The research assistant was a practising doctor who was retraining in public health. Before the first interviews, I briefed the research assistant on research ethics, translation expectations, and trained him in ABCD and SDT concepts. Together, we reviewed the preliminary interview questions to ensure concepts could be communicated in the Chichewa language. I discuss the ethics of interviews in Section 4.6, and the challenges associated with language barriers in the limitations in Section 4.7.

I used the research questions to frame the interview questions. I show the focus of each interview below in Table 6 and a more detailed interview question guide is included in Appendix C. Broadly, the interview questions covered themes of: the roles of different actors; WPC member motivations; the motivational climate, including the NGO approach and NGO–community relationship; the WPC management performance; the WPC–user relationship; and approaches to, and experiences of, ABCD in the cases of Phalombe villages. To ensure questions were relevant, the content of each interview varied depending on the participant category. For example, animators, village heads and CADECOM staff had more experience of the community-NGO relationship than the users did. However, I included overlaps between questions across stakeholders to triangulate responses and capture multiple perspectives regarding the research questions.

Table 6: Research participant categories and interview focus

Participant category and number of participants	Role	Interview focus[A]
CADECOM staff (5)	Managing project implementation and interactions with community. Connecting community with government stakeholders	Reflections on ABCD process, changes in participant motivations and program sustainability, impacts of ABCD on RWS
Village head (5)	Interfaced with NGOs. Mobilising community. Resolving disputes.	Reflections on NGO approaches, and (where relevant) ABCD process, community-NGO relationship, village head–WPC relationship, WPC–user relationship, WPC performance, and WPC motivations

Animator (4M, 4F)	Volunteer "village champions" main liaison with CADECOM and government stakeholders. Early adopters and trainers of CADECOM programs.	Reflections on NGO approaches, and ABCD process, community–NGO relationship, animator–WPC relationship, WPC–user relationship, WPC performance, and WPC motivations
WPC members (5M, 7F)	Volunteers from the community. Day-to-day management of water point	Reflections on NGO approach, and (where relevant) ABCD process, community–NGO relationship, other supporting stakeholders, WPC–user relationship, WPC performance, and WPC motivations
Users (1M, 10F)	Community members who collect water from the borehole.	WPC–user relationship, WPC performance
Area mechanics (3)	Mobile borehole mechanics, who advise on, or conduct, repairs and maintenance for a fee	Reflections on NGO approaches, area mechanic–WPC relationship, WPC performance and RWS sustainability
District staff (3)	Responsible for supporting WPCs and coordinating NGO work in RWS	District approach to RWS, RWS sustainability
Other NGOs (3)	Implementing WASH programs in Phalombe and Blantyre.	Approach to RWS, RWS sustainability, support mechanisms for WPC

A: ABCD was discussed only in Phalombe villages

Although interview questions were often targeted towards a specific research question, I drew from all of the interview responses from the relevant participant in coding. For example, I asked direct questions to determine why members participated on the WPC, such as: "why do you continue to participate in the committee? What motivates you?". Members also gave reasons for participating on the WPC (i.e. motives) when asked about other aspects of their role and when describing their experiences on the WPC.

I piloted interview questions with three participants, two of these participants were outside the study focus area and one from within. Based on the pilot I refined both what I asked, and how I asked it, in response to observations and participant feedback. In all interviews, I used additional questions and probes in response to answers (e.g. "Can you explain more?", "How did that feel?", "Why do you think that was?"). In addition, I treated questions as conversation starters. Although the interviews had aims and structure, when appropriate they flowed in different directions as dictated by the

participants' responses. Hence, the interview protocols shown in Appendix C are a guide only and not always reflective of the questions asked.

I wrote or audio recorded a daily diary to supplement the interviews. The diary notes included observations from the interviews or other, unscheduled interactions; initial reflections on interviews; and points of interest from debrief discussions with the research assistant. In addition, I kept a photo record at each location which as a minimum included the water point and the interview participants. In the following section I describe how both interviews and diary notes were analysed.

Post-processing and analysis of interviews and diary entries

From the interview responses, the analysis process sought to identify themes which addressed the research questions. Qualitative analysis involved stages of preparing and organising the raw interviews for analysis. I recruited three native Chichewa speakers to translate and transcribe the interviews verbatim. I checked transcriptions for quality against the recorded English sections of the interviews, and by comparing the research assistant's verbal English translation with the translated transcriptions. I discussed discrepancies with the transcriber and research assistant, and transcriptions were refined where necessary.

I then analysed the transcribed interviews and diary notes through coding using NVivo[34] software. Documents were firstly attribute coded. This is a process of assigning basic descriptive data to each interview or diary entry (e.g. date, location and participant name, gender, organisation, role) (Saldana, 2012). I then coded data using a deductive, provisional coding approach where research questions were used to generate a preliminary list of primary codes, I did this to ensure the relevance of the coding structure (Miles & Huberman, 1994; Saldana, 2012). Provisional codes reflected the three focus subject areas of the research questions: motivation constructs (e.g. motivation types, BPN satisfaction or thwarting, and motivational climate), RWS, and the AACES (i.e. ABCD) program. SDT codes were determined with input from SDT experts via the SDT listserv and based on the literature review. Text segments from the

[34] QSR International, Versions 11 and 12.

interviews were then coded against the pre-determined provisional codes to confirm the codes' relevance.

All codes were documented in a code book to ensure a consistent and ideally replicable approach to coding. The code book format was based on recommendations by Saldana (2012) and Patton (2002). It included the code name, a brief description, a long description, inclusion criteria and keywords, exclusion criteria and keywords, sample text fragments. The final code book is shown in Appendix D.

I completed two subsequent rounds of analysis to further sub-code the text in NVivo, with the aim to obtain more specific categories of codes relevant to motivation constructs. For example, text coded to primary themes of "motivation types" were further sub-categorised into autonomous or controlled types of motivations. The subsequent round coded these categories and into individual motivation types (e.g. intrinsic, identified etc.).

I used a deductive rather than inductive approach to code motivation constructs as the research focused on the application of SDT rather than the testing and development of the theory. The use of SDT to generate codes provided a structure to identify and code abstract concepts associated with motivations. For example, I coded for motivation quality rather than simply presence or absence of motivations, as has been the case in most previous RWS and ABCD research. I recognise an inductive approach would likely convey the messiness of motivations more than a deductive approach. However, I argue this messiness and intangible nature of motivations has been a barrier for a nuanced examination of motivation in RWS and ABCD. Hence, I decided on a deductive coding approach to support the sense-making of motivation constructs.

In the fourth round, I coded RWS and AACES primary codes using an inductive approach to descriptive coding (Hsieh & Shannon, 2005; Saldana, 2012). This approach did not use pre-determined codes and instead captured the basic topics of text fragments in a word or short phase (Saldana, 2012). For example, a provisional code which captured text fragments relevant to "AACES / ICD" was further coded into "activities" and

"outcomes", and again into more specific categories as needed (e.g. "attitudinal outcomes"; "relationship outcomes"). Again, the code book was updated with these code categories as required. Following this fourth round, all interviews were revisited and recoded or uncoded as necessary based on the final code structure. As discussed, the full list of codes is shown in the code book in Appendix D, with broad code categories including:

- SDT motivation constructs codes. These were based on SDT literature, and included motivation types, experiences akin to BPN support and BPN satisfaction, and the elements of the motivational climate which supported or thwarted BPNs.
- AACES / ICD codes. These were pragmatic and captured NGO activities, subsequent impacts, and a category for activities or impacts relevant to ABCD.
- RWS codes. These included descriptions of the roles of RWS actors, relationships between actors, RWS outcomes, and user attitudes.

The use of existing codes in provisional coding presented two risks to analysis quality. Firstly, existing codes can lead to a bias towards supportive rather than non-supportive evidence (Miles & Huberman, 1994; Saldana, 2012). Secondly, there is the potential to make the text fit the codes, that is, to code text into categories which are not applicable (Hsieh & Shannon, 2005; Patton, 2002; Saldana, 2012). I mitigated these risks through the use of the codebook to track and document coding approaches. As I explained, I also used multiple rounds of coding, uncoding or recoding text when there was excessive overlap between code categories (Miles & Huberman, 1994; Patton, 2002; Saldana, 2012). This was the case when I was coding interviews against BPN satisfaction. My code categories included autonomy, relatedness and competence satisfaction. It was not always possible to place text passages in one and only one of these categories, because respondents discussed experiences in a manner which resulted in the same text fragment being assigned to all three codes. In these cases, I aggregated codes data back into the broader BPN satisfaction code. As discussed, I also kept records in a code book during the coding process.

Following the coding I collated the coded text into themes based on their convergence. This included determining what data fitted into one theme in a meaningful way, whilst remaining distinct from other possible themes (Patton, 2002). Where relevant, NVivo functionality was used to determine if and how themes varied based on participation category and location. For example, NVivo was used to compare how users viewed WPC performance with how WPC members viewed their own performances. On comparisons between locations, NVivo was used to determine if one village had evidence of more autonomously motivated WPC members than another. I used such approaches to identify contradictions and generalisations in interview responses.

Memos were used to reflect on my analysis process and emerging questions and concepts based on the data (Saldana, 2012). They were based on a template and written against each interview and diary entry which was coded. The template included the dates and summary of the coding rounds, content reflection (e.g. contradiction or confirmation of literature or emerging theory), thoughts about coding analysis (e.g. suitability or inadequacy of codes), personal reflections (e.g. frustrations, satisfactions with the interview), key questions raised, and a summary of how each interview did or did not address each of the research questions. The memos were invaluable. They facilitated my reflection on the data, provided initial analysis, and the means to track the evolution of my analysis.

As I discussed in Section 4.5.1, I compared interview findings regarding motivation type with SRQ findings. In the following section 4.5.3 I discuss the process I used to table, administer, and analyse the SRQ. I provide further details on my approach to comparing interview analysis and SRQ in in Sections 4.5.4 and 4.5.5.

4.5.3 Self-Determination Theory questionnaire

The SRQ was used to determine the significance of motivation types for WPC members at the time of the interview. The questionnaire was completed by interviewed WPC members. The English and Chichewa versions of the SRQ are included in Appendix E. Below, I explain how the purpose of the questionnaire, and how I adapted and used it.

I used Sheldon and colleagues' (2017) version of the SRQ, to answer Research Question 1 and assess the prevalence of WPC members' motivation types. The SRQ has been used in tangentially relevant fields to the WPCs, including exploring motivations in the context of professional work (Gagné & Deci, 2005; Ferris et al., 2019; Richer et al., 2002; Van den Broeck et al., 2013), volunteer roles (Boezeman & Ellemers, 2009; Creswell, 2014; Millette & Gagné, 2008), and international development applications (Sayanagi & Aikawa, 2016; van Egmond et al., 2017). Sheldon's version of the SRQ includes 24 root questions to assess different motivation types and hence it can be easily adapted to different contexts and behaviours. For example, in response to "Why do you do x?" where 'x' is the behaviour being assessed, respondents rank how strongly they agree or disagree with various rationales – such as "I once had good reasons for doing x, but now I do not" (Sheldon et al., 2017, p. 1235). The 24 questions comprise four questions for each of the six types of motivation (amotivated, external, avoidance, introjection, approach introjection, identification, and intrinsic motivations).[35] Likert-style responses to questions ranged from 1=not at all true, to 4 = somewhat true and 7=very true. Sheldon validated the root questions across several behaviours to demonstrate their validity in determining motivation types.

I modified the SRQ questions to reflect the WPC role. Example questions from the SRQ are shown below in Figure 13. Although the SRQ required only minor changes to suit the WPC context, it did require translation from English into Chichewa. The translation followed protocols recommended by the World Health Organisation (WHO, 2007). The English version was first translated into Chichewa by two researchers who were native Chichewa speakers. Rather than a literal translation, the translation aimed to convey the sentiment of the questions. Questionnaires were then back translated into English by a professional translator to check for equivalence and any loss of meaning in the questions. I discussed discrepancies with the translators, and final adjustments were made.

[35] As noted in the introduction, previous SDT research has found it difficult to separate identified and integrated motivation types statistically and conceptually. Hence integrated is often omitted from SRQ questionnaires (Gagné et al., 2015; Roth et al., 2009; Sheldon et al., 2017). This is the case with Sheldon's questionnaire. Hence, I have omitted it in qualitative analysis, and aggregated any integrated experiences with identified motivation.

"...why do **you** actively participate on the WPC?"

	1 Not at all true	2	3	4 Somewhat true	5	6	7 Very true
1. Because it is my personal choice to participate on the WPC.							
2. Because if I don't participate, others will get mad.							
3. Because participating on the WPC boosts my self-esteem.							

Figure 13: Sample questions from SRQ

I then tested the final questionnaire with three participants to further refine the wording and determine the best approach to administering the questionnaire based on the cultural context. The testing phase was critical in determining how best to deliver the questionnaire. The rationale for the questionnaire was provided and prefaced with a sentiment of "this is about identifying what you feel, it is not an assessment of what you do". Test participants originally asked to complete it alone. However, it was clear this perpetuated the perception that the questionnaire was an assessment, and this perception was likely compounded by the perceived power disparity between the research team and participants.[36] Hence, the research assistant delivered subsequent questionnaires in-person and orally.

To minimise feelings of pressure associated with the SRQ, the research assistant and I built rapport with participants through multiple visits to the villages. The first visit was introductory, the second was for interviews and the third was to complete the SRQ. Based on testing, the research assistant administered the questionnaire in Chichewa, with an emphasis on a relaxed environment, a playful description of how Likert scales function, clear instructions, and clarification of questions as they arose. The final method for delivering the questionnaire supported a flexible approach without compromising the content and integrity of the questions.

[36] See also Sayanagi et al. (2019, 2018) for challenges in the use of SDT tools in low-income, international development contexts.

Adaptation of SDT questionnaires is common practice, so they can be applied to a range of behaviours. New questionnaires are typically statistically validated within their context and language before application (e.g. Schmidt et al., 2012). I did not do this for three reasons. First, the original English versions of questionnaires had been validated in previous studies, albeit in English (Sheldon et al., 2017). Second, validation requires large sample sizes. The small sample size (n=12) of WPC members, meant validation was (statistically) not feasible nor pragmatic. Third, questionnaires in SDT research are often used for large samples to make broad generalisations and predictions across a population. In these cases, statistical validation is particularly important. However, I used the questionnaire for a different purpose. Questionnaires were used to assess individual experiences, and triangulate the qualitative findings on a person-by-person basis (see Hassandra et al., 2003; Ridgway, 2017; Sebire, et al., 2013 for similar applications). Because of these pragmatic and methodological reasons, I did not validate the questionnaire.

As a further safeguard to the validity of the method, I had two SDT experts with experience in the application and validation of SDT tools check and approve the English version of the modified SRQ. Regardless of these approaches, it is prudent to recognise the absence of validation as a limitation to the research. Particularly in the case of large samples, it is recommended the SRQ included in Appendix E is statistically validated before use with larger samples and in Chewa. This would improve the validity of the SRQ (and other SDT tools that may be used). Examples of validation can be seen in Levesque et al. (2007), Schmidt et al. (2012), and Gagné et al. (2015).

4.5.4 Analysis of SRQ and comparison with interviews: individual motivation type sub-scales

Consistent with the SDT literature (CSDT, 2020; Sheldon et al., 2017), I calculated individual sub-scales for each motivation type by averaging the responses to each item of that type (e.g. the average of all intrinsic motivation type questions). Based on the seven options of the Likert scale, this gave a mean score of between 1 (not at all true) and 7 (very true) for each motivation type.

To compare and contrast these numerical findings with interview data, I took three additional steps. First, based on approaches used by Anderson (2015), I further categorised the SRQ sub-scale score (SS) as representing either low ($1 \leq SS < 3$), moderate ($3 \leq SS < 5$) or high ($5 \leq SS \leq 7$) for each motivation type. For example, a member may experience (collectively) low intrinsic, high identified, moderate approach introjected, moderate avoidance introjected, low external and low amotivation experiences regarding their participant in the WPC.

Second, based on qualitative interview coding, the same categories (low, moderate or high) were used to assess the importance of each motivation type. The qualitative categories were determined by: how often the member discussed the motivation type; and the emphasis they placed on the motivation; and researcher observations for each interview. I categorised the interviews before I calculated the SRQ scales to reduce the possible influence of the quantitative findings on the qualitative analysis.

Third, I then compared interview findings (qualitative) and SRQ findings (quantitative) for consistency. The SRQ categories (of low, moderate or high) were compared to those from the interviews, as per the side-by-side mixed method approach described earlier. This approach allowed triangulation between the qualitative and quantitative findings and revealed the degree of consistency between the two data sets. As mentioned above, drawing conclusions about consistency meant I could triangulate findings and determine the relevance of the SRQ. This approach also highlighted the comparative strengths and weaknesses of each method.

For each WPC member and motivation type, three categories were used to assess consistency between interviews and the SRQ. Findings were assessed as *consistent* when qualitative and quantitative categories were the same (e.g. when both reported moderate levels of intrinsic motivation). They were *moderately consistent* when the categories were different but adjacent (e.g. moderate and high intrinsic, or, moderate and low intrinsic) and *inconsistent* when differences were extreme (e.g. low and high intrinsic). I adapted this method from Anderson (2015). A fourth category of

inconclusive was used when experiences of a motivation type were not clear for a participant (i.e. there was no evidence to suggest if the motivation type was or was not relevant). An example of a consistency comparison is shown below in Figure 14.

WPC member name	Location	SRQ - intrinsic category	Interview - intrinsic category	Consistency between SRQ and interview
Esther	Chilaulo	Low 1.75	Low	Consistent

Figure 14: Example findings from qualitative and quantitative data, and comparison of consistency

4.5.5 Analysis of SRQ and interviews: aggregate scale of autonomous and controlled motivations, Relative Autonomy Index

I further processed sub-scales to obtain a more general picture of the significance of autonomous and controlled motivations for each member using the Relative Autonomy Index (RAI) from the SDT literature (Grolnick & Ryan, 1987; Sheldon et al., 2017; Center for Self-Determination Theory (CSDT), 2020).[37] The RAI is an aggregate measure of the overall motivation orientation (either autonomous or controlled). The RAI for each participant was calculated by subtracting the sum of all controlled subscales (e.g. avoidance introjection, external, amotivation) from the sum of all autonomous subscales (e.g. intrinsic, identified, approach introjection) as shown in the example in Figure 15 below. I interpreted the RAI score as representative of members' aggregate level of autonomous motivations, hence I concluded if members were overall low, moderate or highly driven by autonomous or controlled motivations based on the RAI score. That is, the RAIs indicated the level of autonomy of a participant's motivation as follows: low autonomy $0<RAI<6$, moderate $6 \leqslant RAI<12$, or high ($12 \leqslant RAI \leqslant 18$); for controlled motivations low $0>RAI>-6$, moderate $-6 \leqslant RAI>-12$, or high $-12 \leqslant RAI \leqslant -18$. In the example below, Esther was a unique case and her overall motivation orientation according to the RAI was neutral (i.e. RAI=0).

[37] Some SDT methods weight motivation types when determining composite measures. I have adopted Sheldon (2017) who found that composite unweighted calculation provided the most efficient indicator.

Again, to compare the RAI with interview findings, I took a similar approach with determining an overall motivation orientation based on the prevalence of interview responses. For example, as shown in Figure 15, the aggregated level of Esther's motivations based on interviews was low autonomous.

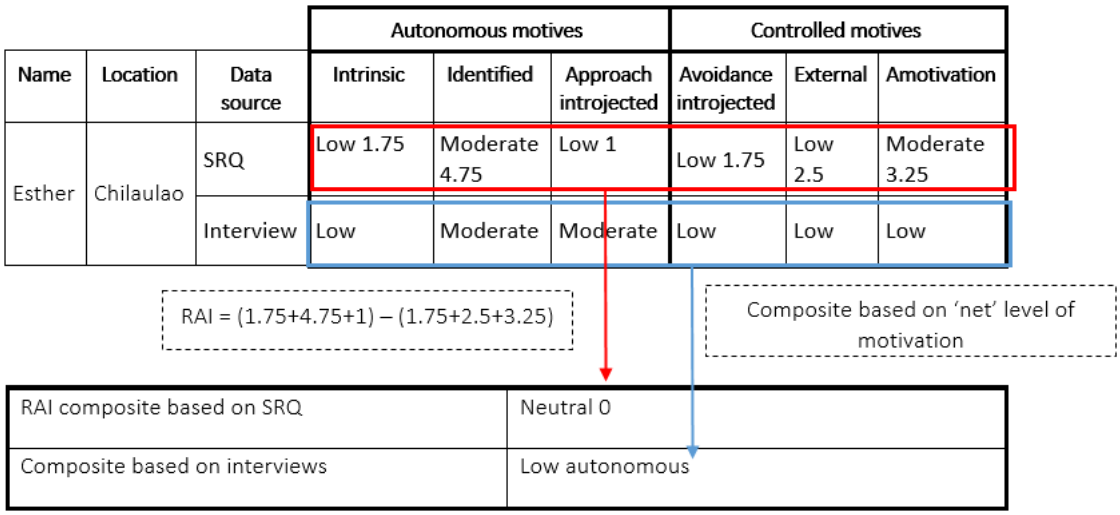


Figure 15: Approach to determine if and to what degree members were motivated overall by autonomous or controlled motivations

Such aggregated approaches risk hiding the effects of composite motivation types. For example, the neutral RAI in the example above disguises the strength of individual sub-scale motivations. Similarly, an RAI of zero could be because the participant possess equally strong autonomous and controlled motivations, while in Esther's case her motivation levels were relatively low. The RAI does not indicate this level of detail and because of this has been criticised in the literature (Howard et al., 2017; Chemolli & Gagné, 2014). I recognise such shortcomings, nonetheless the RAI has previously been shown to be an effective indicator of overall quality of motivation (Sheldon et al., 2017), hence I use the RAI alongside the more detailed individual motivation type measurements discussed above in 4.5.4.

4.5.6 Borehole and WPC survey

To answer Research Question 3, "how did the quality of WPC members' motivations influence their management effectiveness?", I collected data on the physical water point functionality, WPC management capacity, and management arrangements. Data was collected using interviews and a structured borehole and WPC survey. In the

interviews WPC members, users, animators and village heads were queried on WPC performance, including their approaches to transparency, support mechanisms and the reliability of supply. I used the borehole and WPC survey to gather quantitative data on the boreholes and management practices. The survey structure was informed by the following:

1) Previous research on water point functionality and sustainability, and water management arrangements (e.g. Foster, 2013; Carter & Ross, 2016; Whaley & Cleaver, 2017)
2) Fields from the Water Point Data Exchange (WPDx 2015)[38]
3) Recommendations from monitoring and evaluation modules from the MoAIWD guidelines (2015b)
4) Information that could be easily observed with a limited time burden for participants.

The survey item fields are shown in Appendix F and included both physical data (e.g. date of borehole instalment, depth etc.), water point (e.g. functionality, if the water point delivered adequate yield[39]) and WPC performance data (e.g. tariff collection frequency and amount, money saved). The survey was completed following interviews or in subsequent visits. Inevitably, some of the information required to complete the survey was provided in the interviews with WPCs, users, CADECOM staff and village heads.

Analysis of the WPC management performance and borehole functionality

Water point and WPC performance was assessed using recommendations and benchmarks outlined in MoAIWD training guidelines (2015b) where available, and guidelines in literature. For example, MoAIWD (2015b) include recommendations for the amount of tariff to collect based on the number of water point users. The aim of the

[38] WPDx is a global water point mapper database. Globally, a lack of water point data makes the management of rural water supplies difficult. As part of my research contribution, all hand pumps observed during the research were mapped and uploaded to WPDx.

[39] In isolation binary measures of functionality are a crude measure of borehole performance and sustainability. They provide a limited snapshot in time and provide no information on longer-term or seasonal sustainability, water quality, or the complex system factors needed to sustain a water supply described earlier in this research (Bonsor et al., 2018; Carter & Ross, 2016; Fallas et al., 2018). Hence, this measure is used as one element along with other factors listed in Appendix F.

borehole and WPC survey was to determine if and how WPC motivations translated into management performance. The survey was not used to predict the sustainability of water supply. Rather, consistent with the research question, survey responses were integrated with interview responses from WPCs, users, CADECOM staff and village heads to determine what the WPC did (i.e. performance), and why (i.e. motivations).

4.6 Ethics

In this section I describe the approaches I used to minimise, manage or eliminate ethical risks associated with the research design. I discuss the formal ethics approvals, the research partner village approval process, and how ethical risks were managed. Consistent with ACFID guidelines, I consider reciprocity relevant to research ethics. For my approach to reciprocity, I refer the reader to Section 1.3 of this chapter where I discuss the training workshops I held with research participants, and how my research findings have been and will be shared.

4.6.1 Ethics standards and approvals

The UTS ethics committee[40] and the National Commission for Science and Technology (NCST) in Malawi (P.12/17/234) approved the research design. I incorporated principles and practice from UTS's Institute for Sustainable Futures (ISF) Code of Ethical Research Conduct[41] (ISF, 2015) and the Australian Council for International Development's (ACFID) Code of Conduct for Ethical Research and Evaluation in Development[42] (2017) into the research design. These guidelines informed my approach to reciprocity, the use of culturally sensitive approaches to working with participants, and ensuring participant privacy. The guidelines also informed my subsequent approaches to risk management. However, it was also critical to be flexible in working with participants, and to adapt to situations as they arose. I discuss structured approaches to ethics and adaptive practices below.

[40] UTS ethics standards are compliant with the Australian National Research Code (National Health and Medical Research Council (Australia) et al., 2018)
[41] ISF and ACFID ethics approval was not required for the proposed research, only UTS and Malawi government approval were required. However, principles from ISF and ACFID were reviewed and incorporated in ethics planning and research approaches.
[42] UTS/ISF are signatories to ACFIDs voluntary code of conduct.

4.6.2 Local approval protocols

It was prudent to seek approval from local stakeholders before commencing the research. The national Catholic Diocese, CADECOM's national Office and CADECOM Blantyre's regional office were consulted and approved the research. At the district scale, the district commissioner and district water office staff in Phalombe and Blantyre, gave verbal approval for the research in their district. As described earlier, Malawi has two parallel governance systems – traditional and formal governance. Hence, I also received permission from relevant traditional authorities in Kunthembwe (Phalombe) and Chiwalo (Blantyre) TAs and each village head at the six villages.

CADECOM staff facilitated initial introductions with WPC members via the animator or village head. Beyond the initial introduction, I chose to remain as independent as practical from CADECOM in community interactions, to reduce the risk of being perceived as a donor or CADECOM representative by participants. Hence, in most cases my entry point to most research participants was via animators.

4.6.3 Human-sensitive approaches to interviews

I was present at all interviews with government and NGO staff, village leaders, village animators and WPC members. I did not attend user interviews. These were completed by the research assistant for both ethical and practical reasons. These interviews were brief, potentially of a sensitive nature, and for most users it was their first contact with a foreigner. Because of these factors, it was decided users would be more comfortable and transparent in their response if interviewed by the research assistant only.

As described earlier, ethical challenges due to cultural and power distances between village participants and myself were difficult to manage in interviews. As a white, educated male, I clearly presented as an outsider. Most community members from rural areas would have little cause to engage with an *azungu* (white foreigner), and I was consistently aware of my own visibility in villages. In my ethics risk assessment which formed part of my ethics approval, I identified the risks of: being perceived as a donor, catalysing rumours and potentially causing conflict by meeting only with certain

community representatives. There was also a risk my outsider role would perpetuate perceptions of outsiders as the experts and power holders, and in the process devaluing local knowledge systems.

To mitigate these risks, I met all community participants before interviewing them at a later visit. Interviews and questionnaires were completed in convenient, comfortable and conducive settings. Initial meetings were used to introduce myself and the research, schedule convenient times for interviews[43], establish a relationship, and emphasise my role as an independent researcher. This meant my entry, in what were small villages, was gentler and gave participants and community members time to adjust and discuss the research before it started. I aimed to approach interviews with a sense of curiosity and used techniques to affirm participants' expertise in their own contexts. For example, by acknowledging when I did not understand things I had seen or heard, and asking participants to assist with sense making. If participants appeared uncomfortable, I made efforts to change the dynamic by asking to be shown water points, or in one case in Chilaulo, by interviewing two WPC members together rather than independently. The research assistant was also invaluable in building rapport. His humour and manner helped mitigate some of the challenges associated with being interviewed by an outsider.

Prior to starting interviews, I verbally communicated the aims of the research, the potential risks (where present) of their participation, and offered participants the ability to opt out of interviews at any time. Where relevant, I sought permission to audio record interviews and take photos. There were challenges when presenting the paper version of the ethics participation information sheet prior to interviews – almost all participants were visibly uncomfortable. As a result, it was appropriate to forego the paper document initially, obtain verbal consent before interviews and address the signed consent at the conclusion. At this point I also recorded participants' wishes to be identified, deidentified or have the interview disregarded. Illiterate participants signed the consent form using a witnessed thumbprint. I provided paper copies of the research

[43] Time of interviews was particularly important with female participants because of gendered roles during the day (e.g. collecting water, preparing food etc.).

information sheet in Chichewa to all participants for their records. The English and Chichewa version of the participant information form and the consent form are included in Appendix G.

The Australian National Statement on Ethical Conduct in Human Research (NHMRC et al. 2007) has a provision to support the identification of research participants if they have given consent from an informed position. The disclosure of identity is ethically complex. Almost all participants gave permission to be identified in the research findings, however, as I was inevitably unable to revisit WPC members with the final quotes used in the context of the thesis, I have decided to use pseudonyms for community participants and first names of CADECOM staff, as they were able to review quotes in context. Giordano et al. (2007) and Patton (2002) note whilst anonymity protects individual privacy, it also denies agency and voice when consent is given. I concluded true agency would include a final review of how comments were portrayed in context of the PhD and hence chose to use pseudonyms.

4.7 Limitations

In this section, I outline limitations of the research design and process. The first limitation relates to the selection of case studies. Although case study selection followed a structured process, finding ideal RWS ABCD case studies was challenging. As I described in Section 1.5, in AACES there was limited application of ABCD to ongoing RWS management. Instead, ABCD was used to initiate the RWS projects. Also, WPC members had little exposure to ABCD or recall of the approach. This is somewhat understandable. It is unrealistic to expect all community members participate in every aspect of development programs with family and economic responsibilities. Further, research participant's recall of RWS inception and the water point establishment was shaped by time. In all locations, at the time of interviews, between five and 21 years had lapsed since the installation of water points. During this period WPC structure had changed and other development programs had come and gone. The realities of the cases mean findings presented in this thesis are at times contradictory and subject to gaps in data.

There were also research design limitations in regard to the self-selection of WPC members. As I interviewed current WPC members only, committee members inherently had persistent motivations. Members who had stopped participating (e.g. because of amotivation) in villages were not interviewed. Because of this, I anticipate additional controlling pressures of the motivational climate were not identified in interviews. This limitation does not undermine the significance the conclusions of this research. It does point to potential areas of future research which include former members' motivations, and their motivational climate.

Although I purposively sampled WPC members and animators based on gender, a gendered framing of the analysis was not a focus of my research. This is significant, as women's meaningful participation, hence their motivations to participate, has implications for RWS sustainability (Carrard et al., 2013; Foster, 2013; Mommen et al., 2017). The research design considered multiple angles including RWS, SDT, and ABCD, which inevitably meant forgoing other angles of inquiry such as gender. Hence, I present only a limited analysis on how gender reflected in members' motivations and motivational climate.

As was expected, the language barrier between community participants and myself was a significant barrier to the data creation process. Interviews took time due to translation and back translation, which limited what we were able to discuss. Further, language barriers meant nuance was lost in both questions and responses. For example, motivation in SDT is concerned with the reason for behaviour rather than the outcomes of the behaviour. It was often difficult for WPC members and myself as the interviewer (and in coding) to delineate between reasons for participation and outcomes of participation (discussed further in Section 5.3.1) as outcomes often reinforced reasons for continuing to participate. Adverse impacts due to language were partly minimised through using English where practical, clarifying responses when needed, and through multiple interactions with participants over different days. I also debriefed with the research assistant at the end of each interview and each day of interviews to compare and clarify our understanding. Further, all aspects of the interview were transcribed into

English, including my original question in English, the research assistant's translation into Chichewa, the participants' response in Chichewa, and the research assistant's English translation of responses. These multiple translations gave means to cross-check the accuracy of transcribers and research assistant translations and identify what was lost in translation during interviews. Despite these practices, it remains, language barriers limited the discussion and exploration with community participants.

As the focus of the exploration was on depth rather than breadth, the sample size of committee members was small. This limited the claims which could be drawn from qualitative and quantitative findings beyond the case study contexts. For some researchers aligned with a positivist research approach, the small sample size used for the SRQ would be considered unacceptable. In this research, the small sample size meant it was not appropriate (nor an aim of the research) to make statistical inferences and subsequent generalisations beyond the villages of focus. Instead, the SRQ tools offered an individual-level assessment of motivation types and their significance, and means to triangulate SRQ findings with the conclusions drawn from members' interview.

There were contextual challenges associated with the use of questionnaires which had both ethical and data quality risks. This was indicative of broader limitations of research in a low-income and post-colonial context. For example, literacy levels of participants, participants' limited exposure to research, and power dynamics between the researcher and participants, characterised the data creation process. The risks were somewhat managed with a smaller sample size, introductory visits, and use of interviews prior to issuing questionnaires. These approaches meant I was able to build some rapport with community participants. However, it remains the case that the risks of power imbalances were reduced but not eliminated. It is likely this reflected in some responses skewed towards what was expected (i.e. courtesy bias) compared to how participant's genuinely felt.

4.8 Chapter summary

This chapter outlined the research design. I began by identifying the transdisciplinary nature of the research and its integration of the disciplines of engineering (water supply), social science, and psychology. Consistent with the principles of TD research, I took a pragmatic approach to the research. This included using a mixed methods approach to data creation and analysis. I then described the process of case study selection leading to data collection in three villages in Phalombe district, as part of CADECOM's AACES program, and three villages in Blantyre district, as part of CADECOM's ICD program in Malawi. I also described the different participants who contributed to the research based on their experience of RWS and ABCD. Primary participants included WPCs, water users, animators, village heads, area mechanics, and CADECOM staff. Multiple participant categories and methods were used to triangulate findings and provide a rich picture of WPC motivation constructs.

Most of the data creation was via interviews with participants. I described how data was transcribed, coded in multiple rounds and then analysed for themes, contradictions and corroborations regarding the research questions. SDT was used in qualitative analysis as the theoretical framework to analyse motivation constructs associated with the WPC members. For example, I used concepts of BPNs to examine the motivational climate (including the influence of CADECOM's ABCD approach), and SDT motivation types to categorise motivations experienced by WPC members. The SRQ was used to triangulate qualitative findings and assess motivation concepts. I also described the borehole and WPC survey used to assess the management effectiveness of WPCs.

I outlined the ethical risks associated with the research unique to the rural Malawi context, and the approaches I used to lessen or eliminate risks where possible. In addition, I also described opportunities for reciprocity in the research – avenues taken during the research process and planned post-publication to share findings and seek to create change. Finally, the subsequent limitations section outlined some challenges associated with self-selection, absence of a gender focus, language barriers, a small sample size, and power imbalances between participants and I.

In the following chapter I present the first of the findings sections of this thesis. I answer Research Question 1 and discuss the range of members' motivation experiences and types.

Chapter 5 Water point committee motivations

This chapter responds to research question one – "what motivated members to continue to participate in the WPC, and were these motivations autonomous or controlled?". Here, I examine and discuss the range of members' (lived) motivation experiences, the quality (i.e. type) of motivation and the prevalence of motivation types for each WPC member. I identify and discuss themes of motivation across all WPCs. Finally, I include a vignette of one member to provide a more detailed picture of members' motivational experiences.

As the methods section described earlier, qualitative and quantitative methods were used to determine the types of motivations that members displayed, and the themes related to them. The findings in this chapter are ordered from the most autonomous motivations (intrinsic) to most controlled motivations (amotivation). Each section includes a summary table of the prevalence of the motivation type for each member based on interviews (qualitative) and the SRQ (quantitative) findings. Each section also includes a discussion of how motivation types manifested in the behaviour of members. As a reminder for the reader, Figure 16 below summarises the approach which combines the SRQ and interview analysis.

Although the order and structure of analysis described above makes the analysis logical, it can disguise the nuances of members' experiences of diverse motivations. Members often experienced multiple (i.e. both autonomous and controlled) and occasionally conflicting reasons for participating in the WPC. This tends to be hidden when collating member experiences together. Hence, the vignette is used at the end of this chapter to illustrate individual experiences of multiple motivations, and complement the collated analysis.

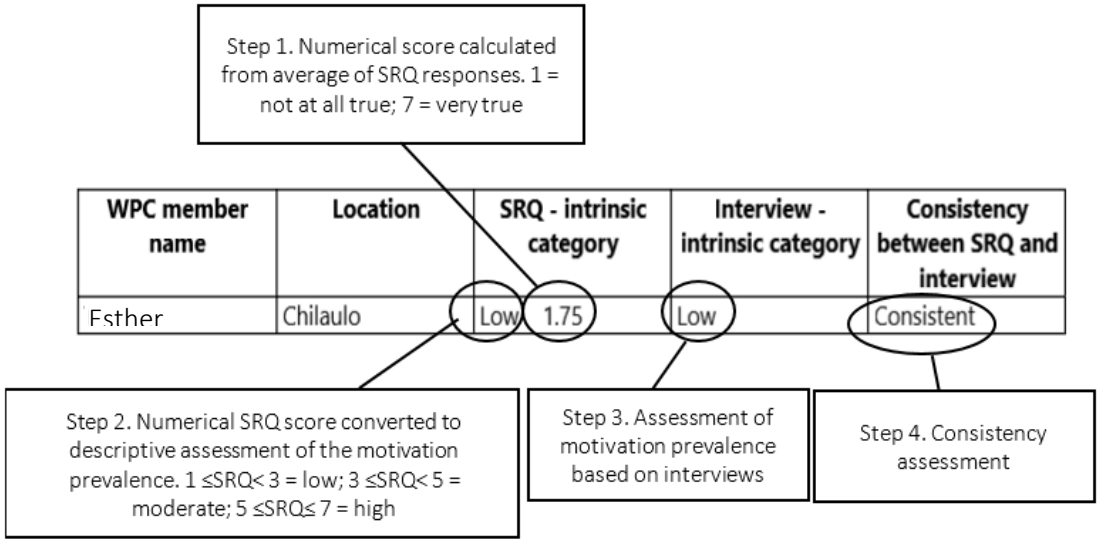


Figure 16: Analysis of SRQ questionnaire and integration with interview data

In general, findings from the SRQ and the interviews were consistent or moderately consistent. Overall, 72 comparisons between interview and SRQ findings showed that 46% were consistent, 46% were moderately consistent, 3% were inconsistent and 6% were inconclusive. 'Inconclusive' findings were classified in that way because of the differences between SRQ methods and interviews. Namely, the SRQ asks questions and prompts a response across all six motivation types, whereas in the interviews, members focused on motivation experiences which were meaningful to them. As a result, at times there was no evidence on the level of a motivation type based on interviews, hence these responses were deemed inconclusive (refer to Table 7 as an example). I discuss possible reasons for inconsistent findings against each motivation type in subsequent sections.

In addition, interview responses often had a temporal element not captured in the SRQ format. The SRQs provided a snapshot of current motivation types, while in the interviews members at times discussed current and historic motivations in response to a changing social or environmental context. For example, the falling water table in Galufu, negatively affected members' motivations over time. Hence, the interviews often revealed processes in which motivation became more internalised or less internalised in response to external circumstances. SRQs did not capture this

information. These changes were important as they illustrated how a changing environment can support or hinder autonomous motivation over time. To provide an accurate comparison between SRQ responses and interview responses, the summary tables include only a comparison of current motivations. However, when members discussed historic motivations, I have included this in the relevant discussion. In the following sections 5.1 to 5.6 I discuss each motivation type and how they were experienced by members before I summarise composite motivation findings in Section 5.7. The vignette is presented at the end of this chapter in Section 5.8.

5.1 Intrinsic motivation: relationships or knowledge associated with WPC role

Intrinsic motivation refers to doing a behaviour for its own sake. The behaviour itself is the 'reward' as it is experienced as inherently fun or interesting. The intrinsic behaviour emanates from a sense of self, not as a response to external or internal pressure. Intrinsic motivation is the most internalised form of autonomous motivation. It is considered fully self-determined. Intrinsic motivations can manifest in curiosity-based behaviour and in seeking challenges (Vansteenkiste et al., 2010) and are associated with positive well-being and performance outcomes (Deci et al., 2017; Ng et al., 2012; Deci & Ryan, 2000).

The significance of intrinsic motivations for each member are shown below in Table 7. In the interviews, none of the 12 members described high levels of intrinsic motivation to participate in the WPC, five of 12 experienced moderate levels, five were low and two were inconclusive.[44] Members were enthused when describing intrinsic motivations and used language such as "happy", "pleasing" and "enjoyable". Experiences of intrinsic motivation were identified in three contexts – interest in the learning associated with the role, enjoyment related to working with others, and isolated creative activities which improved RWS management and were completed independent of external

[44] One member reported being historically intrinsically motivated. This information is not included in these findings.

assistance. These three distinct categories are discussed separately in more detail below.

Table 7: Significance of intrinsic motivations for all WPC members

WPC member name	Location	SRQ - intrinsic category	Interview - intrinsic category	Consistency between SRQ and interview
Esther	Chilaulo	Low 1.75	Low	Consistent
Grace	Chilaulo	Low 2.5	Low	Consistent
Charles	Galufu	Low 1.75	Low	Consistent
Trish	Galufu	Low 2.5	Low	Consistent
Wisdom	Nkhumba	Low 1.75	Moderate	Moderate
Palesa	Nkhumba	Low 1.75	Moderate	Moderate
Francis	Nanchopwa	Moderate 4	Moderate	Consistent
Annie	Nanchopwa	High 7	Moderate	Moderate
Paul	Malekuwa	High 7	Low	Inconsistent
Cynthia	Malekuwa	High 6.75	Moderate	Moderate
Olivia	Helema	High 7	Inconclusive	Inconclusive
Hendreson	Helema	High 7	Inconclusive	Inconclusive

Based on the SRQ findings, five of 12 members were highly intrinsic, one was moderate, and six low. The language used in the SRQ was similar to that used by respondents in the interviews. The SRQ questions aimed to uncover whether WPC participation was fun, interesting, enjoyable, or pleasurable. As shown in Table 7, five of the 12 SRQ findings were consistent with interview findings, four were moderately consistent, one was inconsistent and two were inconclusive. SRQ responses were generally consistent with the interview responses, although members described fewer intrinsic motives in the interviews compared to the SRQ responses. I discuss possible reasons for the limited interview examples at the end of this section.

5.1.1 Positive relationships and working together was motivating

In Nkhumba and Nanchopwa[45], members described productive and positive working relationships within the WPC which brought enjoyment to their role. Four of 12 members described positive and efficacious relationships associated with the WPC as an intrinsic motivation. Intrinsic motivations in these instances were supported by relatedness with competence. For Annie in Nanchopwa, working together on a common goal was significant. She described borehole repairs as an opportunity for socialising while working and eating together said this was a "pleasing" aspect of the role. Similarly when Wisdom in Nkhumba was asked what he enjoyed in the role, he noted the importance of working with both committee members and users to undertake his work:

> *How we work with the ladies in the committee ... as it has only three men in the committee ... now, the women are exceptionally hard workers in this committee. They make my work easier … this is in addition to the understanding of the community, to the extent that it is able to be of assistance when we duly need it. And that makes my work really enjoyable.*

In the case of Annie and Wisdom, it was difficult to separate experiences of autonomy, competence and relatedness (i.e. BPN) satisfaction and intrinsic motivations. The enjoyment of working effectively with others (relatedness with competence) was inherent to the enjoyment of participation in the WPC itself. Deci and Ryan (2000, p. 233) describe this effect: "people will become more or less interested in activities as a function of the degree to which they experience need satisfaction while engaging in those activities". The SDT literature depicts BPN satisfaction as causal to intrinsic engagement. Here, individuals' experiences were part of a reciprocal relationship. Engagement brought opportunities to work cooperatively with users or members, and this in turn brought more internalised (i.e. intrinsic) engagement. In Sections 6.3 and 6.5 I explore the role of other pertinent but more distal relationships between the WPC and village leaders, CADECOM, and government.

5.1.2 Interest in learning was motivating

[45] I regularly reference the six village names throughout this discussion. I recognise it is easy to confuse villages, hence, I refer back to the village case study descriptors in page xvi at the beginning of this thesis. The descriptors provide a reference to help the reader orientate through this and subsequent sections.

Two of 12 members described motivations consistent with intrinsic motivation regarding their learning associated with the role. Palesa (secretary) in Nkhumba said "I enjoy working in the committee as I learn a lot about water ... So yes, I really enjoy the job". For Charles, the Galufu chairperson, the initial training was a highpoint of his time with the WPC, "I was very interested … to be formally trained on managing and maintaining the water point". In both these examples, the learning aspect of the role held intrinsic value and was associated with feelings of either enjoyment or interest.

For Charles, competence and mastery linked with the technical aspects of his role was a significant motive in his initial engagement with the WPC. His interest in the initial training was coupled with interest in the technical aspects of water point management expertise, and sharing his skills with others in the committee. Competence in SDT is somewhat related to concepts of self-efficacy (Bandura, 1977). In SDT, competence reflects a feeling of efficacy where capacities are engaged in efforts to achieve mastery (Gagné et al., 2018; Ng et al., 2012). Further, competence is related to a level of optimal challenge and a tendency in humans to engage in self-directed behaviour to do, experience and learn more (Sheldon & Prentice, 2019). This was evident in Charles's interview. He was one of the few members who referenced an explicit interest in the technical mastery of the borehole.

However, Charles's initial intrinsic motivations had been compromised over time. The context in Galufu had become more controlled, the boreholes had failed due to environmental conditions and could not be repaired without significant external support and investment. As a result, Charles's experiences of intrinsic motivation were diminished, to a point where he was unsure why he continued in the role. I elaborate further on this when discussing amotivation in Section 5.6.2, and in Section 6.4 in regard to BPN-thwarting motivational climates.

5.1.3 Creative committee activities were interesting

Three of 12 members described interest and enjoyment regarding creative approaches as part of their WPC role. Francis in Nanchopwa described the committee's design and installation of a drainage system as "[their] own initiative". Similarly, Wisdom and Palesa

from the Nkhumba WPC had installed a laundry wash area. Members were noticeably more animated when discussing these examples, and the significance of these events persisted with time, as noted by Palesa: “the thing that I will never forget is that we built that sink in my position as the secretary”. In both Nkhumba and Nanchopwa, users had also supported members with the construction, providing further affirmation of the committees’ initiative.

When Francis, Palesa, and Wisdom discussed creative tasks, they stressed that they were initiated independently of external support or pressure. There was no evidence of a ‘should’ associated with the tasks described above. It was clear the exercising of their autonomy and the experience of competence in the process of designing, constructing and fundraising for the structures, were enjoyable. The WPC members owned the results. As isolated events, it is questionable if such activities remain relevant to day-to-day motivations for participation. However, they do provide a useful contrast when comparing the quality of such motivations with the motivations for regular O&M activities (discussed later in Sections 5.7.1 and 6.4.4) which were at times described as involving feelings of pressure.

Feelings of autonomy from creative activities has implications for task design. For example, as creative tasks support WPC motivation and positive outcomes for users, how might such initiatives be encouraged? Are there additional opportunities for initiative? I examine this further in Chapter 9 when discussing the implications of the findings.

5.1.4 Limited examples of intrinsic motivation

For most members, there was an absence of intrinsic motivations. Grace in Chilaulo took this further, noting “there is nothing interesting in the role”. Few members used language consistent with intrinsic motivation, and when intrinsic motivations were referenced, they were often not emphasised and appeared less important than other motivation types.

Why were intrinsic motivations understated in interviews? It is important to note that not all behaviours will be, or can be, intrinsically motivated. Previous SDT research has excluded intrinsic motivations from SRQs and assessments, accepting that some behaviours are not inherently interesting or enjoyable, and therefore they are unlikely to be intrinsically motivated (CSDT, 2020; Ng et al., 2012). It may be the case that the mundane tasks which comprise the bulk of WPC duties, tasks such as O&M and bookkeeping, were either uninteresting or associated with feelings of control, in contrast to the earlier responses regarding creative activities. I discuss this in more detail in Section 6.4.4. It is also possible that the interviews were not conducive to sharing intrinsic motivations. For example, rather than emphasising or considering "fun and interesting" as reasons for their participation, it may be that members stressed what they believed I wanted to hear.

The SRQ findings suggested intrinsic motivations may have been more significant than indicated in the interviews. The SRQ results were polarised. Six of 12 members responded with "not at all true" in regard to intrinsic motivations but five of 12 responded, "very true". Hence, overall, the responses to the SRQ indicated higher levels of intrinsic motivation than the interviews. When directly prompted by the SRQ questions, one respondent surprised himself when he realised "oh yes, this role is actually interesting!". The discrepancy between interviews and SRQs, indicates that the research could have benefited from further interviews as follow-ups to the SRQ. It may also be that the SRQ returned false positives. Follow-up questions could provide additional grounded experiences of intrinsic motivation, or determine if the questions in the SRQ were misunderstood. A larger sample size and validity testing of the SRQ would also help determine if the discrepancy was due to intrinsic motivations being over reported in the SRQ (i.e. false positives). I return to this discrepancy in the limitations discussed later in Section 10.2.

5.2 Identified motivation: a desire to avoid returning to the past situation when water access was difficult

Identified motivation refers to the personal endorsement of a behaviour. The person has their own rationale for acting. In this form of motivation, the behaviour is valued, holds importance and is congruent with personal goals and identities (Ng et al., 2012; Ryan, Patrick, et al., 2008) (e.g. "I value the benefits of volunteering"). As a result the actor feels autonomous when performing the behaviour, even in relatively uninteresting tasks. Identified motivation is distinct from intrinsic motivation, as the behaviour itself is not necessarily rewarding or interesting. Hence, it is still an extrinsic, yet moderately autonomous motivation.

Committee participation was primarily motivated by identified motivations, the significance of this motivation type is shown below in Table 8. Findings from the interviews and the SRQ indicated identified motivation was the most prominent form of motivation for continued WPC participation. In the interviews, six of 12 members experienced high levels of identified motivation, six experienced moderate levels and none experienced low levels. The respondents discussed two categories of identified reasons for participating in the WPC. The first category comprised motivations related to the benefits as a user of the water point, and the valued personal outcome of sustained, improved access to water. The second category related to the identification with the community service nature of the role. These two categories of motivations are discussed later in this section. Both are identified motivations and they were associated with a sense of volition and persistence of participation. Members often described the persistence of these motivations alongside experiences of adversity, for example, continuing to volunteer despite verbal abuse from users.

Table 8: Significance of identified motivations for all WPC members

WPC member name	Location	SRQ – identified category	Interview – identified positive category	Consistency between SRQ and interview
Esther	Chilaulo	Moderate 4.75	Moderate	Consistent
Grace	Chilaulo	Moderate 4.75	Moderate	Consistent
Charles	Galufu	Moderate 3.25	Moderate	Consistent
Trish	Galufu	High 5.75	Moderate	Moderate
Wisdom	Nkhumba	Moderate 4.75	High	Moderate
Palesa	Nkhumba	High 5.25	High	Consistent

Francis	Nanchopwa	High 6.25	High	Consistent
Annie	Nanchopwa	High 6.5	High	Consistent
Paul	Malekuwa	High 6	Moderate	Moderate
Cynthia	Malekuwa	High 7	High	Consistent
Olivia	Helema	High 6.25	Moderate	Moderate
Hendreson	Helema	High 6.75	High	Consistent

Findings from SRQs indicated eight of 12 members in the SRQ reported high levels of identified motivation, four moderate and none low. The relevant questions in the SRQ referred to the personal choice to participate, valuing the role and identifying it as personally important and meaningful. In comparing SRQ and interview findings, the data for eight of the 12 participants were consistent, four moderately consistent, and none were inconsistent or inconclusive. Hence, the SRQ tended to predict identified motivation in members. These consistent findings confirmed WPC members' participation was moderately to highly driven by identified motives. In the following section I elaborate on the two themes of identified motivations, motivations associated with user benefits and community service-related motivations.

5.2.1 Benefits as a user of the water point motivated participation

11 of 12 WPC members valued the benefits the water point provided to them as users of the water supply, and this motivated them to participate on the WPC. The members identified with the challenges associated with a lack of water, and viewed participation as a means to ensure the water point continued to be operational. Responses were often framed as being motivated by a desire to avoid the difficulties of water supply and collection prior to the borehole installation.

Such challenges were severe. Previously, across five of the six villages, return trips by foot had ranged from one and half to five hours to the nearest safe water source. The poor supply disproportionately affected women in all villages, as they had the responsibility to collect water by foot. In the two most extreme cases, women reported they would leave in groups at 3 am to collect drinking water, and return at 8 am. Closer alternative sources were available and were used in some locations, but these were often unprotected and posed health risks. Distance to water presented both a time

burden and a personal safety risk for women. Hence, the new water point had significantly reduced the time burden and associated safety risks faced by women, with the time burden the main focus of responses from both men and women. Below in Box 6, I describe the gendered nature of different WPC roles including water collection, and their implications for motivation types.

Box 6: The implications of gendered roles in the WPCs

WPC roles were gendered. Multiple studies have shown that women's meaningful participation in water management is an important determinant of RWS sustainability (Carrard et al., 2013; Foster, 2013; Mommen et al., 2017). A full gendered analysis was beyond the scope of the thesis, but this box presents two key ways in which gendered roles manifested, and the implications this had for motivations.

First, women were the primary collectors of water across all locations. I had assumed this would mean identified motivations in the form of 'benefits as a user' (see Section 5.2.1) were more relevant to women. However, regarding SRQ findings, in four of the five villages (in the sixth village I met with female members only), the women had only slightly higher identified motivations than men, as shown in Table 8. Similarly, interview responses did not show any discernible difference in identified motivations between men and women. Men identified with water collection difficulties even though it was their wives in most cases doing the water collection. Hence, in both the SRQ and the interviews, the differences in identified motivations less significant than I expected. It may be these findings depend on distance to the water point, in that the historical distance to water points was so extreme that everyone viewed them as problematic, whether male or female.

Second, regarding gendered roles, in each village those responsible and confident in mechanical repairs were men. In addition, all the chairpersons interviewed were men, while women held roles such as secretary, treasurer or member. The prevalence of gendered roles, and therefore a gendered division of roles, likely had implications for task-specific motivations (Vallerand, 1997). For example, assuming

mechanical maintenance is inherently a more interesting and rewarding task than managing finances, the men responsible for these roles may have experienced stronger and more autonomous motivations than, a female treasurer responsible for bookkeeping.

A more detailed analysis of gendered tasks and motivations was beyond the scope of this research. However, I expect a larger sample size would indicate differences in the expressions and levels of motivation types based on gendered tasks. Because of this, men and women are likely to require different approaches to support their motivations and task internalisation. On the latter point, in Box 7 in Chapter 6, I touch on gendered aspects of the motivational climate.

When describing challenges of the past, most WPC members identified as users, and described their own interest in, and valuing of, a sustained water supply. The identity as a user was clear in first person pronouns, such as "I", "we" or "us" (e.g. "I benefit from the borehole" or "we are all beneficiaries of the borehole"). In contrast to identity as a user, identity as a member was associated with pro-social motives which I discuss in section 5.2.2. As WPC members and users, participants identified with water challenges, saw the borehole as important in their lives, valued its sustainability and were aware of the risks of the borehole falling into disrepair.[46] This was evident in Olivia's and Hendreson's responses below.

> *We couldn't sleep, because we used to fetch water from very far at Nambazo such that the women were waking up early leaving their husbands alone. Therefore, the past experience of water problem, motivates everyone in the community to participate on the WPC to ensure that the borehole is sustained. So that we do not experience the previous situation. – Olivia, Helema.*

> *For a long time we had been looking for suitable water supply in the community and we got it. Therefore, to ensure … continuous water supply, we work as a team*

[46] Often referred to as "slippage" in RWS literature.

and reorganise ourselves. So, since we collaborate nicely, it motivates us to not give up, to ensure the borehole is still operating. – Hendreson, Helema.

Only Charles in Galufu did not describe benefits as a user. In Galufu, the three village boreholes were not functional because of a falling water table and boreholes drilled too shallow. As the village head of Galufu reported, the water project "had completely died". Members and users had to travel to a nearby market for water. There, they paid a relatively high price as outsiders, and were often abused by market stall owners. The absence of a functional borehole meant members derived no benefit from the water point in Galufu and consequently did not identify as users.

Despite the example of Galufu, most members were motivated to participate based on personal benefit from water points. WPC members had endorsed their participation on the WPC as it supported sustained water supply and was congruent with their roles as users. Members' volitional, rather than controlled, motivations were further demonstrated when members described their 'why' of participation with terms like "importantly", "we need", "motivates", "we understood", "easy to mobilise". Such terms were used as prompts for coding as autonomous, identified motivations in my analysis of interviews. They suggested motivation was internalised and hence likely associated with persistence of behaviour.

Interestingly, members' responses related to outcomes of a sustained water point were framed as loss avoidance goals. The focus was avoiding the situation and challenges of the past. There was minimal mention of what the improved access to water had, or could, provide in supporting new goals. Instead, committee participation was essentially described from a risk management perspective – as a desire to avoid returning to the difficulties of the past.

The frame of loss avoidance is understandable. Whilst the current water situation was an improvement on historical access, it remained relatively poor and tenuous. All locations reported increased demand on new boreholes due to population growth. As Palesa in Nkhumba explained, "we are not satisfied with the situation right now,

because at the time the borehole was being installed, the population in the village was not as large. But now the population has grown". Demand from neighbouring villages was also a factor. For example, Grace in Chilaulo stated, "at least two more boreholes would help. Some people are still drinking from unclean wells and up to three villages use this one borehole". In addition, reduced flow in the dry season put pressure on supplies in Chilaulo and Helema. These factors brought long queue times and intra- and inter-village disputes over water. Such problems meant the improved situation was still far from ideal. Hence, the combination of extreme historical challenges described earlier, and the improved, yet relatively poor, current situation likely contributed to motivations being framed as "loss avoidance", as opposed to future-focused, identified motivations.

5.2.2 WPC members see their role as community service

Autonomous pro-social motives were significant for almost all members. Pro-social behaviour is behaviour that enhances or protects the well-being of others (Weinstein & Ryan, 2010). It is not inherently autonomous behaviour as it can be accompanied by feelings of pressure and control (Frey, 1993; Grant, 2008).[47] However, in this section I refer to autonomous forms of pro-social motives. In the interviews, 11 of 12 WPC members were autonomously motivated to participate because of the community service aspects of the role. Language used by members when describing these service aspects, and the subsequent coding for identified motivations, included "our/everyone/community", "community benefit", "important", "volunteer", "service", "entrusted", and "responsibility". At times this motivation type was difficult to separate from individual benefit (and identity) as a user, described above. WPC members often conflated personal benefit and benefit for others. Nevertheless, I view this pro-social orientation as a distinct category of the motivation type described above in section 5.2.1.

In these cases, the benefits of the member's participation were orientated towards an 'other' in the community. There was no evidence of external controls, and the service

[47] An oft-cited example is when volitional blood donations were crowded out by the introduction of (controlling) financial incentives for donors (Frey, 1993).

nature had been internalised and integrated with a sense of identity. This can be seen in the responses below where pro-social motives were described in the context of volitional participation and efficacy in helping others. Members were cognisant of the volunteer nature of the role, and they referred to their personal choice to participate, and the absence of material rewards:

> *I don't personally benefit anything, but with the community benefiting – that's enough. That's what motivates me; it's my responsibility to serve the people. Like I said before, water is vital for every human being so it is important to me that every member is getting access to potable water in this village, but I see no personal benefits to this. – Palesa, Nkhumba.*

> *[The motive for being] a volunteer is to help the community because I knew it is volunteerism from the beginning. Therefore, it is my personal choice to partake on the WPC and nothing else. – Cynthia, Malekuwa.*

> *The elderly who cannot walk to the next borehole of another village and also those who do not need much water are served by this borehole. Therefore, as the WPC, we are still useful to the community as we look after that. – Charles, Galufu.*

Language such as "important", "volunteering", and "choice" used above were indicative of a sense of volition (autonomy) associated with pro-social motivations. The focus on care and support for other people, in this case others in the community, is also inherently interpersonal and hence affects relatedness (Weinstein & Ryan, 2010). In the context of pro-social behaviour, relatedness satisfaction can be experienced through feelings of empathy and benevolence directed to others (Gagné et al., 2018; Grant, 2008; Martela & Ryan, 2016). This was clear in member responses, as shown in the quotes above. For example, they include references to "every member getting access to water", "help[ing] the community" and serving the elderly. There was a clear sense of connection and care from WPC members to others in their communities.

Most members who described pro-social motivations also articulated their responsibilities, or stressed the importance of their roles. Hence, their sense of efficacy

in the role was linked to their ability to support pro-social outcomes. For example, respondents in Nkhumba and Malekuwa noted:

> *We desperately needed water in this community and we can't joke about this, now that the water is here, we can't take CADECOM's assistance for granted. So it's a number one priority [for the WPC]. – Wisdom, Nkhumba.*

> *If the borehole stops functioning it will bring challenges to the users because they will have to access water from the old water source. Therefore, we want to maintain it and [if it breaks down] repair in on the same day. – Cynthia, Malekuwa.*

By contrast, some WPC members reported pro-social motivations (i.e. rationales for participation), but gave limited detail on the nature of their participation. Members spoke about their "kindness" but failed to qualify how that corresponded to actual behaviour on the WPC. It is likely this reflected a lower degree of internalisation of participation, and potentially indicated social obligations rather than an active altruistic motivation. When considering the SDT continuum, this sub-category of respondents tended to approach the introjection end of the continuum. They described pro-social motivations, but the status or pride associated with the motivations was increasingly salient. In the following sections, I discuss these less internalised motivations (e.g. status and pride) in more detail.

5.3 Approach introjected motivation: seeking feelings of self-worth or pride

Introjected motivation is often referred to as ego contingent behaviour. It is associated with a fragile sense of self-worth, feelings of pride, and a need for social approval (Assor et al., 2009). In extrinsic motivation, another person administers rewards and punishments, while in introjection they are self-administered. A sense of self-worth (pride) is the expected reward whilst self-criticism (shame) is the punishment. Ryan and Brown (2003) describe this process as akin to one part of the personality pushing around another. Although such feelings are intrapersonal experiences, they are based

on external standards of behaviour, which may have been adopted but not fully internalised (Assor et al., 2009), for example, "I work because it makes me feel worthy".

SDT considers pride and shame to be poor quality motivators compared to more internalised forms of motivation. Interestingly, this stands in contrast to practices in WASH and development which at times use pride and shame as motivators for behaviour change[48]. In addition to questions on the effects of human dignity, SDT research suggests the long-term effectiveness of such practices in changing behaviour is questionable unless members can internalise the behaviour.

Earlier in Chapter 2, I explained how introjected motivation is often further categorised in SDT academic literature as either approach-based – that is, behaviour intended to enhance a feeling of self-worth, or avoidance-based – that is, behaviour intended to minimise feelings such as shame, guilt or unworthiness (Assor et al., 2009; Howard et al., 2017). As described in the research design in Section 4.5.3, I have adopted the approach of Sheldon and colleagues (2017) and have analysed pride and shame motives separately in the SRQ and the interviews. In this section I focus on approach introjection motivations.

The significance of approach introjection is shown below in Table 9. Based on the interviews, none of the 12 WPC members experienced high levels of approach introjection motivation, eight experienced moderate levels, and four experienced low levels. Language used by members' referenced feelings of self-worth and pride associated with the position.[49] These feelings were related to the status of the position and associated knowledge gained through the role. From the members' perspectives, both these factors differentiated them from others in the community.

[48] Based on my experience working with development agencies, pride and shame as tool are common tools used practitioners to drive behaviour. For example, community-led sanitation, one of the most widely adopted approaches to sanitation in low-income countries, uses triggers of shame and disgust (Kar, 2005) around open defecation to motivate changes in sanitation. Although CLTS has been credited with significant success in reducing open defecation, it has been criticised for compromising dignity in the process.

[49] Although the WPC members were reluctant to acknowledge pride in the SRQ survey (resulting in the terminology being changed) they used the equivalent term in interviews.

Table 9: Significance of approach introjected motivations for all WPC members

WPC member name	Location	SRQ – approach introjection category	Interview – approach introjection category	Consistency between SRQ and interview
Esther	Chilaulo	Low 1	Moderate	Moderate
Grace	Chilaulo	Moderate 3.25	Low	Moderate
Charles	Galufu	Moderate 4.5	Moderate	Consistent
Trish	Galufu	Low 1.75	Moderate	Moderate
Wisdom	Nkhumba	Moderate 3.25	Low	Moderate
Palesa	Nkhumba	Moderate 4	Low	Moderate
Francis	Nanchopwa	High 5.5	Moderate	Moderate
Annie	Nanchopwa	Moderate 4.5	Low	Moderate
Paul	Malekuwa	Moderate 4.25	Moderate	Consistent
Cynthia	Malekuwa	Moderate 4	Moderate	Consistent
Olivia	Helema	High 6.75	Moderate	Moderate
Hendreson	Helema	High 6.5	Moderate	Moderate

Based on the SRQs, three of 12 members were highly motivated by approach introjection drives, seven members were moderately motivated by these drives, and two scored low. SRQ questions referred to experiences of participating for reasons of feeling good, feeling satisfied with oneself, feeling capable and boosting self-esteem. Across the surveys and interviews, three of the 12 findings were consistent, and nine were moderately consistent. The SRQ tended to slightly over-predict approach introjection motivation compared to the interviews, although overall the SRQ was moderately predictive of approach introjection motivation.

5.3.1 Pride in the position

Pride drove initial engagement in the WPC for nine of the 12 members. Members viewed their election and role as a point of differentiation from others in their community, and subsequently something that drove their initial interest in the role. Here, it is important to distinguish between pride as a *result* of being chosen, as opposed to pride as a *reason* (i.e. pride seeking) for participation. Motivation in SDT is principally concerned with the reasons for engaging in a behaviour, rather than emergent outcomes or feelings (i.e. results) of behaviour. However, in practice, it was

often difficult for WPC members to delineate between the two. For example, when discussing ongoing motivations of pride, Cynthia in Malekuwa described her positive feeling after being nominated. She noted, "people saw potential in me". She viewed the nomination as an endorsement of her abilities. Although pride was an emergent feeling after deciding to engage in the WPC, it had continued to be a 'reward' for Cynthia's ongoing participation. Others interviewed for this research experienced a similar effect. As Hendreson in Helema explained, "we are volunteers but since we have the trust of the people and we do the work to the satisfaction of everyone in the community, we keep on moving". Although SDT often describes the tenuous nature of approach introjection motivation, as per this example, pride continued to motivate members beyond when they were first elected.

5.3.2 Pride in unique skills

Members also linked their feelings of pride to the unique skills associated with their position. They took pride in the skills they had learnt either in the role or via training. These competence-based pride experiences were reported in interviews and captured by the SRQ. The latter included a question which asked if members participated "to prove to myself that I am capable". Ten of 12 of the WPC members rated this as the most (or equal most) important of the approach introjection motivations in the SRQ. Formal training in particular was highly valued by members, no matter what the type of training, and was emphasised more than skills learnt on the job. This suggests the latter were not recognised, or not valued as much. It is likely the combination of an official position and specialised expertise gave legitimacy and a level of status to members (at least from the perspective of the members). The village head of Chilaulo confirmed this:

> *They feel good, they feel educated. The entire community has to literally sit down and watch them fix the borehole until water starts coming out and the people cheer. So you can imagine the prestige and good feeling that comes with being the ones educated and trained in a community. – Ezra, Chilaulo.*

Competence-based pride was also a driver for ongoing participation in the WPC. Pride-based motivations were sustained when peers affirmed a member's skill (i.e. competence) through positive feedback on performance, and this helped foster feelings

of the member's self-worth. For example, Cynthia reported members' responses to directives as a highlight of the role, "I tend to be happy because I have delivered the message and the community has obeyed. So I know that I have some good leadership skills". In Galufu, Charles referred to encouragement from users as motivating his ongoing participation: "people are still pleased with me". In these examples, the sense of competence and relatedness satisfaction was dynamic; it continued to confirm to WPC members that they were completing their roles effectively. Hence, those experiencing both pride and ongoing positive feedback generally sustained their participation and commitment to the role.

For other members, feelings of pride were decoupled from performance. In Chilaulo, WPC members' sense of competence was generally low, and the village had a notably controlling village head who engaged in the WPC more so than most other locations. Members were vague when asked about their activities and responsibilities linked to their roles. Indeed, their SRQ responses indicated they were not concerned with "proving to [themselves] they were capable" through their participation. However, they did describe experiences akin to pride motives linked with the status of the position and the mandate to lead. For example, Esther in Chilaulo noted "I personally enjoy being a committee member because I am a leader, and if people chose me then they knew that I am tolerant and capable of performing".

In Chilaulo and Galufu entrenchment in positions in the WPC was attributed to being indispensable due to specialised skills. However, a user in Chilaulo had a sensible response to such claims:

> *Members from the WPC should be teaching or demonstrating to others during maintenance of the water point. And again, the process of replacement should be done in a way that more experienced staff are blended with new members rather than replacing the entire committee at once.*

Galufu also had unique challenges which resulted in a low perception of competence for WPC members. The village water point had failed because of environmental conditions. As a result, there was little for the members to manage, and limited

opportunities to integrate or affirm a sense of competence. Indeed, as pride became less salient as a motivator, more controlled motivations had emerged. For example, Charles was at times ready to leave the WPC. He remained in the committee based on others' expectations and their requests ("commands") for him to continue.[50] Similarly, Trish's pride motivations were decoupled with actual performance. Like Grace, she also continued to cling to the role, "for as long as I am alive, I will still serve on the WPC". Her focus appeared to be more concerned with, and controlled by, status and her "special skills" as opposed to more volitional participation. She also explained her continuing participation based on being indispensable: "we are still on the committee because if fresh people are elected to take over our positions, how will they fix the borehole? They have not gone to the training, but we did". Trish's and Charles's experiences were in line with previous SDT findings in which a search for a sense of self-worth can lead to behaviour focused on meeting others' expectations, rather than value or endorsement of the activity (Ryan & Brown, 2003). This was likely the case for Trish and Charles, whose motivations were particularly tenuous in light of the water point servicing only four households and doing so poorly.

5.3.3 Members resisted acknowledging pride

Although feelings of pride were described as motivators for WPC members, it is also possible these experiences were understated. Courtesy bias refers to the tendency of members to share what is perceived to be desirable with the researcher, and to avoid causing offence or provoking adverse judgements. Such effects are common in development research and practice. The power distance between researchers and members can be particularly pronounced, and this can establish roles of compliant recipient and powerful donor (Chambers, 1995; Mosse, 2004). Hence, in the interviews and the SRQ it is possible members chose to moderate expressions of pride and self-esteem and focus more on perceived 'positive' motivations such as community service.

In addition, it is likely cultural norms inhibited open dialogue on feelings of pride, which in Malawi culture may be perceived negatively as arrogance. Booth (2006) labelled this

[50] This is also an example of multiple motivation types, Charles in this example has described both external (being commanded by others) and introjection motivations (a personal sense of duty).

as akin to the tall poppy syndrome and noted it was particularly pronounced in collectivist Malawi culture, where individuals are expected to know their place. I found evidence of such norms among WPC members in their responses to trials of the SRQ. When asked for feedback on the SRQ, members objected to being asked "I participate because I want to feel proud of myself". Members indicated a positive answer to this question was an admission of being haughty and an unacceptable question to respond to. Based on discussions with the research assistant, the language was changed to what a Chichewa expression akin to "pleased with myself". Although the language was different, we decided it conveyed the sentiments of the original question in a more acceptable manner. There was a contradiction between members' responses to the survey question and their responses in the interviews, which I am unable to explain. In the interview setting, multiple members discussed feelings of pride or self-worth, both directly, for example, "I felt proud" and indirectly, "others saw potential in me".

In summary, approach introjected motivations in the form of feelings of pride were experienced by most members because of being elected (i.e. pride as an outcomes). Beyond election, pride remained on ongoing driver for most members, though pride motives had variable quality. When supported by positive feedback and a sense of efficacy, pride motives were sustained and tended to have a more autonomous nature. In contrast, controlling aspects of the environment were associated with more extrinsic forms of pride. For example, controlling political environments, conflictual relationships with users and a failing water point had placed pressure on WPC members' sense of pride. In these examples, there was limited evidence of WPC effectiveness, and pride motives were more concerned with the status of the position as opposed to performance and hence tended towards the more external end of the approach introjection.

5.4 Avoidance introjected motivation: avoidance of shame or disappointing others

SDT describes the increasingly tenuous nature of motivation as it becomes more externally driven. Avoidance introjection is a controlled motivation, and introjection is

derived from Latin words *intro*, which translates to "into" and *jacere*, "to throw", hence the experience is one which people feel as if values or goals are thrown onto them (Assor et al., 2009; Vansteenkiste et al., 2010). It is typically correlated with a fragile ego, and with attempts to meet standards to avoid feeling ashamed, unworthy, or guilty (Assor et al., 2009; Gagné & Deci, 2005; Sheldon et al., 2017). Introjection can be correlated with a sense of competence and relatedness satisfaction; however, autonomy satisfaction is absent (Ryan & Deci, 2000b). Instead of a feeling of volition associated with behaviour, the experience is one of feeling pressured, and this limits the internalisation of introjected behaviour.

The significance of avoidance introjected motivations is shown below in Table 10. Based on the interviews, no members experienced high levels of avoidance introjection motivation, five of 12 members experienced moderate levels, six low, and one inconclusive. Language used by members reflected feelings of social pressure, including the desire to avoid disappointing others and concerns about feeling judged. These experiences were most commonly experienced with respect to others within the community, though it also included NGOs.

Table 10: Significance of avoidance introjected motivations for all WPC members

WPC member name	Location	SRQ – avoidance introjection category	Interview – avoidance introjection category	Consistency between SRQ and interview
Esther	Chilaulo	Low 1.8	Low	Consistent
Grace	Chilaulo	Low 2.5	Low	Consistent
Charles	Galufu	High 5.5	Moderate	Moderate
Trish	Galufu	High 5.5	Low	Inconsistent
Wisdom	Nkhumba	High 5.5	Moderate	Moderate
Palesa	Nkhumba	Low 2.5	Low	Consistent
Francis	Nanchopwa	Moderate 3.5	Low	Moderate
Annie	Nanchopwa	High 5.5	Moderate	Moderate
Paul	Malekuwa	Moderate 4.0	Moderate	Consistent
Cynthia	Malekuwa	Moderate 4.0	Low	Moderate
Olivia	Helema	High 5.5	Inconclusive	Inconclusive
Hendreson	Helema	High 7.0	Moderate	Moderate

Based on the SRQs, five of the 12 members experienced high levels of avoidance introjection drives, four experienced moderate levels and three low. The language used in SRQ questions sought to establish whether participation on the WPC was for reasons of avoiding feelings of failure, shame, guilt or feeling bad about oneself. Across the interviews and SRQs, five of 12 findings were consistent, four were moderately consistent, two were inconsistent and one finding was inconclusive. Although findings were generally consistent between the two data sources, the SRQ captured greater levels of avoidance introjection motivations than the interviews.

External motivation and avoidance introjection motivation lie adjacent to each other on the SDT continuum. The two motivation types have been shown to be conceptually and statistically close in previous SDT research (Gagné et al., 2015; R. M. Ryan, personal communication, 27 February 2020; M. Vansteenkiste, personal communication, 3 February 2020). Practically, this presented challenges when coding WPC motivations driven by social rewards or punishment, such as members' motivations being driven by "not wanting to disappoint important others" like the village head, or other community members. The SDT literature is inconsistent in classifying such examples. Sometimes they are classified as external because they reference an 'other', and sometimes they are seen as relevant to introjection as ego-related statements. Because of this, there was some ambiguity in the coding of text fragments in these categories.

The final coding approach was decided with input from SDT experts via the SDT listserv, and the literature review. An external motivation code was used when the reward or punishment was administered from an external source, including social pressure (e.g. "the village head would be disappointed"). Where the source was internal, including attitudes towards how others may have been perceiving the member, responses have been classified as introjection (e.g. "I don't want to disappoint the village head"). In this latter example, the individual behaviour was driven by a feeling of "should" (introjected), rather than "have to" (external). The introjected example can also be conceptualised as the individual punishing themselves rather than an important other doing so (R. M. Ryan, personal communication, 27 February 2020). When the

delineation was still ambiguous, full interviews and interview notes were reviewed to examine the context of responses, and coding was adjusted where needed.

5.4.1 Avoiding shame or disappointing others in the community

Of the five members who reported moderate avoidance introjection, four described avoiding shame or avoiding disappointing community members (either users or the village head). Avoidance was linked to their initial election, and members' fear of disappointing those who expressed confidence in them. For example, Paul in Malekuwa noted "the chief nominating us means that he trusted us ... and therefore, I do not want to leave and disappoint him". Similarly, Annie noted that "if you do not value [the role], you disappoint the people". These experiences are congruent with Ryan and Deci's (2017, p. 186) description of introjection: "individuals often project their self-approval [approach] or self-disapproval [avoidance] onto others, imagining that these others will approve or disapprove of them as a function of their behaviour". Members' concerns about the views of the village heads or users meant their inner standpoint was fragile and their motivations were unstable.

Indeed, users had disapproved of WPC members and their performance. Because WPCs collected money from users, had a relatively high stakes role, and some users had limited understanding of the inner workings of the WPC, user trust was tenuous and the potential for blame of members was high. It is likely this precarious situation reinforced experiences of avoidance introjection drives, and made it difficult to further internalise motivations. I discuss these elements of user trust later in my analysis on the motivational climate in Section 6.1.2

5.4.2 Avoiding disappointing donors

Most WPC members were concerned about what others might have expected in terms of bureaucratic approaches to water point management (e.g. bookkeeping, maintenance, regular meetings). This was projected onto me as an outsider. Several respondents were reluctant to admit to me they did not have certain documentation, or had minimal savings. However, only one WPC member in Helema and one in Nkhumba were explicit in referring to the importance of donor perceptions in motivating

participation. For example, Hendreson in Helema described the importance of the WPC's role in maintaining donated water supply infrastructure:

> *A good depiction of our scenario can be in this form: imagine you desperately need a shirt and someone decides to give you one. What better way is there to show your gratitude other than to take care of the shirt and wash it regularly? That's why we take good care of our borehole.*

The absence of references to donors (i.e. NGOs) was surprising. In the case of Chilaulo and Galufu this was somewhat expected. The boreholes had been installed over ten years ago, and hence the NGO role was less salient. However, the Nkhumba borehole and Phalombe village borehole was relatively current, and as a result I had expected more references to the importance of the donor in regard to motivations.

Instead, across all sites, it was animators or village heads[51] who reflected most on the NGO role and their impact on motivations, not WPC members. This was because the majority of interactions between the community and NGO actors were managed by animators and village heads. Most WPC members had few interactions with NGO actors. I return to the significance of this finding in more detail as part of the analysis of the motivational climate in Section 6.5. Briefly, it suggests internal village relationships were more relevant for WPC motivations than WPC–NGO relationships. It is likely this becomes more pronounced with time, following the cessation of NGO involvement.

5.4.3 Inconsistencies in SRQ and interview findings

As noted at the start of this section, the SRQ mostly predicted higher levels of avoidance motivations than did the interviews. There were six examples of high avoidance introjected motivations in the SRQs and none in the interviews. In the SRQ findings, experiences of avoidance introjection motivations were the second-most significant experience after identified motivations.[52] It is possible that I failed to grasp the significance of avoidance motivations in members' interview responses, and hence did not give these motivations adequate focus or follow-up probes at the time of the

[51] Noting the exceptions in Helema and Nkhumba.

[52] Based on a score of between one (not at all true) and seven (very true), the average response was 5.6 for identified motives and 4.4 for avoidance introjection motives. A full summary of motives is discussed later in Section 5.7.

interviews. The discrepancies between the SRQ and interview findings also highlight a potential limitation of the interview design and format. In the interviews, when members discussed the challenges of WPC participation, their focus was usually pragmatic, for example, challenges in regard to relationships with users, or anticipated challenges associated with major repairs. By contrast, the focus of questions in the SRQ was on fears – feeling guilt, shame, a failure, or feeling bad about oneself. The interview questions did not touch on this nuance, and hence these feelings were not discussed unless raised by members. Consequently, it is possible the interviews would have benefited from a more deliberate line of inquiry into avoidance introjection motivations, or from the use of alternative methods to surface such fears. Finally, inconsistencies may also be due to coding nuances. As discussed earlier, external and avoidance motivations are conceptually close. 'Messy' human experiences and subsequent interview responses do not necessarily fit into one distinct category or code. Hence, it is also possible some responses that were coded as external belonged in the avoidance introjection category.

When avoidance introjection motivations were discussed, the pressure that accompanied such feelings was clear. Members described motivations to avoid "disgrace" and "blame" from either donors or other community members. For some, avoiding the loss of self-esteem appeared to be a constant stressor of the role. There is a stark contrast between such experiences and the language associated with intrinsic motivations (e.g. "enjoyable" and "interesting"). Hence, these experiences appear consistent with SDT research which associates avoidance introjection motivation with reduced vitality and well-being (Nix et al., 1999; Sheldon et al., 2004).

5.5 External motivation: lack of material punishments or rewards, presence of social regulation

External motivation is the prototypical example of extrinsic motivation. It refers to behaviour contingent on reward or punishment, of either social (e.g. "when the boss is watching I work") or material (e.g. "I work for the financial bonus") forms (Deci & Ryan, 2000; Gagné et al., 2015). Multiple studies have demonstrated the undermining effects

of task-contingent rewards or punishments. Typically, when externally motivated, individuals feel limited ownership of their behaviour, and as a result behaviour is less likely to persist once the reward or punishment is removed (Sheldon & Prentice, 2019). Importantly, external contingents can also undermine intrinsic or more internalised motivations (Ryan & Deci, 2000b).

The significance of external motivations is shown below in Table 11. According to the interviews, three of the 12 members experienced high levels of external motivation, five experienced moderate levels, three low, and for one member the findings were inconclusive. Members' language associated with external motivation included "blame", "convinced [by others]", "avoid disappointment [from others]", "and show gratitude [to others]". Themes of responses were focused more on loss and gain than on feeling 'good' or 'bad', as is associated with introjection. Members also stressed the voluntary nature of the role and hence the absence of material extrinsic motivations.

Table 11: Significance of external motivations for all WPC members

WPC member name	Location	SRQ – external category	Interview – external category	Consistency between SRQ and interview
Esther	Chilaulo	Low 2.5	Low	Consistent
Grace	Chilaulo	Low 1	Moderate	Moderate
Charles	Galufu	High 5.5	High	Consistent
Trish	Galufu	Moderate 4	Low	Moderate
Wisdom	Nkhumba	Low 2.5	Moderate	Moderate
Palesa	Nkhumba	Low 2.5	Moderate	Moderate
Francis	Nanchopwa	High 7	Inconclusive	Inconclusive
Annie	Nanchopwa	High 7	High	Consistent
Paul	Malekuwa	Low 2.5	Moderate	Moderate
Cynthia	Malekuwa	Moderate 3.75	Low	Moderate
Olivia	Helema	High 6.25	High	Consistent
Hendreson	Helema	High 7	Moderate	Moderate

Based on the SRQ findings, five of the 12 members were highly motivated by external drives, two were moderately motivated by external drives and five had low external motivations. The SRQ referred to experiences of external motivation in the form of

participation in the WPC to avoid getting into trouble or making others angry, to be liked by an important other, or an absence of choice. Comparing the SRQ and interview findings, four of the 12 findings were consistent, seven were moderately consistent and one finding was inconsistent. Compared to the interviews, the SRQ was moderately consistent, and it over- or underestimated extrinsic motivations in approximately equal measure.

5.5.1 Members emphasised the voluntary nature of the role

WPC members often sought to highlight the voluntary nature of their role. In interviews, all members reported minimal forms of external motivation in the form of material rewards or punishment. Instead, members differentiated between being paid and being of service to the community. For example, Paul in Malekuwa noted "to serve in the committee is just our kindness, [it's] not to be paid". When asked what advice he would give to other WPCs, Francis in Nanchopwa responded "they should be strong and never give up. I would also tell them that this is a non-salaried job so their motivation should not be anything other their love for the community". Grace in Chilaulo explained her motivations to stay in the role as "not [because of] pay, [but] because we are all beneficiaries of the borehole. So we neither need to be paid for the services rendered, nor need to stop because they are not paying us". Similarly, the village head in Chilaulo explained "they are not paid, and what motivates them is their responsibility for their village and the feeling of accomplishment, because without the borehole people will suffer in the village and lack clean water". SDT academic literature argues that the absence of material rewards does not necessarily indicate the role is without rewards. Although material rewards were not part of participation in the WPC, other less tangible rewards like status, enjoyment and improved water supply were salient, as I describe in this chapter.

The lack of external material motivations was in part symptomatic of the self-selection of participants and the absence of external incentives in the project. Regarding self-selection, WPC roles are voluntary, and because of this the roles are more likely to attract those motivated by pro-social motives than by rewards such as salary. As I

discussed in the limitations in Section 4.7, I selected *existing* WPC members as participants, as opposed to those who had left or been removed from the committee.

Regarding the absence of external incentives, Edith, the animator in Malekuwa, explained, "three members, led by the chairperson, dropped out because they had expectations of some benefits like a salary". In Helema a new WPC had been appointed after the previous committee had been dissolved because of suspected corruption. Low external motivations alongside an absence of material incentives are consistent with conclusions drawn by Sayanagi and colleagues. They compared two agricultural development projects and found the project that did not provide handouts had a comparatively lower level of external motivation (Sayanagi & Aikawa, 2016; Sayanagi et al., 2018). They argued handouts undermined the internalisation of behaviour and encouraged external motivations (Sayanagi et al., 2018). Hence, I concluded that both self-selection and the absence of external incentives in the Malawi case villages resulted in an absence of external motivations amongst those interviewed.

Regardless, all WPC members were keen to point out the absence of material external motives. Why was this the case? First, as noted, the position was voluntary. Most WPC members had endorsed the service nature of the position and understood the absence of salary, as was evident in high levels of identified motivation for all members. Second, members emphasised the lack of external rewards to establish their integrity. Financial transparency and associated trust[53] are expectations of WPC roles. Donors and governments expect WPCs to be transparent regarding finances, as a means to minimise corruption and to build trust with users. My identity as an outsider likely perpetuated members' efforts to establish their integrity and the voluntary nature of their role.[54]

5.5.2 Donor power and resources motivated participation

[53] I discuss the role of user trust and its importance to the motivational climate Chapter 6.
[54] At times this was further compounded by the research assistant who (despite my efforts) would often press respondents on possible benefits they might be deriving from the role.

Although material rewards were absent, WPC members did discuss external social pressures as motivations for participation. In the case of Wisdom in Nkhumba, he was concerned with inciting disappointment or blame from CADECOM. He felt that poor management would be viewed poorly by CADECOM:

> *The people who brought this borehole to us, they clearly understood our problems. What would such people think if they were to see members of the community, they spent their money on, ignore the help they have been given? What would they think if they saw the members of the community not take care of this borehole?*

Wisdom's response was indicative of development norms. Active participation of community 'beneficiaries' is expected as part of NGO–community relations in participatory development. It gives them 'skin in the game' and is used as a proxy by NGOs for community commitment to projects. Community members were expected to contribute land, labour and materials for construction, and a commitment to ongoing the management of the water point. While in return CADECOM provided funding, influence, and training resources.

The extent of poverty and the absence of government services meant demand for support from organisations like CADECOM was high. As a result, CADECOM (and other similar donors) were perceived as the more powerful actors in the relationship with community participants[55] – and CADECOM staff did use their power. One staff member discussed moving a water supply intervention from one village to another. The original village had failed to meet its obligations under the 'agreement' and had not mobilised bricks for the project – a signal of their commitment in the form of a material contribution. Similar approaches are noted by Peters and Eliasov (2014, p. 69) whose training manual was used for the AACES Malawi project:

> *Outsiders (government departments, NGOs etc.) will prefer to work with those communities that have … energy and motivation. They will visit those communities first and respond to them first.*

[55] Such dynamics between development agencies and participants are criticised by post-development scholars, who argue donors are constructed as those holding power whilst "beneficiaries" are less powerful and their role is of compliant subjects (Cahill, 2010; Chambers, 1995; Escobar, 1995).

Wisdom's earlier response showed he was aware of the importance of community maintenance. However, his rationale for "[taking] care of the borehole" was focused on avoiding disappointing CADECOM, rather than more internalised motivations.

5.5.3 Social pressures from within the community motivated participation

Four members were concerned with approval or pressure from users and peers. This included fear of failure and the subsequent social consequences. Responses to the external motivation SRQ questions suggested members were marginally more concerned about making others mad (highly significant) than having others like them (moderately significant).

The significance of the WPC role, and the fact that WPC members lived within the communities, exposed them to judgement from peers. When Paul from Malekuwa was asked why he persisted in the role, he responded "we remain committed because if the borehole is to stop functioning, we are the ones to be *blamed* [my emphasis] not outsiders". Similarly, Olivia from Helema said "the committee that was there before us failed and was disgraced and dissolved. We don't want the same fate to befall us". Annie in Nanchopwa described her social approval as supportive on balance, so she continued to volunteer "if you compare them, those that respect me outnumber those that disrespect me. Therefore, it's my personal choice to continue in order to repay those that respect me". For Charles it was external pressure which encouraged him to continue to participate: "I don't know why the people feel that I should continue leading the group. I would say that, maybe they do have valid reasons about the way we are serving on the WPC, and want me to proceed with the same work".

These responses revealed how WPC members felt controlled by their relationships with users. Users held power and accountability via their approval or disapproval of WPCs. Users could also express their power through payment or non-payment of tariffs, as noted by an area mechanic in Nanchopwa: "users … become suspicious and this can lead to default of payment of monthly contributions. This can also be a form of silent

protest". Social pressure did drive WPC participation[56]; however, it clearly came with a cost. For WPC members, accountability coexisted with feelings of pressure and this further entrenched being 'other' (i.e. externally) orientated. It also appeared to result in fragile and often conflictual WPC–user relationship.

Regarding relationships, WPC members were mostly concerned and motivated with respect to users' and village leaderships' approval or disapproval. WPC–user and WPC–leadership relationships were more significant than those with NGO partners or district water staff. Indeed, members' interactions with external agencies were seemingly minimal beyond the establishment of the water point. Instead, village leaders and animators managed relationships with external stakeholders. In Chapter 6 I examine the nature of the WPC–village leaders (e.g. animators, village heads), WPC–NGO, and WPC–user relationship and their effect on motivations in more detail.

In summary, for WPC members external motivations were primarily related to concern with being blamed by others in their community for failing to manage the water point. Material rewards or punishments were not salient for members because of the voluntary nature of the role and the self-selection of WPC members. Members had accepted that the roles were voluntary and came without salaries. The following section describes the last of the motivation types, amotivation.

5.6 Amotivation: limited examples of amotivation

Amotivation is an absence of motivation. It can be driven by a lack of perceived value of the behaviour in question (e.g. "I'm just not interested in the work"), or a perceived lack of competence (e.g. "I gave up when I didn't even know where to start"). The significance of amotivation for members is shown below in Table 12. Amotivation was largely absent for WPC members. Based on interviews, none of the 12 members experienced high levels of amotivation, two experienced moderate levels, and ten

[56] Although social pressures links with WPC performance were uncertain.

members experienced low levels. In the moderate examples, amotivated members questioned why they participated on the WPC.

Results from SRQs found no members were highly amotivated, three of 12 members were moderately amotivated and nine were low in amotivation. The four amotivation SRQ questions focused on having no reason to participate on the WPC. Comparing surveys and interviews, nine findings were consistent and three moderately consistent. Hence, the SRQ measures of amotivation tended to be consistent with the descriptive amotivation experiences of the WPC members. In the sections below I expand on members' experiences of amotivation.

Table 12: Significance of amotivation for all WPC members

WPC member name	Location	SRQ – amotivation category	Interview – amotivation category	Consistency between SRQ and interview
Esther	Chilaulo	Moderate 3.25	Low	Moderate
Grace	Chilaulo	Low 1.75	Moderate	Moderate
Charles	Galufu	Moderate 4.75	Moderate	Consistent
Trish	Galufu	Moderate 4	Low	Moderate
Wisdom	Nkhumba	Low 1	Low	Consistent
Palesa	Nkhumba	Low 1.25	Low	Consistent
Francis	Nanchopwa	Low 1	Low	Consistent
Annie	Nanchopwa	Low 1	Low	Consistent
Paul	Malekuwa	Low 1	Low	Consistent
Cynthia	Malekuwa	Low 1.5	Low	Consistent
Olivia	Helema	Low 1	Low	Consistent
Hendreson	Helema	Low 1.75	Low	Consistent

5.6.1 "Nothing interesting in the role"

Grace in Chilaulo was one of two participants who described amotivation experiences in interviews. However, she scored low in the SRQ in regard to amotivation. When asked in her interview why she continued on the WPC in the face of challenges, she responded "there is nothing interesting about being a committee member … Yeah, at many times it really feels like a burden". Hence, she described both amotivation and an

absence of intrinsic motivation.[57] Grace's response was in the context of challenges with users. In her case, it was not clear if amotivation was due to an absence of value associated with the role, or competence challenges associated with WPC–user relationships. Nonetheless, my diary notes reflect difficulties with Grace's interview. Although she had noted that she valued access to water as a user (i.e. identified motivations), the interview failed to gain traction in our discussion as her motivations for participation were unclear, despite my multiple probes and reframing of questions.

5.6.2 Amotivation in Galufu and lack of competence

Both Charles and Trish in Galufu had moderate amotivation according to their SRQ responses. This was expected, as the context in Galufu was particularly challenging and had placed pressure on their autonomous motivations. As discussed earlier, two of three water points in Galufu were dry, while the third provided only 20 litres of water every three hours. To put these flow rates in perspective, Bonsor and colleagues (2018) described an acceptable yield for a handpump as greater than ten litres per minute. Regular user financial contributions had stopped, and the majority of the WPC had left or were inactive, the exception being Charles the chairperson and Trish a member, who despite these challenges, surprisingly, had continued to be active. In part, their persistence in the WPC was a result of pro-social motives to support four elderly residents who lived adjacent to the borehole, and continued to use it. Charles noted:

> *It is not that the borehole stopped functioning completely, but just the water is inadequate, you can hardly fill a bucket from this borehole. So the elderly who cannot walk to the next borehole of another village and also those who do not need much water are served by this borehole.*

This pro-social motivation, serving the elderly, drove participation for Charles and Trish up to a point. The environment meant their effectiveness as a WPC was compromised. At the time of the interviews, Charles saw no avenues to change the situation, he had started to disengage from the role, and he questioned if he would continue. These experiences are typical of amotivation experiences driven by the frustration of

[57] This response is in contrast to intrinsic motivation which is associated with volition and interest.

competence. Sheldon and Prentice (2019) describe feelings of helplessness or hopelessness which accompany amotivation. Such feelings were evident in Charles's SRQ findings and his interview response when asked why he continued to lead the mostly absent WPC:

> *Sometimes I consider handing over to another person … In addition, in our ability we had been requesting different organisations for help including CADECOM, but to no avail. As such we [the WPC] cannot do anything.*

The experiences of Charles and Trish provide an unfortunate but useful illustration of how higher quality motivation is eroded. They described historical experiences of autonomous motivations, based on their interest in the role and training opportunities. These motivations became less salient as the emerging challenges of the context began to dominate their experiences of participation.

In the following section I step back to generalise on the motivation findings and discuss motivation themes more broadly across villages and individuals.

5.7 Composite motivation findings

In this section, based on the findings above, I evaluate motivation trends more generally. First, I summarise the prominent motivation types and experiences across all village sites. Second, I determine the general motivation orientation of each member (i.e. if a member is autonomous or controlled in their motivations) and discuss themes of motivation orientation in each village.

5.7.1 Significance of motivation types across all members

Table 13 summarises the prevalence of each motivation type across all WPC members. Three themes from this data stand out: a high prevalence of identified motivations, low levels of amotivation, and moderate levels of other motivation types, with consistent relevance of social pressures as a motive. These themes are discussed below.

Table 13: Summary of motivation types at all sites

Motivation type	Motivation experience	Prevalence of motivation type in SRQs[A]	Prevalence of motivation type in interviews
Intrinsic motivation	- Working with others - Interest in learning - Creative activities	Moderate 4.2	Low-moderate
Identified motivation	- Benefits as a user - Pro-social motivations	High 5.6	Moderate-high
Approach introjected motivation	- Pride in the position - Pride based on unique skills	Moderate 4.1	Moderate
Avoidance introjected motivation	- Avoidance of shame regarding others in community - Seeking to please donors	Moderate 4.4	Low-moderate
External motivation	- Social approval or disapproval - Avoiding donor disappointment - Lack of external rewards	Moderate 4.3	Moderate
Amotivation	- Disengagement or lack of clarity on reasons for participation	Low 1.9	Low

A: Numerical values are averaged across all members, range of values is between 1 (not at all true) and 7 (very true)

Identified motivations were most prevalent

Identified motivation types were the most prevalent in the interviews and the SRQ. Across most communities, members discussed identified motivations as an overarching motivation for participating in the committees and managing the water points. Two specific identified motivations were significant for members. First, they benefited from a functional water point as users through reduced water collection times and improved water quality. This motive is consistent with existing assumptions concerning rural water supply and CBM approaches, where the vested interest in an improved water supply is considered to motivate management practices (Carter et al., 1999; Lockwood et al., 2003; Moriarty et al., 2013). Members also valued the pro-social benefits of the role. Although this latter motive has received less attention in RWS literature, it is not

altogether surprising considering the voluntary nature of the role. As Francis described it, "[it] is a non-salaried job so their motivation should not be anything other than their love for the community".

Further, the significance of identified motivations was consistent with previous research which applied SDT in development programs. Sayanagi and Aikawa (2016) researched the motivations of Japanese and Kenyan field officers and farmers for participating in an agricultural program. They found similar salience of farmers' identified motivations compared to other motivation types, including valuing outcomes of the program for themselves (farmers); and pro-social 'other'-orientated motivations, particularly among the Kenyan farmers.

Amotivation was low

Amotivation levels were low in the SRQs and mostly absent from interview responses across all participants. Chilaulo and Galufu villages were two exceptions. These WPCs had a difficult relationship with users, a controlling village head, and poorly performing handpumps with low or close to non-existent yields. Amotivation is typically a result of either an absence of perceived value of behaviour, or a perceived absence of competence (self-efficacy) (Ryan & Deci, 2017). As the perceived value of an improved water supply (i.e. identified motivations) was generally moderate in Chilaulo and Galufu, the main source of amotivation came from competence threats.

Other motivations were moderately significant and mostly concerned with social pressures

Approach introjection, avoidance introjection, and external motivations were moderately significant for all members. Most of these motivations were experienced in the context of actual or perceived social rewards and pressures. These included feelings of pride associated with user compliance, not wanting to disappoint users (or less commonly, donors), and wanting to avoid the disgrace associated with a failed WPC or water point. The day-to-day responsibilities of the WPC role were at times associated with feelings of pressure. Few members appeared to value mundane activities such as bookkeeping and preventative maintenance where the rationale was not immediately

obvious. Instead, such activities tended to be linked with external expectations from users and donors and were often described in controlled terms.

5.7.2 WPC members' composite motivations and village themes

Composite motivations give a general picture of members' motivation regulation, it shows if their motivations are autonomous or controlled. In order to determine the composite motivation orientation of each member, I used the relative autonomy index (RAI) (Sheldon et al., 2017). As described in the methods in section 4.5.5, the RAI aggregates the individual SRQ scores (from Table 7 to Table 12) for each member. The more controlled the motivation regulation, the more negative the RAI. Conversely, the more autonomous the motivation regulation, the more positive the RAI score (Grolnick & Ryan, 1987; Sheldon et al., 2017). Hence, I used the RAI composite score to determine if, and to what degree, WPC participation for each member was driven by autonomous or controlled motivations.[58] In Table 14 I summarise for each member the composite scores and descriptive measures (low, moderate, high). A similar descriptive measure for interviews is also shown in Table 14 as a comparison, along with an assessment of the consistency between RAI and composite motivations based on interviews.

Table 14: Significance of autonomous and controlled motivations for each WPC members

Name	Location	RAI: composite motivation orientation based on SRQ[59]	Composite motivation orientation based on interviews	Consistency between RAI and interview
Esther	Chilaulo	Neutral 0	Low autonomous	Moderate / consistent
Grace	Chilaulo	Low autonomous 5.3	Low controlled	Moderate
Charles	Galufu	Moderate controlled -6.3	Moderate controlled	Consistent
Trish	Galufu	Low controlled -3.5	Low controlled	Consistent
Wisdom	Nkhumba	Low autonomous 0.8	Low autonomous	Consistent

[58] As described earlier, the RAI is calculated by adding the scores for all the autonomous motives (intrinsic, identified and approach introjection) and subtracting each controlled motive score (avoidance introjection, external and amotivation). This gives a possible score of between -18 (highly controlled) and +18 (highly autonomous).
[59] RAI values range from -18 (highly controlled) to 18 (highly autonomous).

Palesa	Nkhumba	Low autonomous 4.8	Moderate autonomous	Moderate
Francis	Nanchopwa	Low autonomous 4.3	Moderate autonomous	Moderate
Annie	Nanchopwa	Low autonomous 4.5	Low autonomous	Consistent
Paul	Malekuwa	Moderate autonomous 8	Low autonomous	Moderate
Cynthia	Malekuwa	Moderate autonomous 8.5	Moderate autonomous	Consistent
Olivia	Helema	Moderate autonomous 7.3	Low autonomous	Moderate
Hendreson	Helema	Low autonomous 4.5	Moderate autonomous	Moderate

Although not directly assessed in Table 14, composite motivation regulation is relatively consistent within villages. For example, in most cases (with the exception of Chilaulo), for each village, members are either autonomous or controlled in their motivations, though there is some variation between members in the level of their motivation type. Because of this, it is possible to generalise and compare composite motivations across villages. I found two distinct groups: villages with instances of controlled motivations (Galufu and Chilaulo) and those with low-to-moderate autonomous motivations (Helema, Malekuwa, Nanchopwa and Nkhumba). I discuss both groups below.

Esther from Chilaulo, and Charles and Trish from Galufu had the three lowest RAIs as seen in Table 14. Notably, the RAI for both Galufu members was negative. The controlled motivations in Chilaulo and Galufu were somewhat expected, based on reasons already discussed in the individual motivation types. Both villages had challenging contexts, including controlling village heads, mixed or conflictual relationships with users, and poor water yields from handpumps. In addition, both had boreholes which had been installed over 13 years ago, meaning initial enthusiasm had likely dissipated and some of the challenges associated with management had become evident. In Galufu, the failed water point brought significant difficulties for the WPC. Because of this, Chilaulo and Galufu were the only two locations where experiences of amotivation were reported in interviews.

In the case of Grace in Chilaulo, there was some contradiction between her SRQ result (low autonomous motivations) and her interview responses (low controlled motivations). Her RAI score was the third-most autonomous out of the 12 participants, and it bordered on moderately autonomous. However, in her interview she noted there was "nothing interesting" in the WPC role and noted some aspects of the role at times "really feel like a burden". She gave only limited indications of autonomous motivations in her interview. The interview with Grace was challenging in terms of getting detailed responses. Consequently, it is difficult to determine if inconsistencies were because the interview elicited understated autonomous motivations, or because the SRQ findings conflated her autonomous motivations.

Helema, Malekuwa, and Nanchopwa formed part of the second group of WPCs (in addition to Nkhumba) and had low-to-moderate autonomous motivations. These findings were somewhat expected. These three WPCs all had similar contexts, which in part explains their similar levels of motivation. They were all in Phalombe district and in close proximity to each other (less than 12 kilometres apart). None had controlling village heads; the boreholes were all installed under the AACES program, were less than four years old at the time of interviews, and had been installed at a suitable depth and provided an acceptable flow rate. None of these WPCs had experienced the significance of the challenges seen in Galufu and Chilaulo. As I describe in Chapter 6, the context in the three Phalombe WPCs was generally favourable, and this in turn likely contributed to their low-to-moderate autonomous motivations.

The Nkhumba WPC was also part of this second group. Its members also experienced low-to-moderate autonomous motivations. Although located in Blantyre district, like the Phalombe villages, the Nkhumba WPC did not have a controlling village head, the borehole was relatively new and it was producing a suitable yield. The committee had a regular income from users and additional income from a brick factory water user. In addition, an area mechanic lived next to the water point. Hence, they had a supportive motivational climate compared to other villages. As I discuss later in Chapter 8 , Nkhumba had the best-performing WPC of all WPCs, and hence it was unexpected to

find the WPC chair had a relatively low RAI compared to other members. It was the fourth-lowest overall, and although still autonomous, it was bordering on low controlled). In his case the low RAI was principally driven by higher levels of avoidance introjection motivation in the SRQ, while interviews indicated these were experienced as concern with disappointing donors.

Taking a broader view of motivation regulation across all villages, there is a notable absence of extreme controlled or autonomous motivations. Most WPC members were low, or low to moderate, regarding either their overall autonomous or controlled motivations, this was reflected in a relative absence of extremes in individual motivation types. As discussed above in Section 5.7.1, most members' motivation types (e.g. intrinsic, introjection types, and external) were moderate. With notable exceptions of an absence of amotivation and high levels of identified motivations.

Before summarising this chapter, I include a vignette of Cynthia's (Malekuwa) motivational experience and relevant aspects of her context which affected her motivations.

5.8 Vignette: Cynthia in Malekuwa

Cynthia is a 30-year-old woman and has been secretary of Malekuwa WPC since its inception in 2013. We met on five occasions: in an introductory meeting, in the interview, for the SRQ, in the workshop, and in follow-up discussions. The photo of Cynthia in Figure 17 was taken prior to administering the SRQ in Malekuwa. In the sections below, I only discuss motivations and aspects of the motivational climate which she indicated were important in the interview. I chose Cynthia as an example because her motivation rationale was expressed relatively clearly in her interview. In addition, her motivation experiences were somewhat representative of the WPCs which experienced low-to-moderate autonomous motivations.

As noted at the beginning of this chapter, the structure of the analysis presented so far, while logical, disguised the nuances of members' experiences of diverse motivations.

The vignette aims to provide an illustration of a more complete and human representation of motivation experiences. Due to length limitations associated with this doctoral research, I have limited the vignette to Cynthia only. There is inevitably some overlap with Cynthia's responses already discussed in this Chapter. However, the aim of the vignette is to provide a more complete picture of an individual member's motivations, and so the limited repetition has been included. I start the discussion with a summary of her overall motivation orientation.

5.8.1 Composite motivation finding

The relative autonomy index (RAI) provided a composite motivation for Cynthia based on her SRQ results. The RAI indicated the degree motivations to participate in the WPC are autonomous or controlled. The scale ranges from -18 (highly controlled, low autonomy) to +18 (highly autonomous, low controlled). Overall Cynthia's autonomous motivations were high and her controlled motivations were moderate, resulting in an RAI of 8.5, equivalent to moderate levels of autonomous motivation. This score was higher than those of all other participants. SRQ findings were consistent with Cynthia's experiences shared in the interview. I discuss salient motivations from the interview below.

5.8.2 Identified, pro-social motivations were significant

Cynthia acknowledged the pro-social nature of the WPC as a reason to engage in the WPC role: “a volunteer is to help the community ... I knew it is volunteerism from the beginning ... it is my personal choice to partake on the water committee”. She empathised with the challenges users faced. In the absence of a village borehole, users in Malekuwa previously had two options: lengthy travel to a better source, or water from closer unhygienic sources. Cynthia was concerned with the risks associated with the latter: “water is life, if the borehole stops functioning it will bring challenges to the users, because they will have to access water from the old water source”. She also viewed her role as relevant and linked her efficacy to these challenges “[because of such challenges], we want to repair and maintain [the handpump] the same day in case of damage”. The speed with which the Malekuwa completed repairs was confirmed by users who reported the WPC organised the repair of the handpump within 24 hours.

Figure 17: Meeting with Cynthia for the SRQ questionnaire

Cynthia’s linking of her motivations with her behaviour and efficacy was significant. Other WPC members I interviewed noted pro-social motivations, but were vague in describing their roles and contributions. Hence, it was not clear what they did to help others.

Cynthia also valued the ability to develop skills through the WPC. These were discussed in less detail than pro-social motivations but nonetheless were a reason for participation. Competencies included communication and leadership (“I think am only benefiting through the improvement of communication and coordination skills”). These skills were developed through the working relationship with the community. Hence, the

committee role gave the structure needed to satisfy both her learning and leadership skills.

Pro-social, learning[60], and leadership motivations are consistent with identified motivations in SDT. In identified motivations, the behaviour is valued; it holds importance and is congruent with personal goals and identities (Ng et al., 2012; Ryan, Patrick, et al., 2008). Based on the interviews, identified motivations were the most significant motivator for Cynthia. Volunteering was important as it supported her values and her care for others' well-being in the village.

The interview responses were aligned with Cynthia's SRQ responses. Identified type questions in the SRQ were designed to reveal if her participation was based on personal choice, if her participation was valued, and if the WPC role was important to her. Cynthia's responses to the questionnaire returned the maximum score of 7 regarding identified motivation. Hence, the SRQ findings expressed a similar, though less nuanced, impression compared to Cynthia's interview responses.

5.8.3 Introjected motivations – feelings of pride associated with participation

Cynthia also described pride-based motivations for participation. However, these motivations were less pronounced than her pro-social motivations. Her feelings of pride were initially evident in being chosen for the role:

> *When the borehole was installed, the village head called for community gathering ... I was [...] elected ... I felt proud because it was my first time to be in the [WPC] and that meant that people saw some potential in me.*

However, a sense of pride continued as positive feedback from participants validated her efficacy in the role:

> *I tend to be happy because I have delivered the message and the community has obeyed. So I know that I have some good leadership skills.*

The moderate pride motivations expressed in the interview were consistent with her SRQ responses. Relevant SRQ questions focus on motivations driven by feelings of

[60] Learning can also be associated with intrinsic motivations.

satisfaction, self-esteem, capability and pride directed at oneself – a metaphoric "patting yourself on the back" (E. L. Deci, personal communication, 21 February 2020). However, the SRQ findings also found moderate levels of motivation driven by shame avoidance. Cynthia did not explicitly mention shame-related motivations in the interview, though her responses did suggest she was concerned with peers' opinions. SDT research sees pride and shame as interconnected; it is difficult to have one without being at risk of the other (R. M. Ryan, personal communication, 27 February 2020). However, the fact remains that Cynthia did not explicitly mention shame motives in her interview and only indicated them in the SRQ.

Cynthia's pride-based motivations are consistent with approach introjection regulation in SDT. Introjection motivations can be unstable as they are contingent on external approval. Feedback from Cynthia, the village chief, and one of two users showed a positive WPC–user relationship. If this were to change it could put her pride motivations at risk. This is possible as one user interviewed was mostly negative in their assessment of the WPC. Nonetheless, overall Cynthia's introjected motivations were moderate, and less important than the identified motivations described above.

5.8.4 Absence of amotivation and external motivations

There was an absence of amotivation in Cynthia's interview and no examples of external social or material pressures controlling her motivations. There was no indication she had doubts or uncertainty about participating, and no indication of external pressures forcing her to participate. Instead, she was cognisant of the volunteer nature of the role and accepted it with a sense of volition. She explained, "it is my personal choice to participate". In addition, Cynthia did not perceive the role as laborious. She noted, "we do not meet every day, and we plan the time for meetings. So there is no problem". Similarly, amotivation experiences in the SRQ were framed as having no reason or no understanding of the 'why' of participation. Cynthia's responses to the SRQ suggested these feelings were not relevant to her experience.

The absence of amotivation and moderate-to-low external pressures added to Cynthia's overall autonomous motivation for participation that I described in Section 5.8.1 and

showed in Table 14. Cynthia's persistence in the role indicated her autonomous motivations. This persistence extended to future plans for the WPC – "our vision is to have more boreholes", and continued motivation in the face of challenges associated with the role. I discuss these in the following section.

5.8.5 Motivational climate in Malekuwa and support for basic psychological needs

Cynthia named several contextual factors (i.e. the motivational climate) in Malekuwa which impacted her experience of the WPC. These are shown in Figure 18. They span structural (e.g. governance), social (e.g. relationship based), physical (e.g. relevant to infrastructure and geography) and role-related (e.g. aspects inherent to the WPC) factors which either supported or thwarted her BPNs. Elements of the motivational climate shown in Figure 18 are not exhaustive. They include only what Cynthia mentioned as significant. In addition, I did not determine the relative importance of these contextual factors. Relevant aspects of the motivational climate are outlined below, while in Chapter 6 I provide a more complete analysis of motivational climate based on interviews with all members.

Challenges of the role for Cynthia included occasional conflict with some users, and limited support from external agencies and government ("politicians of nowadays tend to politicise the developments"), and excessive demand on the borehole placing stress on the service and the WPC. The WPC chair in Malekuwa estimated over 100 households used the water point and these numbers were growing with increases in population. Clearly, the ability to persist through these difficulties is important in sustaining a functional water point.

The democratic election to the WPC supported Cynthia's autonomy. She was able to choose to participate in the WPC. The election also supported a sense of competence and relatedness with users. As I described earlier, she noted that "people saw potential in me". Harmonious relationships with other WPC members were also a factor which supported coordination: "by accommodating each other's opinions/views, [we] ... work well together". Hence collaboration with other members was a source of relatedness and competence support. The village head affirmed this and described the WPC as

working with “one spirit”. As a result, these contextual factors likely supported Cynthia’s autonomous motivations. Significantly, many of these factors are at the village or individual scale, and hence are somewhat easier to influence than more systemic factors.

Cynthia reported relationships with users were positive, supporting both her sense of relatedness and competence. Assuming the WPC–user relationship was mostly positive, it likely meant users would be more willing to pay tariffs. Adequate finances means WPC can purchase spare parts for maintenance. Or, alternatively, engage the area mechanic where needed for repairs – which the WPC had done at times. One of the two users I interviewed was critical of the WPC. However, Cynthia did not raise conflict with users as an issue, beyond noting the animator in Malekuwa encouraged “humility in response to insults”. The village head also noted he provided support to the WPC when requested, including resolving conflict with users. It is likely the area mechanic, animator, and village head provided positive support to Cynthia’s motivational climate.

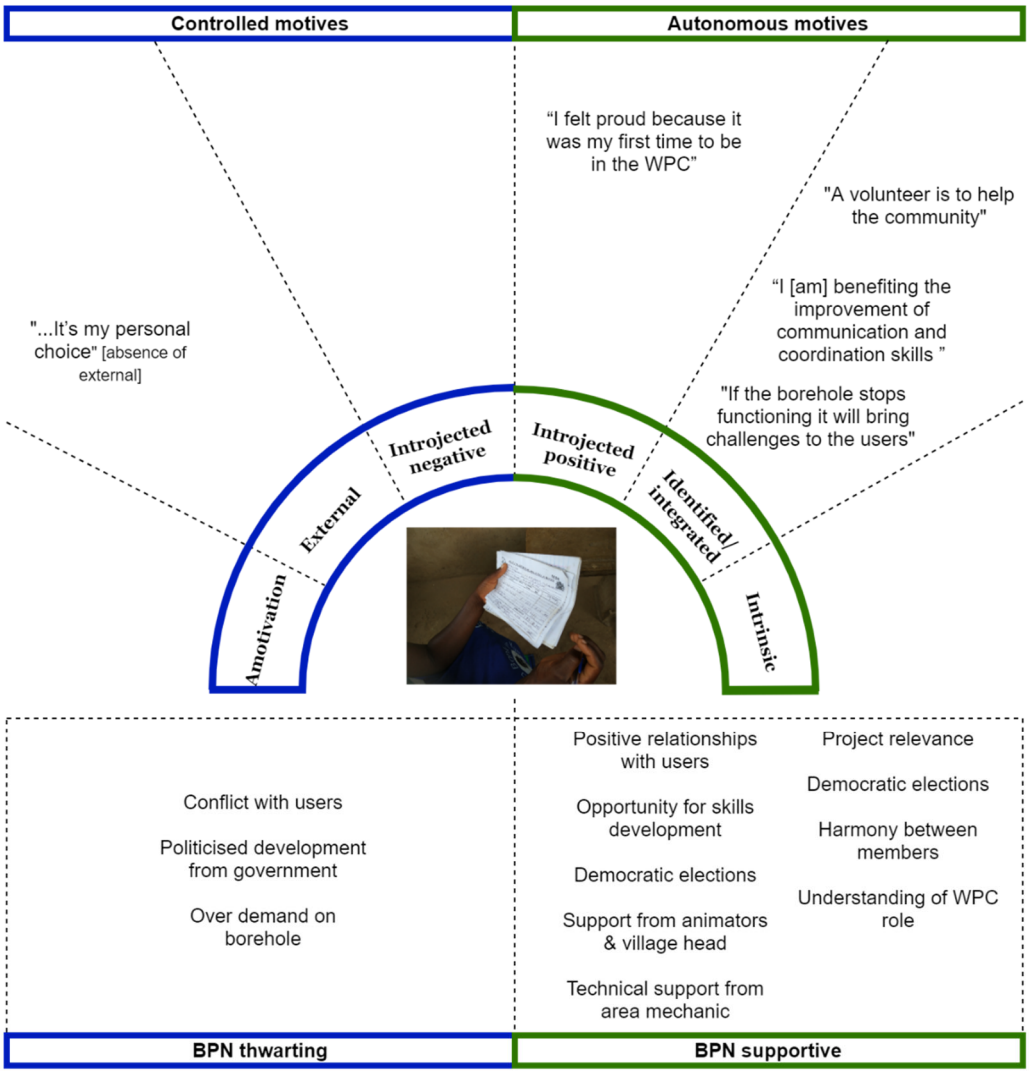


Figure 18: Summary of Cynthia's significant motives and her motivational climate

The water point in Malekuwa experienced increased demand from village residents and surrounding communities. Like most WPCs, the WPC was unable to fund a new borehole. Cynthia was aware of political structures through which it was possible to escalate requests to the district government. When asked how she might progress the WPC vision for an additional borehole, she replied:

> *We would tell the village head to deliver the message to the group village head, who would know where to take the concerns. He mixes with other committees at the district level where our issue might be considered.*

However, the effectiveness of these structures is questionable, and the village head and group village head have limited political power. In addition, district government funds

for RWS are low. In my interviews with district staff, they described an almost total reliance on intermittent donor projects to fund new water points. Cynthia recognised the shortcomings of government support. She described government actors as "unhelpful because of the politicisation of development at a district level". Others (Oates & Mwathunga, 2018; Chowns, 2017b; Baumann & Danert, 2008) have reported similar findings, with development support often determined by political affiliation rather than merit. Hence, despite their need, Malekuwa were unlikely to receive support.

Within this milieu, there are several factors which represented an absence of BPN support or an active thwarting for Cynthia. The limited funding, excessive demand for the water point, and an absence of support options are likely to thwart her autonomy, competence and relatedness. Current circumstances make expanding the water service unlikely. Cynthia noted, "I wish that there was another organisation to help us". As a result, these contextual factors may place controlling pressures on Cynthia's more autonomous motivations, particularly if the situation worsens. The factors described above are also difficult to change, as most are systemic issues and are beyond the village influence.

In summary, Cynthia's motivations were moderately autonomous. Although introjected pressures placed some controls on her motivations, her pro-social motivations were significant. These motivations were supported by Cynthia's endorsement of the role, positive relationships between members and with village leaders, opportunity for learning and leadership and finance to complete repairs. The use of the vignette highlighted motivations are nuanced, and responsive to the complexities of social contexts. By comparison aggregated findings and use of motivation types across a population can de-individualise such motivational experiences. Further, the vignette illustrated the individual nuance of Cynthia's motivation experiences, including what seem on the surface contradictions between motivation experiences.

5.9 Chapter summary

In this chapter I have analysed the motivations of volunteer committee members for participating in water point management. Motivations of 12 members at six locations were examined using quantitative SDT questionnaires and qualitative interviews analysed using SDT motivation types. I also summarised the motivations of one WPC member, Cynthia, from Malekuwa to focus on the differing motivations of one member.

Motivations in CBM are often considered simplistically in the RWS academic literature, and it is assumed members will value an improved water supply, and hence be motivated to manage water services. Although the findings of this chapter support this assumption, it is only one type of motivation experienced by members, albeit the most significant. Members experienced a range of autonomous and controlled motivations. More broadly across all villages, autonomous motivations included an interest in learning, an interest in creative activities associated with the role, the enjoyment of working with others, valuing the pro-social nature of the role, and positive changes in self-esteem. Controlled motivations included participation focused on either avoiding shame or avoiding disappointing either users or donors.

Regarding motivation themes in each village, the Helema, Malekuwa, Nanchopwa and Nkhumba committees had low-to-moderate forms of autonomous motivations. While in the presence of challenging motivational climates, Chilaulo and Galufu had low-to-moderate controlling motivations.

The findings in this chapter offer a basis for RWS researchers to understand and evaluate the range of motivations which shape the participation of WPC. In combination with findings on the motivational climate discussed in the following Chapter 6, they can be used to inform autonomy-supportive approaches to RWS design.

Chapter 6 The WPC motivational climate

In this chapter, I address Research Question 2a – "what aspects of the motivational climate were significant for WPC motivations, and how?". Motivations are a function of both an individual's orientation towards intrinsic or extrinsic goals, and a person's motivational climate (Ryan, Patrick, et al., 2008; Vansteenkiste et al., 2010). In this case, the motivational climate refers to the social and environmental factors which influenced the motivations of WPC members. I limit the focus of the analysis to elements of the motivational climate which influenced the WPC motivations discussed in Chapter 5, and do not investigate individual goal orientation. The interviews focused on elements of the motivational climate that were immediately relevant to the WPC. These included the village context, the program design (i.e. how CBM was implemented), and the nature of the WPC role. Because of this focus, more distal and less visible factors for members (e.g. national RWS policy) are not discussed. Finally, although I identify the significant, proximal elements of the motivational climate, I do not assess their relative importance.

The elements discussed or inferred by WPC members as relevant to their motivational climates included: cultural factors which led to a value of status, the quality of the WPC–user relationship, the quality of the NGO–community relationship, and village structures which supported management. Additional relevant aspects of the climate which contributed to members' management capabilities were: access to training, funds and technical support. I discuss each motivational climate element below, elaborate on how members experienced them, their effect on members' motivations, and where relevant, I draw links between the findings and SDT academic literature.

Before presenting the findings, I briefly clarify terminology. Throughout this chapter I qualify the motivational climate using descriptors such as "supportive" and "positive", or, "unsupportive", "negative" and "thwarting". When I reference a supportive or positive motivational climate, I refer to a climate which is likely to support members' autonomy, competence and relatedness – their BPNs. The other descriptors (e.g.

unsupportive) refer to a motivational climate which is likely to negatively impact members' BPNs. At times I also refer to individual BPN support or thwart, for example, "autonomy-supportive", "competence-supportive" or "relatedness-supportive". These descriptors also reference elements of a supportive motivational climate. While terms like "autonomy-thwarting" (or competence or relatedness) refer to elements of a motivational climate which may frustrate BPN satisfaction. I start the discussion on the relevance of the WPC–user relationship to members' motivational climates. In this and subsequent sections I refer frequently to the case study village names. A reminder to the reader, village WPCs are summarised on page xvi of this thesis for reference.

6.1 WPC–user relationship

The WPC–user relationship was important for members' motivational climates at all locations. Members' experiences of their roles were in part contingent on the quality of their relationships with users. When users trusted the WPC, the relationship with members was positive; when users mistrusted the WPC, the relationship was tenuous or negative. For both scenarios, I describe examples and impacts on the motivational climate in the sections below.

6.1.1 Trust and the WPC–user relationship

Nkhumba WPC members had a positive relationship with users. Interviewed members, users, and village leaders described the WPC as liked and respected for their effectiveness and transparency. Equally, the WPC members saw users as important actors in maintaining the water point. Palesa, the secretary, explained that users understood how the borehole operated and the importance of a functional committee. In addition, Wisdom, the Nkhumba chair, acknowledged users' important roles in sustaining the water point:

> *[I value] the understanding of the community, to the extent that [community users are] able to be of assistance when we duly need it. And that makes my work really enjoyable. And the people in this village understand what this borehole needs and are cooperative. So if you bring an issue to them regarding the borehole, you are sure they will handle it with maturity. So this greatly motivates me.*

Hendreson, a member from Helema, also recognised the important role users played:

> *The water point committee doesn't work in isolation. For example, the money we use is contributed by the community. That's what working together is all about. The committee is trusted with the people's 100 kwachas and we use the money in their best interests. That's working together at its best.*

Both Hendreson's attitude and the Nkhumba example illustrate an alignment of direction between WPC and users. The relationship was collaborative and viewed as mutually beneficial. Language used by Hendreson such as "working together", "trusted" and "their [user] interests" point to the relatedness and competence support in the WPC–user relationship. Such factors were linked with members' pro-social identified motives discussed in Section 5.2.2. Hence, when working well, the WPC and users both felt supported rather than controlled by their mutual obligations to each other. Members' and users' roles appeared to be internalised, and the motivational climate in terms of the WPC–user relationship was supportive.

Users were more likely to collaborate in management efforts when they had confidence and trust in members. Users' collaboration included adherence to rules, payment of tariffs, and supporting hygiene efforts at the water point. In all locations, users' trust and confidence in WPCs depended on users' perceptions of the WPCs' transparency and performance, as articulated by Jomo, an animator from Helema:

> *When someone negatively perceives the water committee, it means that something is not openly done … if the borehole has broken down, the committee has to execute its role of maintaining the borehole. So since the committee fixes the borehole when it has broken down, the people trust or positively perceive the committee, because they know that they are fulfilling their role. However, if the committee was failing their role ... like taking time to maintain or repair, then people would negatively perceive them, because their expectations on the committee had not been reached, they would be suspicious.*

An effective and trustworthy committee meant users were happy to pay their tariffs meaning. Subsequently this meant the WPC could maintain (or improve, in the case of

Nkhumba) the water service. Effective borehole management further supported user trust and continued payment of their tariffs – and the cycle continued providing a positive motivational climate for members. Such dynamics were consistent with the virtuous circle described in previous RWS literature (Willetts, 2012; Harvey & Reed, 2007; Lockwood, 2019).

The WPCs' responses to difficult users were indicative of the quality of the WPC–user relationships. Members at all locations reported difficult users. Example user behaviour included refusing payment, ignoring rules, not taking part in communal work or abusing members. WPC members responded to such behaviour in distinct ways, including hostility, punishment, avoidance, or ignoring them and moving on. Palesa, the Nkhumba WPC secretary, took a flexible approach to managing difficult users. When asked how her committee responded, she noted:

> *We keep on moving and we advise the people that are not cooperating on the need to cooperate. But we don't bar them from the use of water. We try our best to lobby with them. We actually agree with them to give us a date on which we should come and collect the money, but it doesn't mean we refuse to let them use the borehole, they still use it. And when they refuse to help us with some of the development works as a committee, we still work. Because it doesn't mean to say that when they refuse to work with us, we must not work either.*

Palesa's response is consistent with autonomy-supportive practice. Rather than respond to deviant behaviour with controls, the committee provided a rationale and choice to users. It is likely such an approach supported the autonomy of users, and contributed to the positive WPC–user relationship. However, not all WPC relationships were positive. In the next section, I outline instances and impacts of mistrust between WPCs and users.

6.1.2 User mistrust and the WPC–user relationship

As I discussed in Section 5.4.1, user trust was tenuous and the potential for blame directed towards WPC was high. This was for three reasons. First, the WPCs were highly visible in the communities, and users were dependent on them. Committee performance failure had significant consequences for most village members. Second,

members had to collect and manage money from their peers, and this brought both high expectations and some suspicion from users. Third, the effect of 'good' management performance was not always obvious, and often resulted in continuance of the status quo at the water point. Properly installed water points can continue to operate for years without issue. As a result, users tended to either be moderately positive in their attitudes towards WPC (e.g. "their performance is okay") or overtly critical of WPC performance. Therefore, the potential for blame by users in this social environment was high compared to feelings of confidence. This tenuous nature of user trust was an unsupportive aspect of WPCs' motivational climate.

The importance of trust between users and members was notable when absent. In Chilaulo, Galufu, Helema and Malekuwa, approximately half of the users interviewed described a conflictual WPC–user relationship. Members also described instances of difficult users, and as described in the previous chapter, fear of blame and social pressures was an external motive for some members. Chilaulo was a more extreme example of a negative WPC–user relationship and an unsupportive motivational climate. The committee's approach appeared autocratic. In this case, users alluded to not just the performance of the WPC but the circumstances of the members' initial appointment to the committee. Users viewed both the village head and the WPC as controlling and providing poor management of the water point. For example, one user explained:

> *Almost all members of the committee, they come from just within [the village] and are all related to the village headman. For example, the sister to the village headman, who also happens to be on the committee, is a very difficult person. Her house is very close to this water point here. Now if there are issues we need to raise about the management of this water point, it becomes difficult … because she behaves as if this is their personal water point as it is situated so close to them. So we fail to speak our mind. – User, Chilaulo.*

Chilaulo was a more extreme case, though users in other locations also expressed concerns about raising complaints. Unlike WPC members, none of the aggrieved users I spoke to discussed using the village head or described other avenues to resolve conflict.

Instead, users in Chilaulo, Galufu and Malekuwa were reluctant to raise issues with the WPC or the village head citing fear of reprisals. For example, when a user in Malekuwa was asked if she had considered raising questions regarding financial transparency she responded:

> *You can't just ask this sensitive question just like that. It will be like a deliberate act of provocation and will attract the wrath of those in authority and they will descend on you like provoked bees.*

With few choices for voicing complaints and limited avenues for recourse, it is perhaps not surprising that users were uncooperative at times. Although not a focus of this research, such findings point to the lack of autonomy some users had with respect to RWS management. An area mechanic in Nkhumba alluded to linkages between uncooperative behaviour from users and their limited autonomy when he described user non-payment of tariffs as a form of "silent protest". Non-payment and subsequent low WPC savings had consequences for members' options and efficacy when faced with technical challenges, and this placed control and competence pressures on members' motivation climate.

The animosity between users and the WPC flowed both ways in Chilaulo. A former WPC member in Chilaulo noted:

> *The users are a problem here! Because when you are told what to do and you become uncooperative and abusive, what does it mean? Does this mean the leadership has a problem? Obviously, it is the user who is a problem here!*

In addition, Grace's (a WPC member in Chilaulo) response to non-payment contrasted to the flexible approach in Nkhumba. She explained:

> *We tell them [users who do not pay] that "we will see them at the borehole"… they are denied access to the water because everyone is contributing despite the economic hardship. As such, they should also contribute … we work in shifts since we are many. We agree that "A and B are troubling, so we should deal with them".*

The controlling management style of the WPC further compounded the poor WPC–user relationship. Hence, it was clear in Chilaulo that the WPC–user relationship was not BPN-supportive for members, and, consistent with findings from SDT literature (Deci et

al., 1982), the impact of the controlling approach used by members had flowed down to users.

In Galufu, the WPC–user relationship was unique, as only four households used the largely defunct water point. Because of the poor supply, members only collected payment when repairs were needed. Charles, the Galufu chair, did not comment on the WPC–user relationship beyond highlighting the importance of the (barely functioning) borehole in supporting a few elderly residents. However, Trish a Galufu member reported mixed responses from users:

> *Other people are so abusive when we collect money contributions, but others are very understanding and they always pay. Other challenges are that others refuse to work if we ask them to do so at the borehole site, because the borehole no longer suffices to supply the water needs to the community … there are such people within the community who even get suspicious once they see us at the market buying fish. People say many things, and if we paid too much attention to all those false accusations, then the water point could no longer be there.*

As Trish suggested, Galufu user reports were mixed. One user reported she had "no problem with them [the WPC]" and attributed problems at the water point to the driller who installed it. On the other hand, a second user was more critical. She said, "We are not told how much money we have contributed. They don't tell us how much money it cost to buy the spare parts they have bought, nor how much money is left". As a result it appeared the WPC–user relationship (to the extent that there was one, considering the poor supply) was variable in Galufu, and this further compounded the members' BPN-thwarting motivational climate.

In Helema and Malekuwa, interviews with users and members revealed a mix of attitudes towards the WPC–user relationship. Members at these locations reported some difficulties with users' adherence to water point rules, rules which governed hygiene, queuing and pump usage. User feedback on the WPCs was variable. In Nanchopwa, all users were positive in their reports of the WPC, though Nanchopwa members still reported challenges. For example, Francis (member, Nanchopwa) noted:

> *One of the problems that we face is that when you try to enforce some rules at the water point, others take it personally and others shower insults upon us. For example, some drunk men staggering along the road would shout from the top of their voices about what kind of business we were doing with their wives at the water point.*

Hence, in all locations except for Nkhumba, the state and maintenance of the WPC–user relationship appeared to be a pressuring factor for members to varying degrees, and therefore a challenging aspect of members' motivational climates.

Members were able to manage some of the challenges of the WPC–user relationship, and subsequent negative aspects of the motivational climate, through coping approaches. For example, some members noted challenges with users were, to a point, "human nature", as described by Palesa in Nkhumba: "some people are very rebellious and by nature and will choose to not cooperate". Similarly, Jeffrey, an animator in Malekuwa, explained:

> *Aaaaaah a human being is a human being. Some [users] perceive the WPC as troublesome while others perceive them as they are doing a role for the community, hence are helping us. So those things are inevitable because a human being is a human being.*

Members in Nkhumba, Malekuwa, Nanchopwa and Helema also reported they were aware of difficulties in the WPC–user relationship before they started in the role. As a result, they were prepared:

> *When the time for soliciting contributions from the households comes, you are also bound to receive abusive language from the people who may be unwilling to contribute. Or if you are trying to reinforce rules of sanitation and hygiene at the borehole, other people think that you are trying to impose something else. However, since we expected these things when we were being chosen for the committee, we are not very much demotivated and we move on. – Olivia, member, Helema.*

As members were forewarned about abuse, they were able to approach such challenges with some volition, rather than feeling they had been unexpectedly imposed on them. Anticipating and accepting abuse was consistent with autonomy-supportive

practice in SDT, which notes that acknowledging challenging or tedious tasks upfront helps support feelings of autonomy (Gagné & Deci, 2005; Silva et al., 2014; Stone et al., 2009).

Members also turned to support structures as a coping mechanism to lessen negative aspects of conflict. Members in all locations except Galufu had enlisted the support of the village head when users refused to co-operate with financial contributions. Members described this as a last resort. Wisdom, the chair from Nkhumba, recalled his experience with one user:

> *Once there was a household that was refusing to make monthly contributions, and we reported them to the village head and he forced them to pay. They could afford to satisfy their basic needs, up to the point of drinking tea in their household on a regular basis, and yet they were failing to pay 100 kwacha [US$0.14]. So that was a sign of undermining my authority and we reported them to the chief. Then they began paying.*

Such coping mechanisms gave members options for navigating challenges by supporting their autonomy and competence. I describe the relationship between leadership support and motivational climate in more detail in Section 6.3.

Other mechanisms for preventing conflict included non-confrontational approaches to tariff collection. Members in in Malekuwa and Nanchopwa described attempts to collect money in a way that was designed to minimise conflict. For example, the Malekuwa WPC notified users of upcoming collection days via posters. In Nanchopwa, members noted they collected money in a public place rather than going to people's homes. Francis (member, Nanchopwa) noted "we do not go door-to-door because other people may misinterpret our actions". Members at these locations also acknowledged that some users would struggle to pay because of financial circumstances. These approaches likely reduced some of the negative impacts of collecting tariffs, again mitigating some of the potential for negative impacts on members' motivational climates.

In addition, members described practices they used to cultivate trust and transparency. Four of six WPCs (Helema, Malekuwa, Nanchopwa, and Nkhumba) described approaches such as showing spare parts and receipts as part of financial transparency, and were able to provide some evidence of financial records in interviews. These approaches are outlined in GoM guidance (2015b) and are expected of WPCs by development partners (e.g. district actors and NGOs). However, many members (except in Nkhumba, and to a lesser degree Nanchopwa) indicated feelings of pressure associated with practices designed to ensure or convey transparency. The focus of the WPC often appeared to be pleasing or placating users, rather than more internalised motivations such as a broader aim of sustaining the water supply. It was difficult to confirm this without firsthand observation of their practices. However, when describing transparency practices, members often framed responses as 'doing the right thing' rather than referring to more internalised, autonomous motives. Hence, it appeared some aspects of the role were more difficult to internalise.

Despite difficulties with users when collecting water tariffs and enforcing rules, WPC members persevered in the roles. For example, Annie (secretary, Nanchopwa) explained, "I cannot stop my role because of insults [laughs]. People are able to insult the chief, but he does not step down, so what's special with me?" In all committees, members attempted to navigate conflict and continued in the role despite occasional experiences with difficult users. Instances of poor relationships were either not widespread, or were not significant enough to drive amotivation experiences for members. Most members attempted to dismiss abuse and focus on other aspects of the motivational climate which were more salient, as described by Francis (member, Nanchopwa):

> *We have to persevere some of these things. The benefits of having a functional water point within the village outweighs all these insults that we sometimes get.*

Nevertheless, the relationship with users often remained a hindrance, and was reflected in a divide between users and WPC. Both users and WPC members used 'us and them' language. This contrasted with the language of Nkhumba members and Hendreson that I described earlier in Section 6.1.1. In those examples, members' language reflected the shared goals of WPCs and users. Hence, in most cases members'

motivations remained despite, rather than because of, the WPC–user relationship. Nkhumba was an exception where the relationship with users was supportive of the committee, with only isolated difficulties with users.

Figure 19 below summarises a continuum of the WPC–user relationship based on the findings. The figure illustrates the mutual perceptions of members and users. I also view it as an indication of the degree to which the WPC–user relationship supported or thwarted members' BPNs. Chilaulo was at the left end of the spectrum, while Nkhumba was at the right. The other WPCs were in or close to the middle category. These villages had mixed findings about users' levels of trust of the WPC, and similarly, WPC members had mixed experiences with users.

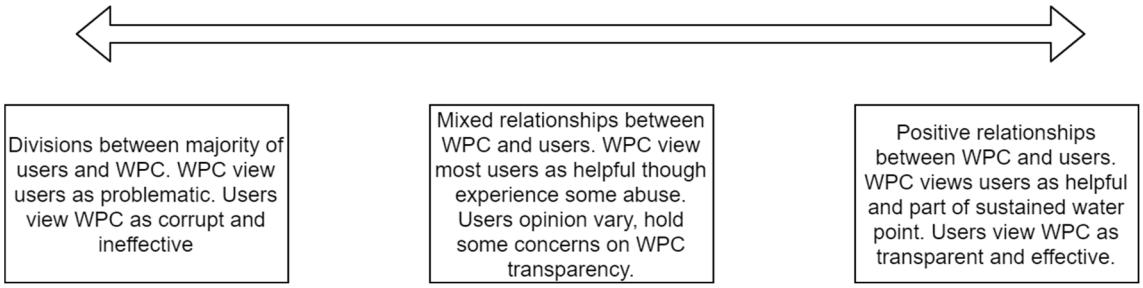


Figure 19: The spectrum of WPC–user relationships

In the following section, I explore elements of the village context (i.e. motivational climate) and how it shaped status motives.

6.2 Pride, status and village cultural factors

As I described in Section 5.3, several members' reasons for WPC participation were based on status, that is, on social comparisons. The importance of status is a function of individual personality (i.e. the degree to which a person values status) and cultural influences (i.e. the degree to which a culture values status) (Chirkov et al., 2003; Triandis, 2001). Regarding personality, an individual focused on status-seeking is more likely to value extrinsic 'name and fame' goals as opposed to intrinsic goals such as personal growth or contribution to their community (Vansteenkiste et al., 2010; Kasser

& Ryan, 1996). While cultural influence refers to the relative importance cultural norms place on such 'name and fame' goals (Triandis, 2001; Chirkov et al., 2003). In this section, my analysis focuses on cultural influences only, not personality.

Status motives included members' feelings of pride about their standing with others in the community. Indeed, many members felt unique, or different, compared to other people in their community because of their WPC role.[61] Being chosen for the role – by the village head or community, was viewed as a vote of confidence. Members valued their selection, and it resulted in feelings of pride, a sense of responsibility to those who had chosen them, and responsibility to undertake the committee role. For example, Grace in Chilaulo described her identity as a leader, and from her perspective, her election to the WPC confirmed this. Similarly, Annie in Nanchopwa reported:

> *People chose me because [they] know I am hard working, active and committed to my work. So I do not want to disappoint the people who voted for me … I want to serve them as much as I can.*

As demonstrated in these responses, members valued the management role. It validated their competence and gave them sense of responsibility to others.

The findings also suggest that status factors may be gendered. Female WPC members reported feeling valued in the role in relation to horizontal community relationships. That is, with respect to other community members. For example, Palesa in Nkhumba noted she "was really happy and honoured … the feeling was the people in our community had chosen me and entrusted me to be a leader". It is likely achieving recognition in the social hierarchy is particularly challenging for women. As I discussed in Section 3.3, in Malawi culture women typically defer to men, hierarchy is expected, and authority concentrated in the hands of a few, typically men (Booth et al., 2006). While women tended to refer to other members' in the community when discussing their position, male WPC members referred to vertical relationships when they referenced feelings of pride or status type motivations. For example, Paul in Malekuwa

[61] These motivations are a combination of individual aspects (e.g. propensity towards status-seeking) and social/cultural aspects (i.e. environmental factors) which value these more externalised goals. However, in line with the aims of this chapter, I focus on what these experiences revealed about the motivational climate rather than individual traits.

referred to his relationship with the chief while Hendreson (Helema), Wisdom (Nkhumba) and Francis (Nanchopwa) referred to pride and position with respect to NGO actors. For example:

> *It was a good experience. I accepted this responsibility and enjoyed working and walking around in the community with officials who wanted to give us the borehole. – Francis, member, Nanchopwa.*

This gendered perspective on pride and status is speculative due to the small sample size and it would require further research to test these initial themes. However, if these examples are indicative of a broader trend, it may be that vertical relationships are more salient for male WPC members' motivational climates, while horizontal relationships were more important for female members. Or, it could be that male members simply have more access to power holders like the village head and NGOs because of existing gender dynamics.

The members' responses regarding status shown above and discussed in regards to introjection type motivations in Section 5.3 and 5.4 were consistent with conceptualisations of Malawi culture as valuing hierarchy and collectivism (Booth et al., 2006; Hofstede Insights, 2020). References to kinship or the 'in-group' (e.g. "the people chose me"), and the importance of social relationships are indicative of collectivist values, while explicit or implicit references to leadership roles and its importance, are typical of hierarchy (Booth et al., 2006; Triandis, 2001). These values inevitably shaped the motivational climate for members. The WPC position differentiated members from others (i.e. hierarchy) and this drove members' motivations to continue to participate in the WPC.

In the following section, I discuss the influence of village-level support structures on the WPC motivation climate. I outline how village leaders supported WPC members in their roles, often through competence support, and the impact of village heads' autocratic leadership styles.

6.3 Village support structures

Accessible, local structures were an important source of BPN support for WPCs and consequently, were generally a positive influence on members' motivational climates. Beyond mutual support within the WPC, area mechanics, village heads, or animators helped members navigate technical and social challenges they felt unable to address. Support structures provided options in terms of responding to competence barriers. I outline these structures below and provide two examples where village leadership likely had a (negative) controlling effect on the motivational climate for the WPC.

6.3.1 Leadership support

Village heads are the immediate authority in village governance, so they are a significant influence on the motivational climates of WPCs. As discussed in Section 3.3, village heads' political and cultural responsibilities include acting as intermediaries between communities and external NGOs and government agencies, and adjudicating on the enforcement of local rules. Regarding water supply, village heads were involved in the formative stages of the RWS projects. They were the initial gate keepers for NGO development projects and were responsible for WPC elections in the Phalombe villages and Nkhumba. In some cases, the village head was also responsible for selecting new or replacement members.

The village heads also helped WPCs to mitigate challenges with difficult users. In this respect, they were also a positive influence on members' motivational climates. In all locations, the WPCs elicited support from the village head to resolve conflict and deal with difficult (non-compliant) users. For example, Edith, an animator in Malekuwa, described the role of the village head in tariff collection: "the chief helps to enforce the rules on people who refuse to contribute". Similarly, the village head in Helema described his support role and relationship with the WPC as follows:

> *There is a good working relationship [between the village head and WPC]. Whatever happens there, the challenges or problems they have, I'm informed. For instance, if there is a disagreement, they do come to me for conflict resolution. They inform me what happens, not that they want me to interfere with the committee but in order to have a picture of what is going on … such that I encourage the people to contribute to the borehole to sustain [it].*

In Helema, Malekuwa, Nanchopwa, and Nkhumba, village heads were conscious of not encroaching on the water point management unless asked. In three of these villages[62], the village head made a point in interviews of declaring their independence from the management of the WPC. They allowed the committee to operate with limited intervention. The head in Helema noted his independence was important, because if he was involved in the WPC no one would question the committee for fear of reprisal. While Wisdom, the village head in Malekuwa, explained, "I don't interfere with how they work ... I let them do things freely". In these cases, the village head supported the BPNs of members, by respecting the members' autonomy and authority, and offering assistance when required.

The village head also appeared to play an important role in building consensus and compliance around behavioural norms relevant to RWS. An area mechanic in Phalombe explained the important role of the village head in ensuring users had internalised the importance of the water supply, and the role of the WPC in maintaining it. George, an area mechanic in Phalombe, explained the process in Helema village as:

> *The committees do not dictate to the people to do ABC … after the committee were elected by the community, the chief was involved in sensitising the community to the management system of the water committee. In addition, he also reminded them about the past water challenges to influence them … he told them that "previously, water was not accessible in the community unlike now, [where they] have access to water … therefore we should do according to the training". So this brought the coordination of the community. So they agreed to fund the borehole to sustain it. In addition, they came up with bylaws that have benefited all of them.*

George's description of the village head's actions is an illustrative example of autonomy-supportive rather than controlling practices, through providing a rationale rather than directives. As a result, users could internalise the importance of the WPC

[62] The Nanchopwa village head was not available for interview in Nanchopwa. However, the Nanchopwa WPC members noted he was not involved in the WPC except when requested.

and the relevant by-laws in a non-controlled manner. Hence, with these practices, the village head supported members' motivational climates.

Animators in Nkhumba, Helema, Malekuwa and Nanchopwa were also important actors in Phalombe WPCs' motivational climates. They provided technical and social support to the WPC.[63] Animators served several roles – local champion for CADECOM's program; intermediaries between support from CADECOM and district staff, and community members; early adopters of programs, and monitors of projects. Cynthia (member in Malekuwa) noted animators provided mentorship by encouraging members to "accommodat[e] each other's opinions in order to work together well, [support] conflict resolution, and … encourage humility to insults". Animators also had an accountability role, flagging water point issues (e.g. hygiene or functionality) to the WPC when required.

Support from animators (when present) and village heads was peripheral to the day-to-day management of the boreholes. Nonetheless, animators provided a level of support for members' motivational climates, albeit distally. In particular, animators helped navigate competence and relatedness challenges associated with difficult users, and were one of the few options for members to turn to for support in the absence of follow-up district and national government support.

6.3.2 Autocratic leadership

The autonomy provided to WPCs by Nkhumba, Helema, Nanchopwa and Malekuwa village heads contrasted to the leadership styles in Galufu and Chilaulo. Galufu and Chilaulo village heads appeared autocratic. They expressed confidence in their WPCs, but were also explicit on their own involvement in and influence of WPC operations. In Chilaulo, Ezra noted "as village head [I] ensure that the boreholes are intact and that the right decisions are made despite not being [a] committee [member]". Josie, the village head in Galufu, was also 'hands-on' with the management of village projects:

[63] Animators formed part of CADECOM's ABCD approach, hence were only present in Phalombe. There was an equivalent animator in Nkhumba (who was instated part way through the partnership) who was also an active member of the WPC. There were no animators in Chilaulo or Galufu.

You know a chief is a chair of any project be it of water point, forest, health or agriculture projects ... the chief need to take a leading role. So when these people are working you need to be present supervising. So that motivates them.

The overreach of village heads compromised users' opinions of both WPCs and village heads. As discussed earlier in Section 6.1.2 regarding the WPC–user relationship, a Chilaulo user "failed to speak their mind" on water management challenges. As the head was related to WPC members, the user noted "it is meaningless to channel our concerns to him". A user in Galufu voiced similar complaints. They noted most of the WPC members were relatives of the village head, giving them no recourse for actioning complaints:

[We users] don't have power … [and] … cannot do anything because they [members and village head] are the owners. If we do, then we are in trouble. Therefore, we just watch, provided we are peacefully and freely accessing the water.

My diary notes from site visits and interviews with the village head also noted the command-and-control leadership approach at both Chilaulo and Galufu. It was in stark contrast to the village head support in other locations.

Exactly how the autocratic leadership style directly impacted the BPNs of WPC members was not clear. Members in Chilaulo and Galufu made no comments on the autonomy-thwarting leadership style of village heads. However, evidence from SDT research suggests leadership style matters. In multiple contexts and cultures, controlling leaders have been shown to be a negative influence on the motivational climates of subordinates (Assor et al., 2002; Chirkov, Sheldon, et al., 2011; Chirkov & Ryan, 2001; Deci et al., 1989; Slemp et al., 2018). In addition, controlling hierarchies have a flow-on impact. If those in power are controlling, their subordinates are more likely to experience controlled motivations and act in a controlling manner themselves (Deci et al., 1982). I posit this was likely the case in Chilaulo, where both user reports and interviews with members suggested controlling approaches. Evidence of a controlling committee in Galufu was less clear. In sum, although village leadership provided a support to members' motivational climates by providing an avenue for

support, there is also a risk overreach and a leader's autocratic styles can compromise members' motivational climate.

In the following section, I return to village support structures which contributed to a positive motivational climate – specifically the role of area mechanics in providing technical support for the WPCs.

6.3.3 Area mechanics

As I discussed in Section 1.2.2, area mechanics are an important stakeholder group involved in the management and repairs of water points in Malawi more broadly. They diagnose problems and can complete maintenance or repairs for a small fee.[64] In the case study villages, members in all locations except Nanchopwa referred to using area mechanics. In Chilaulo, the area mechanic had resolved a significant breakdown. In Nkhumba, the area mechanic lived in the community, and as a result was a de facto WPC member and engaged in the regular maintenance of the water point. The WPC in Galufu had consulted with the mechanic to diagnose the failing water point. In Malekuwa and Helema, the area mechanic had completed regular maintenance, and supplemented the limited experience of WPCs at these locations. Hence, area mechanics provided an important competence backstop for most WPCs.

Area mechanics provided support to members' motivational climates by providing choices (i.e. autonomy support) in the face of challenges, and through direct technical (i.e. competence) support. They were an accessible and affordable resource which members accessed intermittently. The estimated fee was MWK1125 (~US$1.50) per visit based on MoAIWD guidelines (2015d)[65]. Through the service they provided, area mechanics bridged an important gap due to limited district or NGO support beyond project inception:

[64] In Phalombe, with support from InterAide, area mechanics are attempting to move to six-monthly service contracts to encourage more preventative maintenance. In this model, area mechanics conduct regular inspections and recommend what maintenance the WPC should do rather than responding to ad hoc requests for support. The contract model to date has had limited uptake (1%) (S. Cottalorda, personal communication, 26 March 2018).
[65] This fee does not include spare parts. The estimated cost is based on a service contract of no less than four visits per year. Area mechanics also indicated they did some work voluntarily.

What makes me happy is that my work helps the welfare of the people without struggles. In the past when the water point broke down, the message would be sent to the council for maintenance. Samuel, area mechanic, Phalombe.

Area mechanics explained their role was important for water points which had no trained members.

Those [WPCs] that have not had such [CBM] training. Whatever the magnitude of the problem, they just run to us, so that we go fix the borehole – and yet the problem [is often] small! – George, Area Mechanic, Phalombe.

In sum, like animators and supportive village heads, area mechanics were an important part of the motivational climate for WPC members. They provided an 'on-tap' rather than 'on-top' mechanism to resolve technical challenges. In the following section, I discuss the last of the salient village support structures, internal relationships within the WPC themselves.

6.3.4 Positive relationships within the WPC

Members in Nanchopwa and Nkhumba referenced the importance of group cohesion to sustaining the WPC. Angela (Nanchopwa) noted the significance and enjoyment of working with other members to complete maintenance. Similarly, Wisdom (Nkhumba) explained working together with members was enjoyable and made the role easier, while he also noted conflict within a committee could destroy it. No example of disharmony within WPCs was reported by members. However, in both Nkhumba and Galufu, conflict and lack of co-operation in other non-water village committees were cited as a reason for project failures. Such experiences of conflict indicated they were a potential cause of negative affect regarding members' motivation climate.

Animators and village heads also discussed the importance of a positive member–member relationship in supporting management effectiveness. The village head in Malekuwa reported "there is coordination and collaboration between the team. They do things with one spirit". Paul, the WPC chair in Malekuwa also noted:

The secret behind our committee is that there is good unity and coordination … because we know the community or outsiders of the committee do not provide any

support. [So] committee members encourage one another not to be demotivated, [and] remain committed.

The village head in Helema commented, "the main strength [of the WPC] is coordination among themselves to promote sustainability of the water point, and that is why we still have it [water point] up to now". These examples highlight a sense of efficacy associated with collaboration with others – competence with relatedness. Accordingly, positive relationships in the WPC contributed to a supportive motivational climate for members. Individuals were more effective when cooperating with other members, and this supported the enjoyment and persistence of WPC participation[66] I described earlier in Section 5.1.1. In sum, village structures including village heads, area mechanics, and internal WPC relationships influenced members' motivational climates. The following section transitions from support structures to the management capabilities of WPC members.

6.4 Management capabilities

As I explained earlier, WPCs have "full responsibility" for O&M of water points under MoAIWD guidelines (Ministry of Water Development, 1998, p. 5). Hence, the ability for WPCs to meet the demands of their roles using their own capacities was an important aspect of their motivational climate. In this section, I outline what capabilities were relevant to completing the role, and instances when WPCs were, or would have been, unable to respond to management challenges.

6.4.1 Confidence to complete or coordinate minor repairs

Approximately half of the members interviewed noted they received formal water point training as part of the borehole installation. According to government guidelines, training covers technical repairs, financial management, hygiene, roles and responsibilities, cross-cutting issues, community mobilisation, and monitoring and evaluation (M&E) (MoAIWD, 2015b). The MoAIWD (2015b) training guidelines are

[66]The influence of efficacy on others is akin to ABCD practices and principles which place importance on identification of shared goals, identification of competencies within a community, and working with others to progress those goals. The intersection of ABCD and SDT is discussed further in Chapter 7.

generally worded in an autonomy-supportive manner. The training modules are structured to support active learning through "[getting] trainees to … talk[…] and share[…] ideas with others, rather than listening to the trainer" (MoAIWD, 2015b, p. 11). Hence, the material is often framed through asking questions (e.g. "what are different ways of raising funds for O&M?", (MoAIWD, 2015b, p. 14) and discussion rather than a prescriptive approach.[67] However, during the field work, I did not observe WPC training and it is likely training approaches differ considerably between trainers and organisations. As a result, it was not possible to establish whether training was delivered (and received) in a controlling or BPN-supportive manner.

Members valued training. It gave them the required skills and knowledge of basic O&M and management tasks, and hence it supported their autonomy and competence. Further, members valued the opportunity to learn, as discussed in Section 5.1.2 for some the learning element of the role was an intrinsic motive. Research by the NGO InterAide in Phalombe district (the district for Nanchopwa, Helema and Malekuwa) confirmed the importance of WPC training in supporting member competence and subsequent borehole functionality. InterAide surveyed approximately 900 water points in Phalombe. Their findings showed training resulted in more instances of stocking of spare parts and hence faster repairs, a greater willingness of WPCs to pay area mechanics, and higher functionality rates compared to locations where there was no WPC, or WPCs had not been trained (S. Cottalorda, personal communication, 26 March 2018). George, a Phalombe area mechanic, confirmed this when asked what differences in motivations and performance he saw between WPCs:

> *The boreholes that have committees that have done training are the ones that are well taken care of. Like people clean up the surroundings, and they are able to assess the magnitude of a problem that may arise before speaking to us … and when they come to us, we sit down and advise them what to buy or get.*

As noted earlier, not all members were trained. Further, without effective handover between members, it is possible the effects of training will diminish with time. I saw

[67] This also suggested some flexibility in approaches to RWS management.

evidence of this in interviews with WPC participants. Approximately half of interviewed members had received the original training. Three members in Malekuwa had left the committee after expectations of receiving a salary were not met. Because of this, the Malekuwa chair was new, and he had learnt through hands-on experience and through his own acumen. However, it appeared he could not complete basic mechanical maintenance[68], and the WPC had relied on the area mechanic for support. In Galufu, there were only two active WPC members. The information members provided on their training was unclear, but it appeared only the chair had been trained, and this was over 15 years ago. All the Helema WPC were new, after the former committee had been dismissed. They had no formal training and learnt through observation of the former committee, though they recognised their expertise was limited and were interested in further training:

> *[Training] will ensure that we don't get into a position whereby the borehole has completely broken down and beyond our ability to do anything about it, which would bring the committee to its knees. There would be no water for the community during the time when the water point was broken down. And we would be forced to pay a lot of money to a trained technician to remedy a situation we could have remedied ourselves had we possessed the necessary skills. – Olivia, member, Helema.*

The Helema WPC had sought training support from the local area mechanic, who provided limited assistance before "he feared he could lose some potential clients [and] avoided working with us in fear of us stealing away his special set of skills". Such examples highlighted difficulties in maintaining management capabilities. Further, as I describe later in Section 6.4.3, sourcing additional support (including training) from an NGO or government was difficult. Hence, it is possible that with time, the confidence and capacity to complete repairs may diminish, placing pressure on members' sense of competence and autonomy. Further, these effects were gendered, below in Box 7 I discuss gendered aspects of roles and training.

[68] When I asked if I could observe maintenance at Malekuwa it became evident that those present (including the chair) were not confident or capable to do it themselves. There may have been others in the community who were capable and not present.

Box 7: Gendered aspects of the motivational climate

Gendered WPC positions were reflective of cultural norms in Malawi, where men typically hold leaderships positions (Booth et al., 2006). As I discussed earlier in Box 6, all WPC chairs I spoke to were men, men also tended to be responsible for maintenance, while women held roles such as treasurer or secretary. Both men and women held general (i.e. no formal position) member roles in the WPC.

Members' competence across (gendered) tasks was not equal. Women in Nkhumba expressed confidence in some aspects of water point management (hygiene, bookkeeping etc.) but not mechanical maintenance. When I questioned Annie in Nanchopwa on what had failed at the water point, she noted, "I may not be able to cite the exact cause of the breakdown [laughs] but I just see the spare parts being fixed". I observed a similar theme in Nanchopwa, Galufu and Helema.

Women's lack of maintenance skills presented challenges in terms of management. Men are more likely to migrate from the villages for work in other areas or in Mozambique, and this can create a gap in technical expertise in the WPC. This has practical implications in terms of borehole management as new members, or the remaining men and women, may not have the skills to maintain the borehole. Hence, it presents a risk of competence-thwarting pressure on motivations.

Further, the available support for different roles varied, likely resulting in different motivational climates for men and women. Area mechanics were available for technical support, however there was no mention of support mechanisms for other roles such as bookkeeping or financial records, meaning roles often held by women were less supported.

As I discussed earlier in the limitations in Section 4.7, a detailed study on the gendered aspects of motivations and motivational climate were beyond the scope of this research. However, this brief discussion points to a possible need for gendered

analysis and gendered approaches to support members' different motivational climates.

Untrained members in Helema and Malekuwa were able to adapt to competence gaps. Members learnt through hands-on experience and accessed support from area mechanics where needed. Therefore, most members were confident in their own capacity to complete or organise minor repairs and preventative maintenance[69] when needed. Only two members in Chilaulo, and one of the two members in Galufu, were less certain of their capabilities. In both instances the repairs were done by other members (in Galufu), or the area mechanic (in Chilaulo). In that sense, although their skills (competence) was compromised, members in Galufu and Chilaulo did have back-stop options, likely limiting negative effects of autonomy and competence-thwarting. Later in Chapter 8 I outline how WPCs' ability to complete or coordinate repairs to handpumps was evident in repair times. In short, most WPCs were able to coordinate repairs under 24 hours though in Chilaulo, the last breakdown took one week to repair and required help from the area mechanic, reflecting lower comparative effectiveness.

I comment briefly on training incentives offered to committee participants and controlled motivations before discussing the importance of spare parts. NGOs are expected to pay a daily allowance to committee members (including water) when they attend formal training (Ngwira & Mayhew, 2020). At times, it appeared that this led to perverse (i.e. controlling) motivations to participate in development initiatives and attend training. Though training allowances are encouraged by the GoM to compensate attendees for their time, the practice encouraged members who were motivated by money to initially join the WPC and attend training. Hence, for some, training allowances were a controlling aspect of the motivational climate.

I observed this in workshops held in collaboration with CADECOM. For example, although the Galufu WPC had only two or three active members, ten turned up to the

[69] Evidence of maintenance is discussed later in Section 8.1. This section is concerned primarily with a sense of competence and confidence to complete repairs, rather than willingness to complete preventative maintenance.

workshop which provided an allowance. Although such incentives introduced controlling motivations to join the WPC, I see them as less relevant to the motivational climate with time, as those driven by financial rewards were likely to soon leave because the role was voluntary. This was evident in the Malekuwa example, where Edith, the animator explained:

> *Three other members led by the chairperson dropped out because they had expectations of some benefits like a salary. Therefore, those people were replaced.*

In addition to skills, a necessary part of completing repairs is access to finance for purchasing parts. Members' training included guidance on tariffs and savings. Adequate savings enabled the purchase of spare parts and timely completion of repairs. Consequently, this had significance for members' motivational climate, as access to funds provided options (i.e. autonomy support) and capacity (i.e. competence support) to complete timely repairs. Existing savings for the WPCs interviewed ranged from 0 (Galufu) to 52,000MWK, approximately US$70 (Nkhumba).[70] Half of the committees (Nkhumba, Malekuwa, and Nanchopwa) also had spare parts in stock, meaning they could respond quickly to minor breakdowns.[71] The state of savings and spare parts is summarised below in Table 15. Figures depend in part on the number of users (i.e. contributors) in each village. To put the savings figures in perspective, a basic Afridev spare parts starter pack costs 12,000MWK[72] and as noted earlier, an area mechanic water point assessment costs approximately 1,250MWK[73]. Half of the WPCs had either equivalent savings or equivalent value of spare parts to cover a starter pack. The other WPCs would need to collect additional money for repairs when needed. Having adequate savings and parts is an example of the virtuous cycle I referenced in Section 6.1.1. Adequate savings was both an enabler and consequence of a functional committee. In Chapter 8, I discuss the state of savings and spares in further detail.

[70] Evidence of receipts and financial records were viewed but not interrogated. Hence, the validity of these figures are subject to the accuracy of verbal reports.
[71] A stock of spare parts also minimises risk of (financial) theft.
[72] Equivalent to approximately US$16.30 on 8/8/20 based on 1 USD = 735.760 MWK. Average savings according to NSO (2019) are 22,000 per household in Blantyre rural and 19,000 per household in Phalombe.
[73] Approximately US$1.50.

Table 15: Estimated savings and spare parts in stock at each location

Location	Chilaulo	Galufu	Nkhumba	Helema	Malekuwa	Nanchopwa
Households served	100	3-4	65	40	100	89
Savings (MWK)	10,000	0	52,000	11,500 (across 2 boreholes)	5,000 - 6,000	29,500
Estimated value of spare parts in stock	0	0	10,000	0	40,000	36,000

Access to spare parts suppliers is also important for fast repairs and has been shown in previous research to be a determinant of water point sustainability (Foster, 2013). Members did not discuss difficulties in accessing spare parts and it did not appear to be a significant issue for any of the case WPCs. Previous research has noted standardisation as an enabler of sustainability, as it supports access to parts (MacArthur, 2015; Baumann & Furey, 2013; Lockwood & Smits, 2011). Standardisation refers to controlling the types of handpumps used in a country, through either endorsement or regulation (MacArthur, 2015). As I discussed in Section 1.2.2, in Malawi, the Afridev pump has been recommended in national policy for deep water points (Ministry of Water Development, 1998), and are a relative strength of RWS management in Malawi. National guidance to establish pump supply chains have helped facilitate access to Afridev spare parts via the private sector (MoAIWD, 2015c; McNicholl, 2011; Rijsdijk & Mkwambisi, 2016). I visited nearby markets as part of the field work and Afridev parts were readily accessible. It is likely this supported members' capabilities to complete minor repairs and thus it was a positive aspect of members' motivational climates.

In sum, training and associated skills, savings, and access to spare parts had functional significance in supporting the management capabilities of WPCs. In turn, these capabilities contributed to members' competence and autonomy. 'Resourced' members are more able to perform their roles and navigate challenges. Most WPCs were able to access limited funds, parts and skills to complete repairs and had adapted where needed. For example, in the absence of adequate funds, by raising additional money if required, and enlisting support from the area mechanic when unable to complete

repairs. These factors contributed to a BPN-supportive motivational climate and subsequent support for more autonomous motivations. Although members were able to respond to minor repairs, this was not the case with more serious management challenges. I describe such examples in the following section.

6.4.2 Challenges with major works

Challenges associated with major works were a negative influence on members' motivational climates. Members at all locations were concerned with their ability to address major breakdowns, or introduce improvements in the water service, as funding and skill level required for major works was beyond their capacity. Besides Galufu, WPCs were yet to face a critical mechanical or environmental issue, in part because boreholes were relatively newer.[74] Regardless, WPCs expressed concern with slow onset environmental and demographic challenges which were stressors for water access and functionality. In Nanchopwa, saline ground water had corroded the pump, while Chilaulo and Helema WPCs reported reduced flows in the dry season. In addition, all WPCs reported additional demands on infrastructure through population growth. The Chilaulo WPC experienced yield issues soon after the water point was installed. Although the problem was less extreme than the Galufu case reported below, it remained an issue, particularly in the dry season:

> *Esther (treasurer): … at times [the borehole] stops pumping water… It started soon after the borehole was installed.*
>
> *Grace (member): This borehole was not drilled like any other borehole… so I think that it wasn't drilled deep enough, that's why it struggles to pump water from the ground.*

The factors listed above contributed to increased water collection times, reduced supply and increased demand from users. It may also force users to use other potentially unsafe or more distant water points. Members had few choices in the face of such challenges. Hence, poor environmental conditions accompanied with a poorly installed borehole limited members' options (i.e. autonomy) and ability (i.e. competence) to deliver a safe, reliable water supply.

[74] Boreholes were constructed in 2000 in Galufu, 2007 in Chilaulo, and 2014 in Helema, Malekuwa, Nanchopwa, and 2012 in Nkhumba.

The Galufu committee faced more immediate and major challenges. Although the chair was confident in his maintenance skills, a falling water table and poorly constructed water point meant the borehole needed to be re-drilled to extend its depth. These works were well beyond the financial capacity of the WPC. Financial stress was further compounded by an absence of any WPC savings and a refusal of users to pay a regular tariff for a service which supplied just four households. The members collected money for minor repairs as needed, but faced user resistance. Attempts to secure external support from NGOs and government had also failed: "we once invited the councillor to witness our problems and promised that it will be maintained but to no avail" (Trish, member). With no savings or external funding, the interviewed members reported feeling helpless and amotivated. This is an obvious example of a compromised motivational climate and (low) competence induced amotivation.

Additional water points or re-drilling were beyond the financial capacity of all committees. As noted earlier, existing savings for WPCs ranged from 0 to 52,000MWK. The Blantyre district area mechanic estimated costs for drilling a new borehole at 1.5 million MWK, with the hardware an additional 150,000 MWK.[75] This translates to approximately US$2,250 for a new borehole and handpump. Members at all locations were keenly aware of their inability to meet these costs, however all WPCs aspired for additional water points in the face of an increasing population. The high costs and relative financial poverty of community members meant self-funded major repairs or additional water points were highly unlikely. As discussed in the following section, limited external support options further compounded these challenges. With limited choices for members to progress their aspirations, these conditions limited their ability to do much beyond day-to-day management and hence led to major works and poor initial installations being a pressuring aspect motivational climate for members.

6.4.3 Limited external support

[75] Similar figures are reported in MoAIWD (2012).

For WPCs more broadly, there were few options for external support to navigate major gaps in their capabilities. In this regard, their motivational climate was not supportive of BPNs. As discussed above, the absence of choice in the face of challenges limits members' autonomy and competence support. Members at all locations described structures that were designed to escalate major breakdowns, and request further support to improve water supply infrastructure. Villages could theoretically raise concerns or requests 'bottom-up', from the WPC to the village head, to the group village head and from there to the area development committee and the district as per Figure 4, and as described in Section 3.4. However, many villages in both districts had no water points, meaning competition for limited funds was high. As a result, although such mechanisms for requesting support were in place, most members did not appear confident they would succeed, and instead placed hope in "well-wishers" – opportunistic support from donors.

The lack of member confidence in district support appeared warranted. In Phalombe I met with two district water development office staff. They had no funding to expand water services and few resources for even basic monitoring. District staff relied almost exclusively on NGO funds, which were uncertain. A CADECOM staff member noted WPCs would need to consider paying for fuel for district staff to simply visit a problematic water point. The lack of resources at a district level was consistent with the findings of other research in Malawi (described earlier in Section 1.2.1), which found district water division offices were under-resourced and lacked the means to provide even a minimal level of support (Baumann & Danert, 2008; Bawi Consultants, 2018; Lockwood & Kang, 2012; Oates & Mwathunga, 2018).

Regulatory support was also lacking in some areas. The boreholes in Galufu and Chilaulo were installed without adequate oversight. As discussed earlier, members in Chilaulo reported contractors did not drill the borehole deep enough.[76] In my discussions with the area mechanic in Nkhumba, he highlighted the implications of a lack of oversight

[76] Boreholes in Phalombe (Helema, Malekuwa and Nanchopwa) were installed with oversight.

during borehole construction, which had been an issue ignored by the district office until recently:

> *The main problem with boreholes at Galufu can be explained in two ways from a technical point of view: Firstly, the number of rods involved could be fewer than normal [i.e. the pump does not go deep enough] and secondly the contractor did not sink deep enough to the desired depth. The latter failure becomes more prominent if the water table is getting low. And sometimes they sink the boreholes in the middle of the rainy season which makes them find water far above the required standard depth.*
>
> *We have tried to explain to government officials that each time a contractor comes on site to sink a borehole, area mechanics must be there to monitor and check for fraudulent practices. At first, they seemed not to appreciate our concerns. But because more and more boreholes have stopped functioning owing to the same reasons, we have seen the government recognising our role. And now they have made it a requirement that whenever the contractor comes to the village to sink a borehole, the area mechanic must be present to check for any malpractices. As of now, there is not much that can be done to those boreholes at Galufu, but we should strive to ensure that this does not happen again. – David, area mechanic, Nkhumba.*

Challenges associated with poor installation are not uncommon and are discussed in academic RWS literature as an important determinant of RWS sustainability (Carter & Ross, 2016; Katz & Sara, 1997; Lockwood et al., 2003). As in Galufu, a lack of oversight and subsequent poor construction can leave WPCs with few options for change. Other, less than ideal alternatives include waiting for election periods when government MPs and candidates become more generous with funding. Neither of these options provides certainty of support, hence in this sense the absence of district support was a negative aspect of members' motivational climate.

Members also found accessing NGO support difficult. In all cases, the initial NGO who supported the installation of boreholes (CADECOM in Phalombe, and CADECOM, Oxfam

and Freshwater in Blantyre), no longer worked with the communities. Helema and Nanchopwa members reported eliciting technical help from other NGOs, with imperfect results. Helema required their second borehole (not installed by CADECOM) to be re-drilled, but received a new borehole casing instead. Nanchopwa requested a new well head and received a second-hand one after multiple attempts. While in Galufu, member attempts to enlist support from NGOs in Galufu had been ineffectual to date. Trish (member) noted "we have approached other NGOs who come to our village and all they have managed to do is take pictures of this borehole". Members indicated that in most cases support was requested opportunistically, for example from NGOs who might work in the area.

As a result, regarding major works, members' motivational climate was characterised by limited external support. In this regard, the motivational climate was tenuous, albeit temporally less relevant than immediate technical challenges. Although WPCs were confident and felt capable of addressing minor issues and the day-to-day management of the water point, options for resolving significant issues were limited and likely to thwart competence and a sense of autonomy. Members had few choices to source support, navigate major challenges or progress aspirations for additional water points. Consequently, WPCs' capabilities had clear limits.

In the following section I describe specific WPC tasks which appeared to be experienced as more controlling than others.

6.4.4 There is limited competence or autonomy support for mundane O&M activities

Although all WPCs reported being able to manage and maintain the borehole, there were limits to the internalisation of some O&M tasks. Broadly, this included tasks that lacked an immediate rationale and tasks such as preventative maintenance, bookkeeping, and regular tariff collection.[77] Although these tasks are recommended in GoM guidelines and form part of training; they were potentially mundane; and/or were

[77] Clearly, collecting tariffs is important to pay for O&M and hence sustain the water supply. However, as I will describe later, the funds may not be used until later. As a result, other more immediate costs and motivations associated with activity (e.g. user conflict and motivations focused on avoiding shame or disappointing community members) may be more salient.

difficult. As a result, for some members they were experienced as a controlling pressure on their motivations. There were mixed findings in terms of consistency across these tasks in all villages except Nkhumba and Nanchopwa. For example, Helema collected monthly tariffs except in January or February when incomes were lower, Malekuwa WPC collected in some months but not others, while Galufu and Chilaulo WPCs collected only when necessary. I discuss performance relevant to these tasks in more detail in Chapter 8.

Although members did not explicitly report these tasks as controlling, I observed feelings of pressure in interviewees when such tasks were discussed. Often, the tone of members' responses suggested a focus on adherence or compliance (e.g. "this is what I [member] should be doing"). Members' lack of internalisation was further shown by their tendency to focus on the activity itself rather than on providing a rationale for doing the task. Previous SDT research has found tasks which are perceived as meaningless can thwart autonomy and result in feelings of control (Assor et al., 2002; Jang et al., 2010; Reeve, 2009).

I propose that is expected such tasks are experienced as controlling to a degree, as their rationale is not immediately obvious. In the case of preventative maintenance, if the borehole appears to be operating well, with no faults, the case for preventative maintenance is questionable. Similarly, the rationale for record-keeping is also tenuous.[78] Preventative maintenance and bookkeeping tasks provided little opportunity for feedback and generally maintain the status quo in terms of borehole operation. When I refer to feedback, I refer to the WPC member having their effectiveness confirmed by the task itself, or via an external source. I suspect the absence of a rationale resulted in some mismatch between what is recommended practice in GoM guidelines, and what was actually done by members.

Members' attitudes towards preventative maintenance and other mundane activities may be due to more pervasive reasons. Bureaucratic approaches to WASH

[78] Compare these tasks to repairs of a breakdown where the rationale and feedback is much clearer and more immediate.

management, as is mandated in Malawi guidelines, can be incongruent with historical or cultural approaches to water management (Whaley & Cleaver, 2017). Potentially mundane activities like bookkeeping, regular meetings and maintenance can fail to materialise as expected, not only because of a lack of training, but also because they do not fit with existing village norms and approaches to the management of communal resources (Whaley & Cleaver, 2017). Hence, it is likely that both competence and rationale (i.e. autonomy) pressures were relevant for members.

To be clear, members or village leaders at no time referred to CBM as controlling, and nor did they use language such as "imposed" to describe CBM, or CBM-specific tasks. By contrast, members were cognisant and critical of "imposed" NGO approaches more broadly, as I discuss later in Section 6.5.4. Members did not direct such criticisms to CBM projects, which overall they valued and endorsed. However, as I have discussed above, and as indicated in Chapter 5, there were indications that members felt pressured to perform some tasks, although they did not say so explicitly in interviews. Because of this, I posit that some members broadly endorsed CBM and RWS and their roles, but found specific activities such as tariff collection and preventative maintenance to be moderately controlling.

These mixed motivations are consistent with SDT models which outline a hierarchy of motivations that operate at different levels, including the domain level (e.g. motivations regarding water supply and participation in the WPC more broadly) and the task[79] level (e.g. motivations regarding specific tasks associated with the WPC) (Vallerand, 1997). In the examples mentioned above, although the rationale for improved water supply and the importance of participation (domain level) in the WPC had generally been endorsed and internalised; specific tasks, namely a monthly tariff collection, and often preventative maintenance, had not. Because of this, the sense of autonomy associated with such activities was limited. Members were either not doing such activities, or doing them with feelings of compliance, or had modified the approach to suit their needs.

[79] Vallerand (1997) refers to the domain as 'situational'.

From here, I transition from members' management capabilities to examining the NGO–community relationship, and how it affected members' motivational climates.

6.5 CADECOM–community relationship and the ABCD approach

In this section, I highlight the impact of the NGO planning and engagement approach on the NGO–community relationship and subsequent motivational climate. As discussed in Chapter 5, at times the NGO–community relationship had a direct impact on members' motives, through members' experience of external motives in the form of donor pressure and through introjected motives of wanting to please donors. However, in most cases, the NGO–community or the NGO–WPC relationship were a more distal factor in members' motivation climates, relevant primarily at project inception. For further context to this section, I reference Section 1.3 of this thesis, where I outlined the range of participatory approaches as categorised by Arnstein (1969). These approaches ranged from tokenistic (informing, consulting or placating citizens, i.e. controlling) to participation at the level of citizen power (direct citizen control, i.e. autonomy). Below, I outline examples and implications for the motivational climate when the CADECOM–community relationship was positive (closer to citizen control), and when the relationship was negative (closer to tokenistic). I also discuss briefly CADECOM's ABCD approach as it related to Phalombe communities before a more detailed analysis of ABCD in Chapter 7.

6.5.1 Relevant projects and positive relationships with CADECOM mediated needs support

Participants described projects as relevant when CADECOM (or other NGOs) consulted or engaged the community in a meaningful way and projects responded to participants' needs or goals. When participants were consulted, they were able to articulate their priorities for the partnership. Josie, the village head in Galufu, captured this when discussing the approach of Freshwater, the organisation which installed boreholes in her village:

> *In the past when Freshwater was still running its projects, whenever they came into the village they would book a meeting with the villagers on a specific date,*

and we would discuss many things in that meeting. They would tell us their intentions and the projects they had at their office, and ask us to choose from them. And then we would choose … they would do what we have chosen … It was a good relationship because they were not imposing the projects. Rather, it was us telling them what our needs are … therefore, they would implement exactly what we demanded and did not impose their need as our need.

As shown in her response, when projects were relevant, respondents felt respected and heard, and subsequent projects were experienced as responsive to their needs.

CADECOM's ABCD approach in Phalombe (Nanchopwa, Helema and Malekuwa) framed the CADECOM–community relationship and subsequent experience of community actors. Village heads, animators and members in Phalombe viewed the relationship with CADECOM positively. WPC members described CADECOM's approach as consultative and collaborative, and as leading to relevant and positive projects (including water projects). In this regard, village heads and animators noted CADECOM projects addressed community-identified needs, rather than agency (e.g. NGO), pre-identified needs. Whether pre-identified needs were the same as the communities' needs appeared to be somewhat irrelevant. What was important was the opportunity for community actors to define and voice their own needs and aspirations. Therefore, CADECOM's approach in Phalombe can be considered needs-supportive. It provided a sense of choice (i.e. autonomy support) for participants and aligned with existing volitional goals, and thus was a positive influence on members' motivational climates.

As CADECOM's engagement and project design approach were framed via ABCD, the following section explores the ACBD in greater detail in terms of supporting the BPN needs of participants.

6.5.2 ABCD mediated needs support

As noted in Section 6.5, CADECOM used the ABCD approach to projects and partnerships in Helema, Malekuwa, and Nanchopwa. ABCD was part of a deliberate

design. CADECOM adopted the ABCD approach[80] because Australian project funders had designed the AACES program to encourage NGO delivery partners to include strength-based approaches (which include ABCD) in their development approaches (DFAT, 2015). CADECOM staff indicated the approach was a radical divergence from their earlier deficit-based and top-down development approach. Notably, AACES projects were designed to align with existing community goals, and assumed communities were 'not empty' and were able to contribute to projects. In terms of ABCD tools, participants articulated their vision, identified assets and organised those assets to progress the vision, with technical and material input from CADECOM.[81] Importantly the role of CADECOM staff changed to be more facilitative and less directing of the development process, as had been the case prior to the use of ABCD.

CADECOM staff were emphatic in attributing project successes to the ABCD process. They believed it resulted in the creation of relevant projects and supported participants' motivations. Prior to the use of the ABCD process, staff were responsible for supporting communities through regular monitoring visits and accountability measures. Martin, a primary driver of the ABCD approach for CADECOM, described the change in subjectivity for community actors through ABCD:

> *It is like the communities are [now] the ones who are architects or agents of their own development, rather than being imposed upon by [the government or CADECOM] to say, "we want you to do irrigation" but for the communities to say, "we want to do irrigation". So it is arising from the community, and then either the government or CADECOM are just coming to facilitate the realisation of such kind of a dream.*

Nelson, a field officer with CADECOM reflected on ABCD's role in ensuring that the work initiated by projects continued beyond CADECOM's involvement after the projects finished:

> *I stopped working in … Kuntaja, in June. 2016 ... But if you can go today, even tomorrow, you can be surprised because whatever you are going to see there you*

[80] CADECOM staff and CADECOM's program lexicon usually describe ABCD as a 'strength-based approach' rather than using the term 'ABCD'.

[81] The water point was one of many projects implemented under this process. Hence, responses from CADECOM and leaders regarding the effect of ABCD were often not individualised for water.

will see it is as if the project was continuing … it is all because of the SBA [i.e. ABCD].

The ABCD approach was valued and recognised by animators and village heads as positive.[82] All animators noted the approach supported local input into what projects were implemented and how they were implemented. Jeffrey (animator, Malekuwa) viewed projects as having a shared agenda between CADECOM and Malekuwa community members. Similarly, Jomo (animator, Helema) viewed ABCD as consultative and "not imposed". As a result, subsequent projects, including the water point, were viewed as relevant and responsive to priorities. Hence, I consider the framing of these projects to be BPN-supportive in terms of supporting members' sense of autonomy and relatedness.

Priorities in Phalombe communities were articulated through the visioning stage of the ABCD approach.[83] In this stage, members articulated their 'dream' (i.e. aspirational) village. Sharmim, an animator in Nanchopwa, described the visioning process:

We were divided into four groups, and each group was asked to draw what their village looks like and their vision and aspirations for the future. From there, we compared what had been written by different groups and so we consolidated the ideas.

It was shameful drawing our village … the way it looked originally … because we were short of many forms of social infrastructure. But then after drawing on a separate sheet of paper how we wanted to see our village look in 2018, we discovered that it was beautiful, and I hope we are almost there … we still integrate and mainstream the AACES concepts [into] several local development projects.

In the visioning process, participants identify priority projects. Gastin, an animator in Nanchopwa, described how the goal of improved RWS emerged from the visioning process:

[82] Insights from leaders were limited to those provided by animators of the three AACES communities. Only two village heads were able to be interviewed in Phalombe, one of these interviews was relatively unproductive.
[83] I describe the various stages of ABCD in more detail in Chapter 7.

The borehole did not come like manna from heaven. I stated earlier on that we drew the vision map of our community, and prioritised water as our most urgent need.

Following the visioning, community participants identified their own 'assets' and planned how they could be mobilised to progress visions. Assets varied depending on the process but included both tangible assets (e.g. labour, skills, natural resources, finances, infrastructure) and intangible assets (e.g. existing associations, relationships, values, individual qualities). Animators described the value of participants' input into planning and construction phases as important. Jeffrey (animator, Malekuwa) noted the participants offered solutions to some of the challenges identified, and Simon (animator, Helema) noted the significance of recognising the community had existing assets, which could be used to progress development goals. In the case of water points, villages contributed some cash, sand, labour, bricks, land for the borehole and food for the drilling contractors. Simon, an animator in Helema noted:

[CADECOM] ensured [there was a] sense of responsibility in the community, that they would do one part and we would do the other like 50–50. Therefore, CADECOM made sure that … the community were trained … such that they would be self-reliant, thereby ensuring the sustainability of most of their projects.

The asset mapping stages built on the sense of volition and choice of the visioning stage. The identification of assets and the village's contribution towards project outcomes was consistent with concepts of competence support in SDT and hence were part of a supportive motivational climate. I discuss further alignment between these stages in ABCD and SDT later in Chapter 7.

6.5.3 … although the reach of the ABCD approach was limited

Although CADECOM staff, animators and village leaders were positive in describing the ABCD approach, the effect for WPC members was limited. Only two of six Phalombe members, both from Nanchopwa, referred specifically to the ABCD process and recalled the visioning stages. Most WPC members had minimal direct engagement with CADECOM. Hence, although they viewed the CADECOM–community relationship as positive and CADECOM's approach as relevant in general, they were unable to provide

critical reflection on the ABCD process. As a result, their responses were more muted than the responses of those who directly interacted with CADECOM and the ABCD process.

As mentioned earlier, the apparent limited reach of ABCD to WPC members was critical to the change of direction of this thesis. I originally intended to focus on if and how the ABCD process supported autonomous motivations of WPC members. However, except in Nanchopwa, WPC members were either not involved in the ABCD process, or did not understand that CADECOM's approach was referred to as ABCD.

An ABCD refresher workshop held with members, animators and village heads in Phalombe provided an opportunity to incorporate reciprocity into the research design and observe participants' level of understanding of ABCD principles. During the workshop, participants were taken through a rapid ABCD process. All stakeholders were able to articulate a visions for water supply in their community. However, in subsequent stages there were gaps between the ideals of ABCD and the understandings or attitudes of participants. For example, participants struggled to identify and value their assets (or strengths) – an important aspect of ABCD processes. When WPC members were asked what and how they could contribute to their plans for the water point, there was minimal focus on less tangible assets such as decision-making input, informal and formal associations in the community, and the capacities of individuals and institutions – all key elements described in the AACES / ABCD training manual (Peters & Eliasov, 2014). Instead, the respondents focused primarily on physical assets – contributions of bricks, sand, labour and land. In comparison, animators were somewhat more familiar with tangible and intangible strengths. In addition to physical assets they included a limited number of 'soft' skills. Hence, it seemed the impact of ABCD in fostering a positive motivational climate was limited to establishing the relevancy of the water point, and limited competence support via material asset mapping. In sum, there was a disconnect between the theory and practice of ABCD.

I was surprised at the limited assets identified in the workshop. Physical assets (e.g. bricks, sand, land, water) identified by both members and animators were typical of

development projects in Malawi. Bricks, sand and the like are commonly used in lieu of cash as part of a community contributions in development projects, and they are used to indicate community willingness 'to participate'. For example, Chiweza's research (2007, p. 69) on village heads and aid programs in Malawi provided the following illustration via a village head, who noted:

> *We usually mobilise communities to start moulding bricks with the hope that we will attract a development project. Bricks are very important, and that is where our participation is evident. Without bricks, there is no development that we want. Therefore, if you talk about participation, our part is to mould bricks, draw water, and collect sand.*

Most projects that came out of AACES across the three villages were identical. Although the research literature on ABCD (Mathie & Peters, 2014; Mathie et al., 2017; Mengesha et al., 2015) views the approach as being suitable for driving creative and bottom-up approaches to development, in Helema, Malekuwa and Nanchopwa there were only minor material differences in the projects between locations. In addition to boreholes, projects under AACES included a village savings and loans group, a 'pass-on' (goat) program, and agriculture and sanitation projects.

In one sense, the lack of variety is perhaps not surprising. There is some homogeneity in the challenges communities faced, and as a result, aspirations were often similar between villages, particularly as villages were in close proximity to each other. When CADECOM staff were asked about the lack of project diversity, they noted that participants tended to identify both projects and goals based on what they knew and had been exposed to. The absence of creative approaches may also be cultural. Booth and colleagues (2006) argue the large power distances and excessive deference in Malawi I discussed earlier in Section 3.3 can stifle innovation. It is likely CADECOM's own innovative approach was also constrained by what staff had been exposed to, and what was normalised in development programs.

The approach to water supply management was also consistent across locations. This also is not surprising. MoAIWD regulations (MoIWD, 2007, 2010) have standardised

CBM as the most common response to water management. CADECOM staff explained the importance of aligning with existing government approaches, as Martin the CADECOM secretary noted: “we try to [ensure that] whatever we are doing is aligning to what is already in the government plans”. CBM formed part of the GoM’s national strategy, and district structures were theoretically in place to support WPCs beyond CADECOM’s involvement. Hence, CADECOM viewed existing government regulations as an ‘asset’, although, as I discussed earlier in this chapter and in Section 1.2.1, the efficacy of government support in CBM is questionable due to under-resourcing at the district level.

In addition, CBM was normalised for WPC members, and it appeared there was no demand for alternative management approaches. Some may view this as obvious and symptomatic of the universal adoption of CBM in Malawi and beyond. There was almost no indication members felt their choices were limited by an absence of other approaches to RWS management beyond CBM. The only divergence was interest in alternative technologies. One community expressed interest in solar pumps: “like our friends in Koliwoko [a neighbouring village]”, another spoke about open channels to address saline boreholes.

Although CBM was the only choice available, this lack of choice was not described as controlling by members. This contrasted with other programs and NGO approaches which members critically reviewed as controlling (“imposed”, i.e. BPN-thwarting). CBM was not described in this manner. However, as I described earlier in Section 6.4.4, there were elements innate to CBM (e.g. preventative maintenance, tariff collection) which created feelings of pressure, but these were never explicitly mentioned by members’. As this analysis indicates, members appeared to experience different motivations at different levels. At the RWS level more generally (the domain level) members endorsed the CBM approach while some specific tasks (the situational level) were experienced as controlling (Vallerand, 1997).

In sum, for CADECOM, ABCD had been transformational to its development approach. The language used by CADECOM staff demonstrated a significant change from

controlling to autonomy-supportive approaches (i.e. fostering a more positive motivational climate). Staff observed that projects were more relevant and supported more internalised motivations and hence were considered more sustainable than projects initiated under CADECOM's previous development approaches. From the perspective of community actors, explicit reference to ABCD and linkage to BPN support was limited to animators, two WPC members, and to a lesser degree village heads. However, in general the CADECOM–community relationship was still considered supportive by village heads and RWS members in Phalombe communities. Based on the interviews, CADECOM had engaged communities in a meaningful and trustworthy manner (relatedness support), provided opportunities for participants to articulate their priorities (autonomy support), and aligned their projects and contribution to these priorities (competence support). In doing so CADECOM had supported more internalised motivations.

Although the impacts of the ABCD approach were positive, it had not actualised some of the transformational ideals described in the ABCD academic and grey literature (Mathie & Cunningham, 2003; O'Leary et al., 2011). For WPC members, the reach of ABCD was minimal and it remained a more distal support of their motivations. Most WPC members had limited direct exposure to the ABCD approach. The gap between claims in the literature and the limited reach at WPC level may also reflect that these village case study sites were chosen as representative cases from AACES, as I discussed earlier in the research design in Section 4.3. In more successful cases, community participants may be more likely to attribute success to the ABCD approach (Winterford & Cunningham, 2017).

The discrepancy between ABCD ideals and outcomes suggests that further comparisons of ABCD impacts across a range of village success outcomes may help isolate and identify the degree to which ABCD can support BPNs in an RWS context. Alternatively, it may also be that ABCD training for committee members, and 'handing over' the ABCD approach as a management tool for WPCs and other committees alike, could provide more fruitful outcomes for RWS. That is, where relevant, ABCD could be adopted as a living approach by community partners, beyond formative project stages. I return to

this later in Chapter 9. In Chapter 7, I explore from a theoretical perspective the motivational claims and impacts of the ABCD approach more generally.
Perceptions of CADECOM and other NGOs were not all positive. In the following section I outline experiences of irrelevant "imposed" projects and subsequent poor relationships with community actors.

6.5.4 Irrelevant projects and poor relationships with CADECOM compromised needs support

In this section I outline how the NGO–community relationship can go awry, resulting in a BPN-thwarting motivational climate and community participants feeling disenfranchised, pressured, and potentially amotivated. Village leadership and members in Blantyre district villages (Chilaulo, Galufu and Nkhumba) criticised aspects of CADECOM's approach. The participant criticisms presented below are relevant for NGO–community relationships more broadly, rather than RWS projects specifically. RWS projects were somewhat buffered from controlling NGO approaches, as it was a high priority for communities. Hence, this section is more a cautionary tale. Using participants' experiences, I illustrate how NGOs' controlling approaches risk creating negative NGO–community relationships and inhibiting participants' internalised motivations more generally. Where relevant, I draw links to RWS implementation.

Although CADECOM implemented similar projects in Blantyre and Phalombe districts, their engagement frameworks in the two districts were different. Of the three Blantyre villages, CADECOM only installed a borehole in Nkhumba; Chilaulo and Galufu had existing water supplies. In all Blantyre villages, CADECOM's ICD program included a range of projects such as village savings and loans, livelihoods (e.g. baking), and a goat pass-it-on program. Similar initiatives were implemented in Phalombe. However, while ABCD was used as the engagement approach in Phalombe, in the Blantyre ICD program CADECOM staff referred to their approach as more akin to a top-down[84] approach with projects often pre-designed by CADECOM.

[84] I refer to an earlier point in the thesis where I explained that in Nkhumba, CADECOM transitioned part way from a top-down and needs-based to asset-based approach. However, none of the community stakeholders I spoke to in Nkhumba had any recollection of the ABCD approach. Because of this I categorised Nkhumba with the other Blantyre ICD communities.

In Blantyre villages, attitudes towards CADECOM ranged from a sense of disempowerment (Galufu WPC members) to hostility (Chilaulo and Nkhumba village heads). Most criticisms centred on irrelevant projects which did not involve consultation. Members and leadership referred to 'pre-designed' projects, which were mismatched with community skills and needs. Village heads held firm opinions on CADECOM projects and other NGO-driven programs which failed to engage with them or with the community more broadly, as explained by Chimwemwe, the Nkhumba village head:

> *CADECOM staff did not invite all the chiefs in this area and explain to us their objectives. This is why we differed in many things, because they had just dictated to us the things that they would do for us. They also just left us from [when] the projects stopped, and took along all their staff.*

> *We [the community along with CADECOM] are supposed to be both benefiting. Yes, they are our bosses but … we feel that we are being used and they are benefiting in some way … they just come to implement what they have planned, or they come and tell us what to do. Honestly, we have never sat down to discuss the priorities, and they have never come to consult us.*

It is important to note that while this and other specific criticisms were concerned with CADECOM, it appeared such attitudes were a legacy of historical experiences with other NGOs.

The village heads in Galufu and Chilaulo echoed these thoughts. The village head in Chilaulo noted NGOs' engagement approaches were often poor:

> *Most NGOs are too much talk and less action. They come to us with promises and plans they made without engaging us, only to do too little on the ground or to do what we really don't need at that time. In other words, they have a tendency of bringing projects without consulting the community. – Ezra, village head, Chilaulo.*

As illustrated in this quote, leaders recognised NGOs including CADECOM, had their own agendas and priorities which could dominate the relationship and lead to imposed, irrelevant and thus often poorly designed projects. As a result, subsequent projects

often failed, further cementing the feelings of blame community members directed towards NGO partners:

> *Those that have completely died are some to do with water, the livestock they gave us, most of them died. We had a school for adult learning and since the teachers were not paid, the schools closed. – Josie, village head, Galufu.*

Clearly, the motivational climate in these examples was not supportive of participants BPNs.

Interviewees in Phalombe district (Nanchopwa, Helema and Malekuwa) were positive in describing CADECOM's approach, but also critical of imposed projects and a lack of consultation from other NGOs. Francis, a WPC member in Nanchopwa, noted:

> *Other NGOs just come to the village with already-designed programs for the community without seeking our views … consultation helps to get solutions to the most pertinent issues that the community has. When not consulted, NGOs end up solving non-priority issues for the community.*

Similarly, Jomo, an animator in Helema, referenced a forestation program which elicited participation through payment. He noted, "if the payments are delayed, the work ceases. If the payments stop, the work stops". Negative experiences of "imposed" projects were reported frequently by research participants. They provided clear examples of motivational climates which were not autonomy-supportive (e.g. controlling approaches and limited choice) with subsequent impacts on the perceptions of, and relationship with (i.e. relatedness) NGO partners.

CADECOM staff themselves highlighted the impact of imposed projects. Their responses echoed those of village leaders. All CADECOM staff described historical organisational practices, and the practices of NGOs which implemented pre-designed projects. CADECOM staff in Blantyre explained projects in Chilaulo, Galufu and Nkhumba were implemented using a needs-based and top-down approach, while Phalombe used an ABCD approach. Prior to ABCD, CADECOM staff recognised approaches were often failing to engage meaningfully with community participants. They noted rigid, pre-designed project designs and funding arrangements with their donors meant projects lacked flexibility. Projects could not meet changing needs within a community, and

failed to adapt to the community context. As a result, they recognised some projects had historically been irrelevant and were not sustained by community members.

Controlling (i.e. autonomy) pressures were also evident in the power dynamics between village heads and their NGO partners. I use the term 'partners' loosely in this example. Leaders were in a conflicted position. On one hand, the partnership brought material benefit that was otherwise impossible to access. On the other hand, the lack of consultation and irrelevant projects were disruptive. In some cases, NGO projects not only failed, but had caused tension within the community. For example, the Nkhumba village head commented on a food supplement program brought by Save the Children:

> *So they said they want pregnant women and children under the age of two years. Those more than two years old did not qualify. So it was sensitive because some children were malnourished but being over two years were not included … they [Save the Children] neglected others who were more malnourished but just above the age bracket they were targeting. Therefore, those children above two years and malnourished were excluded but they were also in need of support … So this was confusing to the community. – Chimwemwe, village head, Nkhumba.*

Despite such examples, village heads felt powerless and reluctant to voice complaints. Ezra in Chilaulo explained that in relation to CADECOM and other NGO-supported programs, "given we are the ones being assisted, it's difficult to stand up and complain". Others in the community also reported feeling devalued by the approach. In Galufu, Charles the WPC Chair noted:

> *The problem was that CADECOM just imposed their solutions on us without taking on board our home-grown solutions to some of the issues … there were some cases where we felt that they should have evaluated our traditional solutions and integrated them with theirs to come up with the best solution.*

Interestingly, the village leaders' (i.e. both village heads and animators) critiques of the NGO–community relationship mirrored the users' critiques of the WPC–user relationships I described earlier in Section 6.1.2. In both cases the village leaders and users were concerned with their sense of autonomy with respect to the relationships

with the NGO and with the WPC respectively. Positive relationships were characterised by the power holder (i.e. NGO or WPC) having a shared agenda with the so-called subordinate (i.e. village leader or user). I hesitate to use the term 'subordinate', as it was generally when actors did not feel like subordinates that the relationships were positive. When relationships were experienced positively, the power differential between the two parties was less clear.

When the power holder met the expectations of the subordinate, they were viewed as trustworthy and effective. As a result, the NGO–village leader relationships and the user–WPC relationships operated with relative harmony and the village leader or user felt their autonomy was supported. As explained by Jomo, the animator from Helema:

> *The sense of responsibility and ownership brought about by CADECOM was really important … before bringing a project CADECOM would call us and ask if the project was feasible and necessary in this community. They took their time to understand our needs before implementing their projects.*

By contrast, when relationships were not working, the agendas appeared misaligned between parties, as I described earlier. In these instances, the relationship was characterised by mistrust, conflict and blame. That is, the relatedness and autonomy of the participants was not supported.

In addition to imposed projects, interviewees were also critical of poor project design. For example, the village head noted programs even if relevant were often too short and ended before they were "sustainable". Related to this point, there was community demand for additional M&E in Blantyre. There was no indication monitoring by either district or NGO staff had continued in Blantyre beyond project completion. Village heads in Chilaulo, and WPC members in Galufu and Nkhumba, explained the importance of monitoring to ensure they were on track to sustain projects, including RWS projects. This is seen in the responses below:

> *CADECOM should strengthen their monitoring and evaluations. They should not take for granted their initiatives. They need strong mechanisms for their projects to work and see through the concepts they have introduced, to see if they have worked and if they fit with the community. The problem with CADECOM is they*

come to introduce programs and when they leave, they never return to monitor and evaluate. – Wisdom, WPC chair, Nkhumba.

I mean that they [CADECOM] were just demonstrating and not coming back to the community to monitor if was properly done. – Charles, WPC chair in Galufu

Interviewees cited such design aspects as frustrations and reasons for project failure.[85]

I saw such responses from participants as being analogous to seeking feedback to support their sense of competence and autonomy – referred to as informational feedback in the SDT literature (Deci et al., 1989). In informational feedback, others' perspectives are acknowledged, and where required non-controlling feedback is provided to navigate competence barriers. In the absence of such support, participants appeared to feel both unsupported and ill-equipped to continue. As Chimwemwe, the village head in Nkhumba explained, "they [NGOs] come and train but do not monitor. So the community people remain the same".

In summary, meaningful engagement, opportunities to articulate priorities, and subsequent relevant projects supported the motivational climate. While imposed NGO agendas, subsequent irrelevant projects and poorly designed projects inhibited the motivational climate. In addition, projects were considered likely to fail when they lacked engagement from community members. CADECOM staff distinguished between the engagement approach used in Blantyre (top-down and needs-based) with the approach in Phalombe (ABCD). CADECOM staff and village leaders viewed the former critically whilst the latter was perceived as supporting the motivational climate for community actors responsible for project or program continuance. In terms of RWS, internalised motivations were generally pre-existing in communities as it was a priority issue. Controlling approaches are clearly harmful to the NGO–community relationship and risk inhibiting existing autonomous motivations for projects which include, but are not limited to, RWS projects. Ideally, as explored in Sections 6.5.1 and 6.5.2, existing

[85] Over the five-year program period of AACES in Phalombe, CADECOM noted they completed quarterly, structured, M&E in addition to additional support visits. Further, animators in AACES also served an M&E role.

internalised motivations for projects such as RWS are further enhanced and supported via BPN-supportive practices – that is, a supportive motivational climate.

6.6 Chapter summary

In this chapter, I explored aspects of the motivational climate that shaped the quality of WPC motivation. Findings and analysis revealed members' motivational climate was negatively impacted by conflictual relationships with users, an absence of support structures for significant financial or technical challenges, poorly designed projects by NGOs, and the limited resources and skills of the WPC. By contrast, positive relationships with users, an ability to complete minor maintenance tasks, the relevance of water points to community needs, existing local support structures and positive relationships with the implementing NGO, had a positive influence on motivational climates and motivations.

In the following Chapter 7 I discuss in more detail the potential for ABCD to support autonomous motivations. Because ABCD was not implemented directly with the WPC members in the AACES case study villages, the following chapter is largely theoretical. It interrogates the motivational mechanisms and claims of ABCD based on ABCD theory and practice documents, and draws on the Malawi case study to illustrate ABCD concepts. Later, in Chapter 9, I draw on findings from Chapters 5 to 8 to discuss possibilities for greater integration of ABCD practices and principles into RWS.

Chapter 7 Interrogating the motivation mechanisms and claims of asset-based community development with Self-Determination Theory

This chapter answers Research Question 2b – "from a theoretical perspective, does ABCD support autonomous motivations, and if so how?". I use SDT to assess the motivational mechanisms and claims of ABCD. As discussed earlier, the original focus of this thesis was to examine the role of ABCD in supporting WPC member motivations. However, ABCD has had limited application in the RWS context. Further, although ABCD was used by CADECOM in the AACES case studies, only two of six WPC members from AACES villages in Phalombe could recall the ABCD process. ABCD's use was limited to framing the RWS intervention and defining the CADECOM–community relationship. It was not used to determine RWS management approaches, and nor did it define the CADECOM–WPC relationship.

Hence, although this chapter draws from examples from Phalombe, it focuses on a theoretical analysis of the motivational mechanisms and claims of ABCD. The chapter uses SDT as a framework to first determine if and how common ABCD tools support more autonomous motivations. I also outline how SDT tools and concepts can evaluate the motivational claims of ABCD-based programs. The findings show SDT can strengthen the theoretical base, practice and evaluation of ABCD interventions.

Most of the material I present in this chapter is presented in an article for which I was the lead author and which was submitted to the *Community Development* journal (Cunningham et al., 2021). The article has been accepted and is due to be published. The article is mostly reproduced verbatim, with minor modifications for reasons of clarity and consistency. As the article was a standalone piece, there is inevitably some repetition of material from previous sections of this thesis which include illustrative quotes from research participants, though I have attempted to keep this to a minimum.

Appendix A includes the acknowledgement of publication required by the University of Technology Graduate Research School.

7.1 Introduction

ABCD is an approach to community development where community members are the principal actors in the development process. They decide, plan and act to progress their own development goals, using their existing assets. The approach was first defined by the seminal work of Kretzmann and McKnight (1993), based on their community organising experience in urban, low-income contexts in North America. Since then, the use of ABCD has expanded to include diverse applications in international development in low-income countries (e.g. Mathie et al., 2017), health (e.g. Foot & Hopkins, 2010) and urban regeneration (Jackson et al., 2003). Assets in ABCD range from the material, such as land, buildings and finance, to less tangible assets such as relationships, skills and institutions. Assets represent individual and collective strengths and capacities which communities can mobilise towards community identified goals. The limited academic literature claims the focus on existing strengths and capacities, in addition to locally identified priorities, is motivating and drives community-led change.

The emphasis on assets and a community-led approach is contrasted to needs-based approaches to development. Need-based approaches are informed by the dominant paradigm in development; they are deficiency-orientated and frame communities in terms of their problems (Kretzmann & McKnight, 1993; Mathie & Cunningham, 2003). The focus on problems is considered to be demotivating for community participants. The ABCD literature argues it can lead to fragmented and often ineffective solutions to community development, and it can create "environments of service … where residents come to believe their well-being depends on being a client" (Kretzmann & McKnight, 1993, p. 2).

ABCD has developed through practice rather than critical research, and the majority of the literature is grey literature in the form of evaluations and practice guidance. Although motivation outcomes are central to ABCD, there is a notable absence of

theory or rigor in how motivation is defined or conceived. The ABCD literature tends to neglect or oversimplify motivation, reducing it to a binary concept. People are considered to be either motivated – energised and proactive, or not motivated – as unwilling or unable to take part in community development interventions (Foot & Hopkins, 2010; Willetts et al., 2014). As a result, the motivational mechanisms of ABCD interventions are superficially understood and motivational claims lack nuance.

I propose ABCD could benefit from drawing on other existing theories, in particular Self-Determination Theory (SDT), to assess its motivation mechanisms and claims. Developed in psychology, SDT is an empirical theory of motivation which has been tested in various contexts for over 30 years. Applications include motivations in the contexts of education, healthcare, relationships, psychotherapy, organisations, sports and exercise, goals, health and well-being, and pro-environmental behaviour. SDT is concerned with autonomous motivations – that is, with volitional behaviour perceived as originating from inside and characterised by an absence of feelings of pressure or control. SDT has defined a taxonomy of motivations of different quality, their role in human development, and how social environments may support or undermine high quality, volitional and hence autonomous motivations.

Hence, this paper examines the relevance of SDT to ABCD, and proposes how the theory may be integrated into ABCD. I argue SDT can strengthen the theoretical foundations of ABCD in two ways. First, it can do so by providing a means to understand the motivational mechanisms in ABCD processes. Second, SDT can be used to evaluate the motivational claims of ABCD, and specifically interrogate the motivation quality resulting from ABCD programs.

7.2 Methods to examine the relevance of SDT to ABCD

There are three parts to the method used to examine the relevance of SDT to ABCD. The first is a comparison of SDT and ABCD. Before proposing opportunities for integration of SDT into ABCD, it was considered important to compare their different theoretical roots and approaches to knowledge. I reviewed SDT academic and ABCD

academic and grey literature to compare them and identify areas of alignment and divergence. The comparison was underpinned by literature on paradigm mapping (Lincoln et al., 2011) and included a comparison of theoretical attributes which define and distinguish fields of ABCD and SDT, such as contrasts in research paradigms and values associated with ABCD and SDT. These were supplemented by additional attributes which are unique to ABCD and SDT, for example, concepts of autonomy and internally-driven change. A summary of the full comparison is included in Appendix H, and key aspects are discussed below. The second method was the use of SDT concepts to analyse the motivational mechanisms in ABCD tools. Specifically, I used SDT to determine how ABCD tools support autonomous motivations. I do this by analysing if and how ABCD supports peoples' BPNs. Finally, I describe several SDT measures and outline their relevance in evaluating the motivational claims of ABCD based programs.

To illustrate the ABCD process and SDT motivation constructs, this paper draws on examples from a development program implemented by an Australian and Malawian non-government organisation (NGO). The program was implemented in rural Malawi from 2012 to 2017 using an ABCD process, and hence it provides a relevant example to illustrate alignment between ABCD and SDT. The program targeted the improvement of water, sanitation and hygiene, and food security in over 150 rural villages. The program is the subject of a broader doctoral study by the lead author, focused on water supply and the motivations of volunteer water committee members. This paper does not interrogate the merits of the Malawi program. Instead, it draws from the ABCD tools used in the program and the subsequent motivation experiences of participants, principally the water committee members and village leaders. The project is used to provide a grounded example and greater clarity of ABCD principles and SDT motivation constructs.

The next sections provide additional background information about ABCD and SDT, including core concepts, principles and paradigms. This is followed by a theoretical comparison of ABCD and SDT, and opportunities to integrate SDT into ABCD.

7.3 ABCD – principles and applications

ABCD is based in a social constructionism worldview, where reality is assumed to be socially constructed, and language creates meaning to that reality (Elliott, 1999; cited by Mathie & Cunningham, 2003). Hence, 'disadvantaged' communities are defined by their deficits in needs-based approaches, and they tend to internalise this as their reality. Kretzmann and McKnight (1993, p. 2) define needs-based processes as creating "images of needy and problematic and deficient neighbourhoods, populated by needy and problematic and deficient people". The ABCD literature argues such approaches have longer-term negative consequences. These consequences include impinging on the participants' motivations and capacity for innovation, and the promotion of a reduced sense of local power and agency and a reliance on outside actors and welfare to solve problems (Ireland & McKinnon, 2013; Mathie & Cunningham, 2003, 2005; Cahill, 2010).

From a constructionist perspective, transformation requires a different language to replace this reality of deficits with one of capacity and potential. Consequently, ABCD principles seek to shift focus to a 'glass half-full' attitude. It does this through processes which rather than focusing on deficits, identify stories of community-led change and community assets (Mathie et al., 2017). When I use the term 'assets' in this paper, I consider it to encompass diverse elements consistent with ABCD literature. It refers to categories such as individual skills and personal qualities, associations, natural resources, physical assets, economic assets and cultural and spiritual values. Mathie et al. (2017, p. 56) describes this change of orientation from needs to assets as a process of transformation, where an "internalised sense of powerlessness is challenged, as people reframe themselves as subjects capable of acting".

The ABCD process also reframes the role of development practitioners and participants in development projects. Participants rather than practitioners define development priorities in ABCD-driven development programs. Hence, practitioners must relinquish control of development outcomes. Their role and their relationship to participants becomes facilitative rather than directive – a departure from top-down projects.

Various versions of ABCD principles can be found throughout the grey and academic literature (Foot & Hopkins, 2010; Kretzmann & McKnight, 1993; Mathie & Cunningham, 2005; Nel, 2018). Here, I summarise them into the following four elements:

1. Place-based: A community is the unit of focus and the source of assets and networks.
2. Asset-based: ABCD process starts with what exists in a community, the strengths and capacities of people. This focus is more likely to inspire change than focusing on needs and deficits.
3. Association-based: Informal and formal associations of people in the community bring leadership and drive the vision and action of ABCD based initiatives.
4. Internal focus to development: Community-driven rather than externally-driven development allows people to work on issues and projects they care about.

7.4 Contentious areas of ABCD

Before comparing ABCD and SDT, I describe three areas of contention concerning ABCD. First, some authors argue that ABCD takes an overly optimistic view of communities. In ABCD, social capital is considered as a force of good, but issues of power and oppression within communities are ignored (Gray, 2011). A 'community' in the ABCD literature is usually defined by geography; however, it can include a group of people who share a common interest and circumstance (Garven et al., 2016). The general term 'community' used in ABCD grey and academic literature, and in this paper, disguises the diversity of groups, relationships, agendas and power within communities. Such diversity within communities has implications for equity. For example, traditional power holders within a community may direct a development process to the exclusion of minority groups. ABCD approaches are criticised for leaving structural power and privilege unchallenged. This applies to power within communities and to power held in external structures which perpetuate institutionalised discrimination (Friedli, 2013; Gray, 2011; MacLeod & Emejulu, 2014).

Instead of directly challenging power inequalities, ABCD approaches tend to assume power imbalances can be addressed through inclusion. A facilitated ABCD processes

seeks to elicit participation from those often excluded from community decision-making (Peters & Eliasov, 2014). In addition, some authors and practitioners see the ABCD processes as indirectly confronting structural power inequalities. Collective action and empowerment are seen as a potential means of building solidarity and giving a political voice to those marginalised because of their gender, class, age or ethnicity (O'Leary et al., 2011). However, tackling structural inequalities is outside the primary focus of ABCD. Power often remains uncontested within communities, and instead ABCD seeks to 'raise the floor', rather than 'lower the ceiling'.

A second criticism of ABCD is that its focus on self-help and reduced reliance on external support is complicit with neoliberal agendas. Gray (2011) and Macleod and Emejulu (2014) argue ABCD privatises public issues such as poverty and inequality through promoting entrepreneurship and innovation. Macleod and Emejulu (2014) reported that discourses on community empowerment, including approaches like ABCD, justify the rollback of the welfare state in the United Kingdom. However, such critiques are simplistic, and reflect the abuse of ABCD approaches, rather than failings inherent to the approach itself. In this line, Burkett (2011, p. 574) argues ABCD is not a product of neoliberalism, but instead holds "radical possibilities" for creating social change and responding to neoliberal agendas.

Finally, as noted earlier, many of the claims regarding ABCD lack critical reflection, a limitation which extends to both motivational mechanism and claims of ABCD interventions. Academic literature argues the ABCD process is motivating compared to needs-based approaches, with motivation attributed to two aspects of ABCD. First, the focus on assets, rather than deficits, is purported to affirm capacity and therefore support motivations (Mathie et al., 2017; Mathie & Cunningham, 2003). ABCD practice guidelines note that "when communities recognise their assets and opportunities, they are more likely to be motivated to take initiative" (Peters & Eliasov, 2014, p. 34). Second, in the ABCD process people identify and work on issues important to them, in contrast to top-down identified goals which risk being imposed and irrelevant. As a result, the focus on relevant and community-identified priorities is also considered

motivating. However, as noted in the introduction, these motivation claims are often oversimplified, assumed and remain unqualified in the ABCD literature.

7.5 An introduction to SDT and core concepts of SDT

For an outline of core concepts of SDT, including a discussion on BPNs, motivation types and approaches to measure motivation types, and processes of internalisation, I refer the reader to Chapter 2 of this thesis. In this Chapter I introduce SDT, discuss the concept of BPNs, outline the motivation types as defined in the SDT continuum, and discuss how SDT concepts are measured. To avoid repetition, I have not included this earlier discussion here.

7.6 Theoretical comparison of ABCD and SDT – philosophies and approaches to knowledge

The following section compares the positions of ABCD and SDT on selected theoretical attributes. Based on the comparison, I assess areas of alignment and divergence between ABCD and SDT. This informs the opportunities for the integration of SDT into ABCD discussed later in this article.

7.6.1 Different and potentially conflictual research paradigms

Change processes in ABCD are considered complex, unpredictable, context dependent and difficult to measure (Mathie & Peters, 2014). As ABCD has philosophical roots in the social constructionist paradigm, most research uses qualitative or interpretative methods, where the participants' voices and experiences have primacy (Jackson et al., 2003; Mathie & Peters, 2014). Quantitative methods are occasionally used in the ABCD literature, often in response to donor demands to capture changes in assets (e.g. income, networks and changes in physical infrastructure) and well-being (Hills et al., 2010; Mathie & Peters, 2014). However, when used, they are context dependent, making it difficult to compare or generalise findings across studies. Hence, the evidence base of ABCD is fragmented, with some claiming the ABCD academic literature is yet to

capture change processes in a meaningful and consistent manner (Friedli, 2013; Gray, 2011).

By contrast, the large-scale and relatively homogenous methods popularised in SDT research mean the evidence base is consistent and extensive. With roots in psychology, most literature and associated claims of SDT are based on statistical positivism (Chirkov & Anderson, 2018). Specific measures of motivation constructs include questionnaires with pre-determined answers (refer to CSDT 2020 for examples). The questionnaires are used to support generalised statistical correlations associated with the quantitative tradition (Chirkov & Anderson, 2018) and provide a codified means to define, test and measure SDT constructs and causality in SDT.

However, SDT's basis in positivism and almost exclusive use of closed questionnaires has led to criticisms. These include the removal of people's voices and individual experiences when dealing with constructs such as a sense of autonomy, relatedness and competence (Chirkov & Anderson, 2018; Wisniewski et al., 2018). In addition, the aggregation of data means findings are artificially abstracted from the messiness of people's social contexts, and hence SDT's claims are at risk of being oversimplified (Chirkov & Anderson, 2018). Such criticisms highlight potential conflict between positivist roots and claims of SDT as a person-centred theory – subjective individual experiences are all but removed in most research approaches. For social constructionists this could be a cause for concern.

The claim that quantitative and qualitative approaches are incompatible is not unique to ABCD and SDT. It has been the subject of ongoing debate in research philosophy, with some considering the theoretical paradigms behind each approach as "so different that any reconciliation between them would destroy the philosophical foundations of each" (Lincoln & Guba, 1985, p. 268). However, there is increasing interest in pluralistic research approaches which consider the use of both quantitative *and* qualitative (e.g. mixed methods) as a valid way of knowing and a means to bridge the apparent philosophical divide (Johnson & Onwuegbuzie, 2004). One illustration of this is the application of the (quantitatively derived) SDT framework to make sense of individual

and subjective experiences of motivation. Nonetheless, the conflicting paradigms remain a point of debate and resistance for scholars and practitioners when considering the integration of SDT into ABCD.

7.6.2 ABCD is focused on collective experiences, SDT aggregates individual experiences

ABCD approaches focus on the mobilisation of groups of people defined by geography and interest ('communities'), with social change driven by consensus and co-operation on shared goals (Kretzmann & McKnight, 1993). Hence, experiences of motivation and well-being are discussed as generalised outcomes in the ABCD literature. A motivated community is evidenced by collective action and initiative. For example, in Malawi, motivation is evident in group co-ordination and construction of a communal water supply, meaning motivation is generalised across groups. In addition, different proxies, namely collective action and tangible outcomes, are used to indicate motivation. As a result, the quality of motivation is not considered, and motivation is considered in terms of a group experience rather in terms of individual motivation experiences.

In contrast, SDT starts with a focus on individual human experiences of BPNs and subsequent motivation quality. These experiences are aggregated to draw generalised conclusions. Motivation types are usually determined through validated quantitative questionnaires. Hence, SDT has methods and resolution which focus at the individual and group scales, whilst ABCD focuses primarily on group scale – motivation at a collective action level. I do not consider the different resolutions of the two concepts as a barrier to integrating SDT into ABCD per se. However, the use of SDT would require a re-orientation of ABCD methods to focus more at a human (e.g. individual) scale, and then the identification of links between individual and collective experiences of motivation.

7.6.3 ABCD and SDT are critical of hegemony

Both ABCD and SDT are critical of oppressive forces. Specifically, the ABCD literature is critical of development norms which position professionals as experts in control of development programs, and participants as less powerful subjects (Cahill, 2010). Kretzmann and McKnight (1993, p. 4) argue many development experts preference a

(needs-based) “deficiency orientation” towards communities and ignore their existing knowledge and capacities. As noted earlier, some argue the effects of this are harmful, propagating a sense of helplessness and reliance on outside experts to solve local problems (Mathie & Cunningham, 2005). Therefore, external experts and power holders in development programs are often viewed critically and cautiously in ABCD approaches.

Although the ABCD literature acknowledges communities and their cultures have their own stratifications of power and oppression, as discussed earlier, judgement is reserved. Instead, ABCD’s endogenous focus views local knowledge, community assets, and relationships, as forces for positive change (Cahill, 2010). Mathie and Cunningham (2003, p. 483) highlight this tension when they note ABCD does not “directly confront the issue of unequal power within communities and its attendant oppressions; instead, [it] tend[s] to appeal to the higher motive of using power to act in the shared interests of the common good, and to uncover the strengths of those who might otherwise be less valued”. Hence, culture within communities, including culture which may maintain negative power relations, is not challenged directly in ABCD.

SDT is critical of hegemony in cultures, and these criticisms extend to a variety of cultural contexts (e.g. workplace and ethnic cultures) which it critiques “directly and unabashedly” (Ryan & Niemiec, 2009, p. 269). Empirical SDT research has found controlling environments can be harmful for both well-being and performance. For example, in the education context, Deci et al. (1982) found teachers pressured by accountability measures talked more and criticised students more than teachers who were not pressured. The teachers’ controlling approaches affected students who were less satisfied and had reduced performance. Such findings are consistent with similar empirical SDT studies across different contexts. Controlled environments are correlated with reduced well-being and poor quality motivation; as such they are viewed as oppressive.

7.6.4 ABCD and SDT value outcomes of autonomy, human potential and growth

ABCD and SDT are both concerned with autonomously driven change. For ABCD, this includes a focus on social change directed from within a community using community assets. According to the ABCD literature, every community has capacities and relationships which can be used to build community assets and improve well-being (Ireland & McKinnon, 2013; O'Leary et al., 2011). ABCD scholars argue that the focus on community-led change, rather than external agency driven change, results in more relevant programs while reducing reliance on uncertain outside resources (Kretzmann & McKnight, 1993; Mathie & Cunningham, 2003). Such endogenous approaches to development are claimed to be more sustainable. Kretzmann and McKnight (1993, p. 5) argue this as "communities are never built from the top-down, or from the outside in".

Tangible and intangible outcomes of ABCD programs are interdependent. Both types of outcome are seen to support human development. The grey and academic literature credits ABCD programs with intangible well-being benefits such as hope and self-esteem (Peters et al., 2011; Willetts et al., 2014). These are seen to have inherent value, while also considered important psychosocial drivers of tangible change. Tangible outcomes of ABCD programs are context dependent. Tangible outcomes commonly include improvements in social capital, improvements in local economies and empowerment, improved health, and access to services. Ultimately, the co-dependent intangible and tangible outcomes support community health and human well-being.

Similarly, SDT supports human flourishing and considers the propensity for growth in people to be a universal human trait. Through satisfaction of BPNs, people move towards both well-being and performance outcomes. Hence, both ABCD and SDT see people as having an inherent capacity for growth and flourishing. They also both claim the promote improvements in well-being and performance by reducing external controls and supporting change from within.

7.6.5 The process of ownership in ABCD is congruent with internalisation in SDT

Ownership is a goal of most participatory development practices, including ABCD. Ownership in the development context refers to a sense of psychological commitment, care, and sense of responsibility (Jones & Kardan, 2013) and, occasionally, control over

development programs. A participant in Malawi described their experience of ownership as:

> *If [the water pump] breaks down that will be the end of the road. If [the pump] remains available, it is possible to be self-reliant ... it is our responsibility to care for it, because we own it.*

ABCD attempts to design for participants' ownership over development projects by starting with community priorities. Peters (2013), contrasts this approach with top-down development programs where participants are treated as beneficiaries or passive recipients of service providers. Ownership in asset-based approaches is a process. New initiatives are owned when they are integrated with a sense of self – through relevance to life goals and people's investment into the initiative.

Internalisation in SDT holds similarities with ownership in ABCD. SDT's continuum model (refer to Figure 2) provides a useful means to understand the process of internalisation. Motivations change with time. For example, motivations can be internalised and move from more controlled to more autonomous forms, or from left to right on the continuum. Equally, motivations can become more controlled with time. Stone and colleagues (2009) illustrate how motivations change in relation to workplace rules. They describe introjected participants (i.e. staff) as only having "partially digested external workplace rules … [and not] accepted as their own", while in integrated regulation rules or norms are endorsed and integrated into a sense of self (Stone et al., 2009, p. 6). According to SDT research, this process of internalisation is supported by environments which satisfy the autonomy, competence and relatedness of participants.

There are conceptual similarities between ownership (ABCD) and internalisation (SDT), namely both promote behaviour driven from inside. In ABCD this is evident in the focus on community priorities and limited control from external agencies. However, in contrast to the SDT continuum, ABCD lacks nuance in defining the process, quality and quantity of ownership (or internalisation) which happens through this process.

7.6.6 The practitioner supports autonomy in ABCD and SDT

The ABCD practitioner acts as a facilitator rather than director of the development process, with participants considered experts of their social and geographical contexts (Willetts et al., 2014). To enable participants to recognise their expertise and capacity, facilitators are guided to step-back and let communities step forward to lead the change process (Mathie & Cunningham, 2005; Peters & Eliasov, 2014). This approach can be contrary to conventional relationships between development practitioners and participants, as highlighted by a village head (chief) in Malawi:

> *[NGOs] just come to implement what they have planned or come and tell us what to do … honestly, we have never sat down to discuss the priorities, or they have never come to consult us.*

Hence, the facilitator's manner, their relationships with participants, and the tools they use, seek to support the sense of autonomy experienced by participants. In doing so, ABCD aims to move decision-making from outside experts to the participants.

Similarly the SDT practitioner (the power holder in the dynamic, e.g. boss, parent, coach etc.) is guided to support the autonomy of clients and reduce the controls placed upon them (Ryan & Deci, 2017). Compared to ABCD, the expertise of the SDT practitioner is still prominent in their relationship with participants. However, expertise is delivered in a non-controlling and autonomy-supportive manner. The practitioner methods differ based on the application of SDT. However, guidance includes providing informational rather than directive guidance; emphasising the interesting or challenging aspects of tasks and acknowledging tedious aspects; avoiding contingent rewards and surveillance; acknowledging participants' perspectives; providing relevant information in a non-controlling way; offering choice (not control); and encouraging self-initiation rather than pressuring participants to behave in specified ways (Gagné & Deci, 2005; Stone et al., 2009).

The areas of theoretical alignment of SDT and ABCD discussed above are not exhaustive and require further critique. In particular, I expect the different research paradigms are likely to provide a source of debate and challenge to integrating SDT into ABCD. However, on balance I view many of the principles of ABCD and SDT as complementary.

The nuance in motivation constructs that the SDT literature provides, offers a means to integrate SDT into ABCD tools and programs. I discuss this in the following sections.

7.7 Using SDT to analyse the motivational mechanisms of ABCD tools

As noted earlier, the grey and academic literature argues that ABCD approaches support autonomous motivations by focusing on issues people care about. Currently, ABCD mechanisms which support motivations are only superficially understood. Hence, this section analyses motivational mechanisms in ABCD using an SDT lens. I focus the analysis on four significant tools which are commonly applied in ABCD approaches, and which reflect the principles of ABCD described earlier in Section 7.3. I present the tools in the stages in which they are typically delivered in Sections 7.7.1 to 7.7.4. I also analyse each stage to determine how it supports the BPNs of participants as antecedents of more autonomous motivations.

7.7.1 Appreciative interviews and plenary with community participants

The appreciative interview stage in ABCD includes a reflection on the participants' past successes, which have been completed independently of external (i.e. NGO or government) assistance. For example, a farmer in Malawi described his move from selling charcoal to vegetable farming, which was more profitable and less laborious. The appreciative interviews are completed in a plenary format and aim to trigger a sense of possibility among participants that they can enact change without external support. It also identifies transferable success factors which lead to change events (Cooperrider & Srivastava, 1987). For example, it would identify what resources or networks the farmer drew on to change. An ABCD facilitator in Malawi described this as:

> *The multiplier effect of [ABCD]. Because if one farmer succeeds ... the other farmer is motivated to say, "if this one can do it, I can do it as well". They will not be saying "[the NGO] has done it to this person".*

The outcomes highlighted in the quote above are congruent with SDT's conceptualisation of competence as a precursor to autonomy. Competence in SDT reflects a feeling of efficacy where capacities are engaged in efforts to achieve mastery

(Gagné et al., 2018; Ng et al., 2012). As a BPN, competence satisfaction is considered an important driver of autonomous, higher quality motivation. Seen through an SDT lens, in the example above the farmer's success highlighted the capacities (competence) and choices (autonomy) available for other farmers in similar contexts, rather than having to seek assistance from external sources which is likely more difficult.

7.7.2 A positive vision for the future

Following the appreciative interviews, participants dream or forecast their ideal community. Through a facilitated process of debate and consensus they determine an agreed vision. In the Malawi program, visions took the form of physical maps which included, for example, images of stronger relationships between people, new economic opportunities to support food security, a new water supply, or a new school. In this stage the facilitator responded to these priorities and determines what was outside the NGO's expertise or resources to support. The ABCD literature contrasts this bottom-up approach with programs which have pre-set agendas which may not be relevant to participants. An ABCD facilitator in Malawi described the role of visions regarding goals of improved water supply as:

> *It is their need to have clean water that pushes them to achieve the clean water… it comes [from] within ... not somebody coming and pushing to have clean water.*

The visioning stage is consistent with concepts of autonomy support in SDT. Autonomy support in SDT is characterised by the provision of choice, acknowledgement of the participants' perspectives and the absence of controlling pressure (Ryan & Deci, 2017; Stone et al., 2009). Similarly, in this stage participants have the freedom to define development activities and outcomes which they value, as opposed to projects being directed by external agencies. Direction from external agencies may hinder both a sense of autonomy and trust (i.e. relatedness) with respect to the community–agency relationship. This was the feedback from Malawi participants who criticised such approaches as "imposed". Instead the ABCD visioning seeks to facilitate a community-led decision-making process in a non-controlling manner. According to SDT such environments are more conducive to autonomous motivations.

7.7.3 Asset mapping

Following visioning, the assets of the community are named and categorised. These categories can vary between projects; however, those used in Malawi were typical of other ABCD programs and included associations, individual skills, institutions and natural resources. This stage aims to identify assets within the community which can later be used to progress the community vision and related goals. As per the appreciative interview stage, the focus on assets facilitates participants' sense of efficacy (Kretzmann & McKnight, 1993, p. 352).

From the perspective of SDT, autonomy and competence are supported through the emphasis on participants' capacities (assets) and how these may be used to progress priorities. By limiting the focus on needs and problems, it also aims to minimise competence frustration, a condition which supports more autonomous motivations. As noted by an ABCD facilitator, "in the end, you find that there are few things which the community does not have … there are more things which the community can do on their own".

7.7.4 Planning and action

Peters and Eliasov (2014) describe this stage as the 'what, why, who, how, where and when' of action in ABCD-driven programs. The planning and action stage identify and schedule tasks needed to progress the vision using relevant assets that were identified earlier. Importantly, this stage starts with 'quick wins' before addressing more ambitious goals as part of action plans. Quick wins are tangible, community-led actions, completed with no external help in a short time frame (Willetts et al., 2014; Mathie & Peters, 2014). Through initial successes, the approach aims to establish the community's confidence in its own capacities and its ability to work together and build participant trust in practitioners and the ABCD process (Willetts et al., 2014).

From an SDT perspective, this phase reinforces a sense of competence, through early and tangible change, and a sense of confidence and trust with the ABCD process and partners when short-term outcomes are achieved. In addition, activities associated with

ABCD are typically of a pro-social nature, designed to benefit those enacting the change and others in the community. SDT research has shown autonomously-driven helping behaviour further supports the autonomy, competence and relatedness of those helping (Weinstein & Ryan, 2010). Hence, it is likely this action phase in ABCD likely further supports BPN satisfaction and reinforces autonomous motivations.

Beyond quick wins in ABCD, participants progress to more ambitious goals which may reveal gaps in expertise or resources. Hence, the planning and action stage also identifies how to address these gaps in competence through either linking participants' assets or, where necessary, the use of external support. This support might include relevant training, or material support.

The facilitated planning and action process described above is congruent with autonomy and competence-supportive practice in SDT. In SDT, the practitioner role includes clarifying the expectations of participant behaviour and outcomes, and the alignment of participants' behaviour strategies with their skill levels. In addition, SDT practitioners support participants when competence or control barriers emerge, through feedback and skills support or training (Ryan et al., 2011). The SDT literature argues such support mechanisms should be delivered in an autonomy-supportive manner so as not to undermine internalised motivations. This has clear parallels with the ABCD planning and action process, where participants identify their priority projects and apply their assets to progress plans. The facilitator supports participants to overcome competence barriers through targeted support when required.

7.8 Using SDT to evaluate the motivational claims of ABCD

As noted earlier, the grey and academic literature argues that ABCD approaches are motivating. However, these claims lack nuance. Motivation outcomes are usually described in binary terms (motivated or amotivated) rather than the quality of motivation. The previous section 7.7 outlined how ABCD tools can support motivations based on SDT. The following section outlines three opportunities to apply SDT tools and concepts to evaluate the motivational claims and outcomes of ABCD-driven programs.

7.8.1 Evaluating programs through BPN support

There is an opportunity to integrate SDT concepts of autonomy, relatedness and competence (i.e. BPNs) into the ABCD lexicon. Many ABCD principles are consistent with the concepts of BPNs and BPN support. For example, the ABCD principles described earlier, asset-based, association-based and internal focus to development, align with the concepts of competence, relatedness and autonomy in SDT. Through a BPN lens, development programs (e.g. ABCD and top-down approaches) can be evaluated according to the degree they are BPN-supportive or BPN-thwarting. As noted earlier, the degree to which a program supports or thwarts BPNs has implications for well-being and performance (i.e. motivation quality). Hence, a focus on BPNs, along with associated measurement methods, provides an empirical basis to test the merits and effectiveness of ABCD approaches, and importantly, to compare their effectiveness with that of top-down approaches to development.

SDT has several validated quantitative tools relevant to such applications. Possible examples include the Health Climate or Work Climate Questionnaires (CSDT 2020), which are used to evaluate the degree to which the environment provided by work or health care environments is autonomy-supportive. For example, the Health Climate Questionnaire asks if patients felt their health care practitioner provided choices and options for treatment, if patients felt listened to, and if practitioners empathised with the patient's circumstances. In addition, the Basic Psychological Need Satisfaction and Frustration Scale (BPNSFS) (CSDT 2020) could be used to assess the degree to which autonomy, relatedness and competence needs were satisfied or thwarted in ABCD-driven development programs. The BPNSFS scores the satisfaction of each BPN, for example questions such as "I feel a sense of choice and freedom in the things I undertake" and "most of the things I do feel like I have to [do]" (BPNSFS in CSDT 2020, p. 2) quantify both autonomy satisfaction and thwarting . Both questionnaires would require only minor changes to be adapted to development program contexts.

In addition, qualitative measures could be used in combination with quantitative questionnaires to identify experiences of BPN satisfaction. Such pluralistic approaches

address challenges associated with SDT's largely positivist approach, where individual voice and experience is absent in aggregated data. Example lines of enquiry might include: How was autonomy expressed and experienced by participants in a particular project? What aspects of the ABCD process were experienced as more or less autonomy-supportive? How did autonomy change with time? How did experiences of autonomy support differ between agencies and their approaches? Such lines of enquiry, along with quantitative measures, can assess individual experiences of volition (autonomy), efficacy and mastery (competence) and connected and trusting relationships (relatedness) in response to development interventions.

7.8.2 Evaluation of participants' motivation quality

The ABCD literature often quantifies participants' motivations in binary terms, as either demotivated or motivated, with 'motivated' evidenced by action or mobilisation. However, as stated earlier, these measures are overly simplistic. They disguise a range of motivation experiences and qualities important to both participants' well-being and the effectiveness of development programs. Participants in the Malawi program highlighted this nuance in motivation quality, often describing multiple and conflicting motivations of varying quality. For example, in the case of water supply and management, a participant experienced controlled motives of wanting to avoid the shame of failure in parallel to being driven by altruistic motives and care for other community members. In addition, a community leader described the impact of payments from NGOs to complete projects. Payments drove short-term behaviour, but the leader noted these projects were unlikely to be sustained once the payments stopped. These poor-quality motivations were contrasted to projects which were valued and had continued. Such complex motivation experiences are simply not captured in the existing ABCD literature.

Existing SDT measures have been tested to evaluate such variable motivation experiences. The Self-Regulation Questionnaire (SRQ) (Sheldon et al., 2017; CSDT, 2020) can be used to determine motivation typologies before or in response to ABCD-based interventions. The SRQ determines the significance of various motivation types for participants (for example, the significance of shame compared to altruistic motives).

The SRQ can also be used to determine more broadly whether people are motivated by autonomous or controlled motivations. In this way, participants' motivation types could be evaluated prior to, and in response to, ABCD interventions, to determine if and how program approaches have influenced motivations.

7.8.3 The SDT continuum can model internalisation in ABCD-based interventions

The SDT continuum can track the internalisation of behaviours resulting from the planning and action stage of ABCD. Development projects emerging from the planning stage will inevitably require new behaviours. For example, in the Malawi program, developing new water supplies required management processes. Water committee members were required to collect water tariffs, conduct regular maintenance tasks and enforce hygiene standards and rules at the water point. Internalisation of such behaviour is contingent on the degree to which participants experience the project, and their roles, as autonomy-supportive or controlling. The SDT continuum provides a framework to determine if new behaviours have been internalised or not, and how this may change with time (Ryan & Connell, 1989). Continuing with the water supply example, committee members may initially collect tariffs as that is what they are expected to do. However, with autonomy-supportive practices they may begin to internalise and value the practice as necessary to sustain the water point. Hence, the SDT continuum can track motivation types with time, and support practitioners to adjust their approach accordingly to foster internalisation.

These three opportunities for integrating SDT into ABCD are not exhaustive. However, they provide means to strengthen the theoretical base, practice and evaluation of ABCD interventions. Integration will also generate debate, as the differences between the paradigms of ABCD and SDT do present practical and philosophical challenges. However, SDT's quantitative measures do not exclude the qualitative methods typically used by ABCD researchers and practitioners. Indeed, I view a pluralistic approach, which applies questionnaires and SDT concepts in addition to qualitative approaches, as appropriate and valuable to provide a more nuanced understanding of motivational claims. For example, SDT questionnaires can determine if, and to what degree, a relationship with an NGO was experienced as controlling. Moreover, qualitative data

(e.g. interviews) can identify and explore specific aspects of why and how the participant-NGO relationship was experienced as controlling.

Although SDT argues that concepts such as autonomy, relatedness and competence are universal, I recognise the importance of adapting any SDT tools to the context in which they are used. Adaptation is particularly important for ABCD-based programs which are often implemented in marginalised contexts and which often prioritise local knowledge systems. In the space available, it is not possible to give a detailed account of specific adaptations; however, local definitions and expressions of SDT concepts (using local language) such as autonomy, competence and relatedness are one such example (e.g. Roche et al., 2018).

7.9 Chapter summary

ABCD is an approach where community development participants drive the development agenda and process. ABCD proponents claim the approach to be inherently motivating, however motivations are often defined in binary terms (i.e. motivated or demotivated). As a result, there is limited understanding or critical analysis of the motivational mechanisms and motivational claims of ABCD, and yet the quality and quantity of motivation drive outcomes of the ABCD process. By contrast, SDT is an incrementally developed theory that has been tested in experimental settings and interventions. SDT has identified distinct motivation types of varying quality. More autonomous forms of motivation are associated with persistence, performance and well-being, while the opposite is true for more controlled motivations.

The different epistemological foundations of SDT and ABCD outlined in this chapter present practical and philosophical challenges to integration. SDT's positivist roots and research methodologies contrast with ABCDs social constructionist approach. ABCD values participant voice and participatory methods. These are largely absent in SDT research which almost exclusively uses questionnaires and statistical analysis to make large-scale generalisations. An added challenge is the limited number of examples of SDT's application in 'development' and low-income contexts.

Despite these challenges, I argued that ABCD's bottom-up principles and practices are, on balance, congruent with SDT's top-down theory. At a foundational level, I identified the alignment of SDTs conceptualisations of autonomy with ABCD's standpoint of community-driven change. From this foundation, other areas of alignment included critiques of hegemony and controlling approaches, and support for practitioner approaches which foster the autonomy and competence of participants. The alignment between the two concepts provides an opportunity for the integration of SDT theory into ABCD.

Integration has implications for improving ABCD practice by providing a nuanced and critical understanding of motivation mechanisms in ABCD tools and practitioner approaches. In addition, SDT concepts and tools provide means to evaluate the motivational impacts of ABCD interventions. Specifically, three opportunities for the evaluation of ABCD approaches to development were outlined. First, SDT can evaluate the degree to which ABCD processes support the autonomy and competence of participants. Second, SDT can evaluate the nature of a participant's motivations in response to ABCD processes. Third, SDT can track changes in the internalisation of new behaviours with time. These opportunities for the integration of SDT and ABCD can strengthen the theoretical foundations of ABCD and improve the practice and evaluation of ABCD interventions. Further research is needed to test the application of SDT tools to test the motivational claims of existing ABCD programs. In addition, the relevance of SDT constructs and questionnaires in low-income contexts, where literacy levels may be low and practitioner-participant power distances are high, requires further study.

As noted earlier in this thesis, ABCD was used to frame the inception of RWS in the Malawi AACES communities, but ABCD did not shape the ongoing management of water. Hence, later in Chapter 9 I build on findings from this paper (Chapter 7) to discuss how ABCD could be integrated into CBM. Meanwhile, in the following chapter, I return to the WPCs in Blantyre and Phalombe and discuss their management effectiveness, and draw links to their motivations I discussed earlier in Chapter 5.

Chapter 8 Water point committee motivations and management effectiveness

In this chapter, I address Research Question 3 – "how did the quality of the WPC members' motivations influence their management effectiveness?". The aim of this chapter is to determine what the WPC did in each village (i.e. their management effectiveness), and draw links to members' motivational drivers outlined earlier in Chapter 5. I do not aim to predict the sustainability of water supply based on members' effectiveness.

The relationship between motivation and tasks is not linear. Typically, in SDT research, effectiveness outcomes are linked to motivations and motivational climate through large-scale questionnaires and statistical correlations. In this research, linkages between motivations and management effectiveness were based on members' descriptions of if and why (i.e. their motivations) they performed a management behaviour (e.g. "I conduct maintenance because otherwise the women in the village would be walking to collect water"). I also draw inferences based on members' motivation types (and the respective 'quality' of the motivation type) I presented in Chapter 5 and members' management effectiveness. As I draw from preceding chapters there is inevitably some repetition, however this has been minimised where possible.

The chapter is structured as follows. First, based on the borehole and WPC survey, and the interviews, I summarise the findings on WPC effectiveness. Second, I discuss management effectiveness and motivations across the case study WPCs. Third, I discuss motivations and their consequences for effectiveness more generally across all locations.

8.1 Borehole characteristics and indicators of WPC effectiveness

As discussed in Section 4.5.6 of the research design, I evaluated members' effectiveness regarding RWS management practices based on a borehole and WPC survey, and

interviews. Table 16 below includes a summary of these findings which I discuss later in this chapter. I define WPC effectiveness as the assessment of the WPC's practice against the performance-related fields shown in the table below. To put some of the findings in Table 16 in context for the reader, core activities and expectations for WPCs according to GoM guidelines (MoAIWD, 2015b), and discussed in Chapter 1, include[86]:

- Tariff collection: The WPC has collected regular payment from users to pay for maintenance and repairs.
- Transparency with users: The WPC has provided feedback to users on what spare parts had been bought and how much money was collected.
- Maintenance and repairs: The WPC has ensured the water point is kept clean, and members have completed regular inspections, conducted preventative maintenance and repairs when needed.
- Rules: The WPC has developed and enforced rules relevant to hygiene and water collection at the water point.

I have included additional fields in Table 16 not covered in the list above (e.g. persistence, proactive approaches), which are indicative of effectiveness and relevant to the quality of WPC motivations.

Table 16: Summary findings of WPC effectiveness from water point survey and interviews

	Chilaulo	Galufu	Nkhumba	Helema	Malekuwa	Nanchopwa
Year installed	2007	2000	2012	2014	2014	2014
Households served	100	3-4	65	40	100	89
Rate (MWK) and frequency of collection	200 / month	Previously 500 / month -- not collecting now	100 / month for users 200-300 per 1000 bricks for brick makers	100 / month (except Jan and Feb[B])	100[A] / month (can vary)	100 / month (no collection previous 2 months[B])
Savings and value of spare parts stock (MWK)	10,000 & no spares. Money collected	0 & no spares. Money collected	52,000 & 10,000 in spares	11,500 (across 2 boreholes) & no spares[D]	~5,000 & 40,000 in spares	29,500 & 36,000 spares

[86] A more complete list of the WPC role according to guidelines was included in Chapter 1, Box 2.

	Chilaulo	Galufu	Nkhumba	Helema	Malekuwa	Nanchopwa
	when needed	when needed				
Equivalent months of savings and spares (calculated) [D]	1	0	9.5	2.9	4.5	7.5
Are finance records kept?	None available	None available	Yes, viewed	Yes, viewed	Yes, receipts only viewed	Yes, viewed
WPC maintenance approach	Repair when broken	Repair when broken	Service every 3 months	Service every 3 months	Service every 1 -2 months, but none for previous 3 months	Monthly grease, maintenance when required
When last out of service and how long to repair?	Feb 2018 ~1 week to repair	Currently non-functional	Apr 2018 < 24 hours	Never	Dec 2017 < 24 hours	~Dec 2017 < 12hours
What helped with repairing/ maintenance?	Area mechanic completed repair	Consulted with the area mechanic. Water table too low.	Area mechanic, skilled WPC. Able to mobilise people to assist, had cash on hand to buy parts	Area mechanic used for maintenance	Area mechanic used for maintenance	Able to access a welder, mobilise money, produce a proposal for NGO help
Satisfaction with yield?	Low yield, not satisfied	No flow, not satisfied	Satisfied	Satisfied[E]	Satisfied	Satisfied, though water was salty
WPC meeting frequency	Monthly	2 / month	2 / month	2 / month	2 / month	2 /month
Rules enforced[F]	Hygiene and collection	Inconclusive	Hygiene and collection	Hygiene and collection	Hygiene and collection	Hygiene and collection
Evidence of proactive approaches	No	No	Yes, constructed laundry area, WPC sell water to brick makers	Yes, engaged area mechanic for training	Yes, engaged area mechanic for training, used posters for user communication	Yes, constructed drainage area, worked with NGOs for assistance
Transparent behaviour with users?	No	No	Yes	Mixed	Mixed	Yes

	Chilaulo	Galufu	Nkhumba	Helema	Malekuwa	Nanchopwa
Positive user relationship ?	No	No	Yes	Mixed	Mixed	Yes
Persistence of management behaviour?	No	Mixed	Yes	Unknown	Unknown	Yes

A: Note, two users reported 200MWK/month
B: January to March are particularly difficult months in terms of income and food security for farmers in the Southern Region. It is possible this is why tariffs were not collected during this time.
C: Olivia reported this was previously 22,000 but due to challenges (e.g. maintenance), much of this was spent.
D: This was calculated by: (savings + value of spares) / (the number of households served * monthly tariff)
E: Helema had two boreholes, the first (not installed by CADECOM) had a low dry-season yield
F: 'Hygiene' refers to rules related to maintaining cleanliness and hygiene at the borehole. 'Collection' refers to enforcing rules around queuing and use of the handpump.

Based on findings in Table 16, I categorised three groups of committees based on their effectiveness. They are:

1. WPCs with high effectiveness: Nkhumba and Nanchopwa. They demonstrated: proactive approaches to management, regular-intermittent tariff collection, higher levels of savings relative to the number of users, rapid repairs, financial records, transparent financial practices with users, positive WPC–user relationships, and enforced rules at the water point.
2. WPCs with moderate effectiveness: Helema and Malekuwa. They demonstrated: proactive approaches to management, intermittent tariff collection, moderate-to-low levels of savings relative to number of users, rapid repairs, limited financial records, mixed approaches to transparent financial practices with users, mixed WPC–user relationships, and enforced rules at the water point.
3. WPCs with low effectiveness: Chilaulo and Galufu. They demonstrated: no evidence of proactive approaches to management, had no or low savings relative to the number of users, were slower in completing repairs, did not keep financial records, were not transparent in financial practices with users, and had poor WPC–user relationships, and enforced rules at the water point. Regarding rules, findings were inconclusive with Galufu on this point. In addition, rule enforcement was less relevant considering the poor yield and low usage of the water point.

Before discussing the categories of WPCs in more detail, I briefly clarify the savings figures shown in Table 16. A WPC's ability to raise and manage funds determines if maintenance can be completed in a timely manner (Foster, 2013; Kativhu et al., 2017; Behnke et al., 2017; MoAIWD, 2015b)[87]. As I discussed in Chapter 6, only Nkhumba and Nanchopwa had enough savings to purchase an Afridev basic starter pack of spares at 12,000MWK.[88] The equivalent months of savings and spares shown in Table 16 also indicate the state of savings based on the number of users. Based on this, the WPC savings status from highest to lowest was Nkhumba, Nanchopwa, Malekuwa, Herema, Chilaulo, and Galufu. With less than three months of savings in Helema, one month in Chilaulo and no savings in Galufu, the state of savings and spare parts stock in these locations was tenuous. This meant that in the event of a breakdown or a need for urgent repairs they would likely need to mobilise additional payments for repairs.

The savings status of each WPC was indicative of WPC performance in other domains. The order of savings status described above (i.e. from strong to weak, Nkhumba, Nanchopwa, Malekuwa, Herema, Chilaulo and Galufu), approximated my assessment of the relative effectiveness of the WPCs more generally. Galufu was difficult to compare to other WPCs because of their exceptional circumstances due to the failed water point.

In Sections 8.2, 8.3 and 8.4, I summarise the effectiveness and motivations of Nkhumba and Nanchopwa, Chilaulo and Galufu, and Helema and Malekuwa. I also summarise each WPC characteristic motivation by taking a composite of both members' summary motivations from interviews (refer to Table 14 in Section 5.7.2). The WPC composite (i.e. summary) motivation is the midpoint between the two members' motivations. For example, Hendreson and Olivia in Helema had moderate autonomous and low autonomous motivations respectively. Hence, I summarise the Helema WPC motivations as low-to-moderate autonomous.[89] I recognise the summary generalisations for all WPC members in each village are based on the motivations of

[87] As described in Chapter 6, access to adequate savings is also an important aspect of the motivational climate. It supports the ability of WPCs to respond to maintenance needs and in some cases, improve RWS services.
[88] The lifecycle costs to replace parts is estimated at MWK 979,000 over 15 years (2013 prices) (MoAIWD, 2015b).
[89] Chilaulo was complicated. Grace in Chilaulo had low controlled motivations, while Esther had low controlled motivations based on the interview. Their midpoint was the midpoint between autonomous and controlled.

two members only, and do not consider the diverse motivations of other committee members. Nonetheless, for simplicity I use the collective language "Helema WPC motivations" or similar, for each WPC. In Figure 20 below, I have summarised the overall effectiveness[90] and the composite motivations of each WPC as a reference to the discussion of WPC effectiveness and motivations which follow.

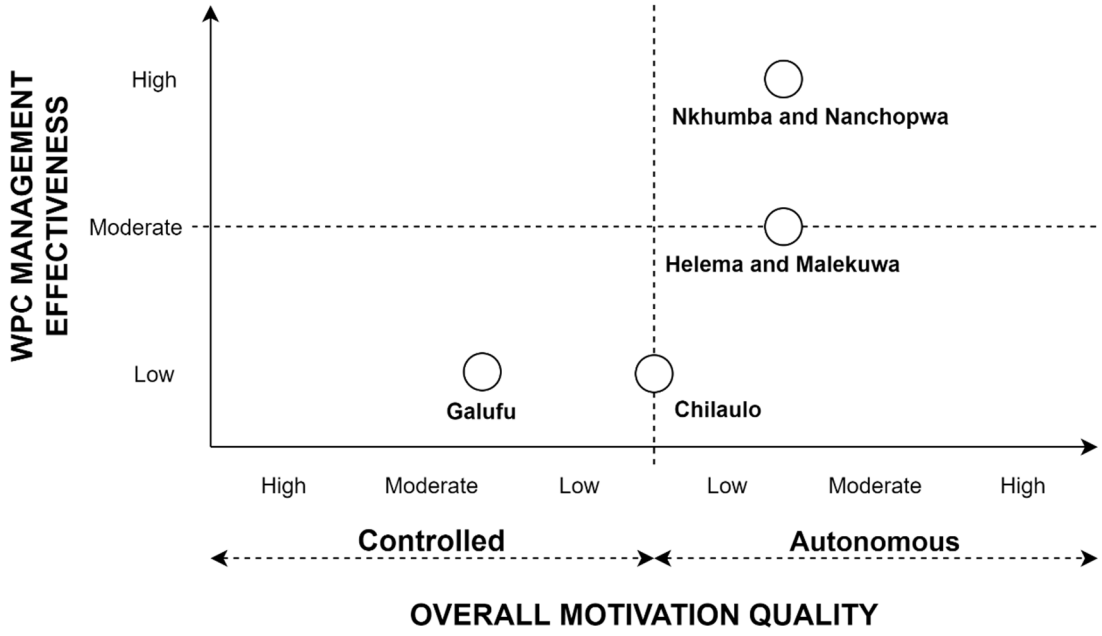


Figure 20: Summary of WPC motivations and effectiveness

8.2 High effectiveness and low-to-moderate autonomous motivations: Nkhumba and Nanchopwa

As outlined in Table 16, both Nkhumba and Nanchopwa WPCs were comparatively strong in terms of their management effectiveness. They had the highest savings per user compared to other committees, had transparent practices, positive relationships with users, were able to make rapid repairs, and had been proactive and upgraded their water points using WPC savings. In the case of Nanchopwa, upgrades included a soakaway (i.e. drainage) pit, while the Nkhumba WPC constructed a laundry wash area. These upgrades are both shown below in Figure 21. In addition, feedback from all users

[90] To clarify, effectiveness categorisation shown above and in Figure 1 was determined via a composite assessment based on the WPC's effectiveness across all performance-related items shown in Table 16. It was not determined algorithmically.

in Nanchopwa and Nkhumba was positive. They expressed confidence in the management capabilities of the WPCs. For example:

> *Our committee operates properly. They collect monthly the contributions of 100 kwacha, an indication of commitment. In addition, they publicly provide the financial report. So we know that the committee is operating honestly. – User, Nkhumba.*

> *The borehole is being maintained well and there is no problem … after collecting the contributions [monthly] they gather the community to report the amount collected … There are conflicts because of misunderstandings, or people competing in the queue to be first. The committee comes to resolve the conflict so that everyone fetches water. – User, Nanchopwa.*

Based on findings in Chapter 5, Nkhumba and Nanchopwa WPCs both experienced low-to-moderate autonomous motivations. Further, members all had high levels of identified motivations based on the interviews. The presence and strength of members' autonomous motivations meant the WPCs persisted in the face of adversity. Effectiveness in the form of persistence is captured as "persistence of management behaviour" in Table 16. Paraphrasing, WPC members expressed these experiences either explicitly or implicitly as "there are challenges, but I continue in the role because it is important to others and me".

Adversity included some conflict with users. Despite positive user reports of the WPC–user relationship, members still reported some conflict, albeit less than WPC–user conflict in other locations. As discussed in Chapter 6, challenges with users manifested in users ignoring rules, and users being unwilling or unable to pay the monthly tariff. When Francis was asked what kept him participating in this context, his reply reflected his high level of identified motivation, specifically valuing the outcomes of the water point:

> *We have to persevere some of these things. The benefits of having a functional water point within the village outweighs all these insults that we sometimes get. – Francis, member, Nanchopwa.*

Similarly, Wisdom, the WPC chairperson in Nkhumba described his persistence in mobilising contributions to ensure the borehole remains operational:

> *It's good to note that leadership is a gift from God. The other men are also active too but most are afraid when it comes to decision-making and reserved. For example, at times whereby we are mobilising the people to raise some resources for the borehole, some of them will choose not to abide, and it takes a lot to make such people to contribute. So most of the men don't want to become enemies with other people over the borehole, and will take a step back in such times – but I don't. So I look to be active because I am not afraid of handling conflicts.*

Members in Nkhumba also linked tariff collection and transparency practices with their identified motivations. As I discussed in Chapter 6, the committee dealt with non-payment in a non-conflictual manner, was volitional in collecting a monthly tariff, and saw value in being transparent with users. When asked why the WPC was still functional while other village committees from the CADECOM partnership had failed, Palesa, the treasurer in Nkhumba explained:

> *We are very transparent in our activities, which gains the public trust in our works, which in turn is vital to the survival of the water point committee. The lack of cooperation between committee members and the general public was the main cause of the death of most of the other committees. There was poor organisation of these committees. It's all about transparency because without being transparent things cannot go well. We human beings have different hearts … So it is important that people should be understanding and must be transparent when doing things. So with all this it is easy for a committee to keep on going.*

Palesa's response and rationale for transparency were internalised and indicative of her identified motivations. There was no indication she felt controlled in response to being transparent with users, or in the relationship with users more generally. This suggested her practice of transparency was based in autonomous motivations.

The Nkhumba WPC was the most effective of the six WPCs. In addition to transparency practices, they had been creative in raising additional funds. For example, they had coordinated with brick makers to co-locate next to the water point to access water

alongside domestic users. The WPC charged extra for the brick makers and this increased the committee's savings. Mary, a WPC member explained:

> *For instance, those who participated in the project from the beginning of the water point, they are charged K200 per 1000 bricks. And those [brick makers] who are outside this community, we charge them K300 per 1000 brick s… that is how we make a lot of money because some people pay up to K10,000 or K5,000 at once. So our K100 monthly contributions are just supplements.*

As a result of this initiative in addition to a consistent tariff collection, the Nkhumba WPC had equivalent to ten months' savings, more than any other WPC.

The Nkhumba WPC were also proactive in upgrades to the water point. They had used these savings to expand the village water service. As discussed in the previous chapter, users were washing clothes close to the water point, despite hygiene rules prohibiting this. Rather than push back on the issue with users, the WPC recognised it as an important need, and organised for the laundry area to be built, as shown in Figure 21. Members described these activities as their own initiative. Palesa, the secretary, explained:

> *When they installed the borehole for us there was no sink, and this made it difficult for people to wash [laundry]. And others, without understanding, wanted to wash at the water point, which was very unhygienic. So we just decided to take some money from our savings and construct the sink.*

In Nanchopwa, Annie (secretary) and to a lesser degree Francis (member) had also internalised the value of the borehole. The borehole had a significant and positive impact on water collection times for women. Annie explained that when water was particularly scarce, as I wrote in 5.2.1, she and other women would leave at 3 am to collect water and return as late as 8 am. This was an important rationale for her participation in WPC activities, such as tariff collection, rule enforcement, coordination with users, completing repairs and transparency with users. There was no suggestion of dissonance between her motivations for wanting an improved water source and her motivations regarding specific tasks associated with the WPC role. Both appeared to be internalised, as seen in her response below:

The coordination is there because we know that if the borehole breaks down, it means there won't be water supply. The committee is there for the benefit of the community. So we need to contribute some money so that [the committee] can buy the spare parts for maintenance and … quickly repair [the borehole] if it has broken-down … So the people are very committed.

The nature of members' autonomous motivations in Nanchopwa WPC were demonstrated in Francis's (member) description of persistence in navigating technical challenges. The Nanchopwa pump stand had rusted due to salty water. The committee removed the pump part, transported it, and repaired it multiple times. When this failed, the committee approached and petitioned Oxfam staff to replace the pump stand (see Figure 21 below). Oxfam staff replaced it, but with a second-hand unit. At the time of interviews, it had remained functional. The WPC's persistence was significant, and in part contingent on internalised motivations. The nature of Francis's motivations were evident when asked what advice he would give to other WPCs. He replied:

They should be strong and never give up. I would also tell them that this is a non-salaried job, so their motivation should not be anything other than their love for the community.

The Nanchopwa WPC had also been proactive in their management activities. They had used their own savings to improve hygiene at the water point through the construction of a soakaway (i.e. drain) at the water point.[91]

What makes me feel happier about the project is that when the contractor drilled the borehole, their service ended right there. But we managed to construct a drain and soakaway pit filled with rocks. This is our own initiative and an extension to the original plan. – Francis, member, Nanchopwa.

The language used by Palesa ("we just decided") and Francis ("our own initiative") when describing upgrades to the water point indicated their sense of volition rather than pressure. Both also linked their initiative and the WPCs' financial investment with their

[91] Soakaway pits are included in MoAIWD guidelines but as the WPC framed it, it was viewed as their own initiative and it was done using the WPCs own funds.

concern for hygiene (i.e. identified motivations). Hence, these examples demonstrated more internalised autonomous motivations driving creative approaches. As I discuss later, such examples of proactive approaches were limited. No other WPC had invested their savings to improve the service beyond completing necessary repairs.

Figure 21: Laundry area in Nkhumba and evidence of continued rusting in Nanchopwa due to saline ground water

Effectiveness and controlled motivations: Nkhumba and Nanchopwa

It is important to remind the reader that Nkhumba and Nanchopwa members did also experience controlled motivations. For example, when asked why she continued in her role in the face of insults, Annie in Nanchopwa cited the importance of demonstrating her commitment:

> *Those that respect me outnumber those that disrespect me. Therefore, it's my personal choice to continue [in the role] in order to repay those that respect me.*

In Nkhumba, Palesa too was concerned with other community members' opinions. In response to being elected she explained, "I was eager to show them that they had made a right choice choosing me". Wisdom the chairperson in Nkhumba was more concerned with CADECOM's impression:

> *What would they think if they saw the members of the community not take care of this borehole? It's the responsibility of every community member to take care of this borehole and that's why I am in the committee.*

These controlled motivations in Nkhumba and Nanchopwa were not related to specific tasks performed by members, and appeared more general ubiquitous drivers. For example, Annie's response in persisting in her role was because of controlled motives, namely, demonstrating her commitment to others. While for Palesa and Wisdom their motivations were orientated towards meeting others' expectations, rather than linking their participation more directly to water point outcomes. Wisdom's response above implied a desire to avoid disappointing donors and risking future donor support. Palesa's motivations indicated orientation towards meeting the expectations of others in the community who voted for her. Although such motivations were directed at the expectations of an 'other', these more externalised motivations still drove members' participation in addition to the aforementioned more internalised identified motivations.

Previous SDT research is clear in its findings that controlled motivations can drive behaviour and effort. However, they can also come at the cost of effectiveness, creativity, persistence of behaviour and feelings of pressure or inner conflict (i.e. ill-being) (Deci et al., 1999; Deci & Ryan, 1985; Ng et al., 2012; Reeve, 2009). There was no evidence in Nkhumba and Nanchopwa that linked controlled motivations to negative RWS management practices. For example, controlled motivations did not appear to diminish the performance of specific tasks.

In contrast, a BPN-thwarting climate and subsequent controlled motivations did appear to shape WPC performance in Chilaulo and Galufu. I discuss their effectiveness and revisit their motivations in the following section.

8.3 Low effectiveness and low-to-moderate controlled motivations: Chilaulo and Galufu

Management effectiveness in both Chilaulo and Galufu was comparatively low compared to other WPCs. In addition, WPCs in Chilaulo and Galufu managed water points with low yields. As has been discussed, the yield in Galufu was essentially non-functional. Users in Chilaulo stated the yield was poor in the dry season, resulting in

long queues and waiting for up to three hours for water. The water point at Chilaulo is shown in Figure 11 below and the Galufu water point was shown earlier in Figure 6. The combination of poor infrastructure and low management effectiveness in these locations risked the sustainability of water supply. In the following section I discuss management practices in these two WPCs.

Figure 22: Water point at Chilaulo, a laundry wash station is in the foreground

As outlined in Table 16, Chilaulo and Galufu had the lowest savings and stock of spare parts based on number of households when compared to other WPCs. Members noted contributions were collected when needed rather than proactively. The Chilaulo WPC were able to raise funds and engage the area mechanic to assist in repairs, with the most recent downtime of approximately one week. Both WPC members and users reported the members helped maintain hygiene at the water point by enforcing the rules (e.g. no washing of diapers) and regular cleaning around the borehole. However, in the case of Galufu maintenance of hygiene was largely irrelevant considering the borehole was essentially non-functional. Low transparency and poor performance in both locations meant relationships with users were either neutral or poor, as the user comments below illustrate:

> *They raise a lot of money every month but they will never call for a meeting to tell you how much money has been collected and was kept in the bank. – User, Chilaulo.*

They [WPC] are not reliable … because we are not told how much money we have contributed, they don't tell us how much money it cost the spare part they have bought and on how much money is left. – User, Galufu.

Chilaulo members' motivations for participation were often unclear in the interviews. I posit this was because members' motivations were low in quantity and controlled in quality. Members provided few details on the activities they did as part of their role. When activities were discussed, the rationale (i.e. the 'why?') for the activities was often not clear, in contrast to Nkhumba and Nanchopwa. The absence of a clear rationale for participation was evident in the absence of creative practices in Chilaulo. It was also apparent when I asked Esther (treasurer) and Grace (member) why they continued in the committee:

Esther: The fact that I have access to clean water but there is no other thing, no elevations in social stature, no respect and I have received nothing.

Elton (research assistant): Grace?

Grace: There is nothing interesting about being a committee member …

Language such as "no other thing" and "nothing interesting" are indicative of both low quantity[92] of motivations and amotivation experiences. An examination of Grace's and Esther's motivation strengths for each motivation type according to the SRQ (Chapter 5), showed their motivations were lower in strength than all other members interviewed. Below in Box 8, I discuss a second borehole in Chilaulo that I visited as part of field work. It provided an unfortunate example in which poor management and apparent amotivation had compromised the water supply for users.

[92] Motivation quantity in SDT is considered to be the sum of all motivations. Numerically it is represented by adding the SRQ scores for each motivation (excluding amotivation).

Box 8: An unmanaged borehole in Chilaulo

The impacts of low quality and quantity motivation were observed at a second borehole in Chilaulo. This borehole was managed by a second Chilaulo WPC not interviewed for this research. The pump and surrounds were in poor condition, as shown in Figure 23. The village head and users reported the WPC was not active. The Chilaulo village head explained, "they [WPC members] were drunkards and several times the borehole broke down and they were nowhere to be seen, they were out drinking". It was an unfortunate, yet typical example of how CBM can fail with poor management. My diary notes from the site highlighted the poor state of maintenance and impacts on infrastructure:

Figure 23: Second borehole in Chilaulo that had not been maintained

> *Sand had buried the pump stand and inhibited water collection. The pump was missing bolts to secure the housing. To remove the sand and allow access would have been minimal effort. Two hours work for one person. We heard from the area mechanic that one user [...] had contributed her own money to buy parts for the pump. Same community, different committee. On one hand, I was grateful the area mechanic was there to essentially reprimand the WPC and tell them what they could do to fix it. However, I wouldn't hold out hope. – Diary notes.*

In terms of motivation quality, in Chapter 5, I concluded members in Chilaulo had composite motivations between neutral (i.e. neither autonomous nor controlled) and low controlled motivations based on their interview responses. However, members did

experience more autonomous, identified motivations. Grace and Esther in Chilaulo explained that access to water for themselves (see quote above) and others also drove their participation. For example, Grace noted, "the borehole assists everyone in this community, so that's what motivates us into being committee members". It is likely these autonomous motivations partly drove members' continuance in the role. However, the links between the more autonomous motivations and the responsibilities of the role remained unclear.

Chilaulo members' controlled motivations also drove continuance of participation in the committee. Controlled motivations included an attraction to the authority associated with the role. When asked why they continued in the role despite challenges with users, Esther (member) replied, "I am a leader, and if people chose me then they knew that I am tolerant and capable of performing". While Grace noted "I face my challenges boldly. I was entrusted with a position and so I shall serve". Unlike the Nkhumba and Nanchopwa cases, controlled drivers appeared to lead to behaviour that hindered effectiveness. As alluded to earlier, the users I spoke to were unenthusiastic about the WPC leadership approach, citing an absence of transparency and poor management. This would appear to be a reasonable assessment, based on the low savings, and the absence of spare parts and financial records. A user in Chilaulo noted:

> *[The WPC] become more visible when they want to get money contributions from people at the water point. That is the time I get reminded that we have a water point committee … I don't really think people out there have trust in this committee. If there are others still in support of this committee, then they must be very few indeed. I am saying so because many people are complaining about poor management.*

Despite the low effectiveness of the WPC, Grace was committed to remaining in the role long-term, as shown in the following exchange with my research assistant, Elton Chavura:

> *Elton: So for how long is your tenure? How many years will be you be on the committee or is it up to the time when Jesus comes again?*
>
> *Grace: [laughs] Until we die or Jesus comes again.*
>
> *Elton: So when is Jesus coming?*

Grace: [laughs] We don't even know.

Elton: [laughs] So what's your prayer; that Jesus comes sooner or later?

Esther: [laughs] He can come later.

However, it appeared this was based on experiencing feelings of pride and being attached to the status associated with the position.[93]

As per findings in Chapter 5, members in Galufu also had low-to-moderate controlled motivations, and, compared to other WPCs, low effectiveness. As noted earlier, their case was unique and "low effectiveness" in relation to management is perhaps an appropriate description, as the borehole produced almost no water. One user I spoke to at the borehole noted:

There is no water here. We left the kid here to wait for water [for the pump to recharge] and we went for harvesting and carried the maize in four trips – but he is still here waiting. So can we say the water is reliable?

The Galufu example provided an unfortunate example of infrastructure performance shaping motivations rather than motivations and performance shaping the state of infrastructure (as per the Box 8 example). It was not possible to draw conclusions about the relationship between their controlled motivations and low effectiveness. The poor infrastructure had introduced some complications in their motivational climate.

At the time of interviews, Galufu had no spare parts and there was no indication that the WPC provided evidence of savings or expenditure to users. As discussed earlier, members reported collecting tariffs when repairs were needed which is not surprising considering the almost non-existent yield. However, the WPC chair, Charles, was reluctant to admit no records were kept. Feedback from users in Galufu was either neutral or negative. One user noted the chief and the WPC members were "the owners" of the water point and questioned their transparency around finances. However, the village head said such users were "arrogant or ill-informed people" and members were "not benefiting or stealing".

[93] I deliberately use the term 'position' to reflect the status or pride related to the position rather than the responsibilities of the WPC.

Although controlled motivations were more salient in Galufu, members did describe autonomous motivations as salient to their continued participation. Trish (member) noted she continued to participate for the good of the community, though she did not describe what committee activities this participation involved. As discussed in Chapter 5, Charles (chair) noted one of the reasons he continued to maintain the borehole despite poor yield was because:

> *The elderly who cannot walk to the next borehole of another village, and also those who do not need much water, are served by this borehole. Therefore … we are still useful to the community as we look after that.*

The Galufu WPC behaviour was variable regarding proactive approaches. The committee collected tariffs and completed repairs in response to breakdowns rather than proactively. This was not surprising considering the poor yield and the small number of users. The amount of perseverance shown by Charles and Trish in sourcing external assistance with the borehole was mixed. The WPC noted they had engaged the area mechanic to confirm that the low yield was due to a poorly drilled borehole rather than a mechanical issue. They also noted they had on one occasion approached their district councillor to escalate the issue. Charles and Trish had also approached development partners working in the village for assistance without success. However, beyond these efforts, it did not appear the WPC had proactively sought further assistance, and compared to the Nkhumba WPC, their approach was somewhat passive, with no indication they had invested funds to enhance the water point.

The absence of proactive approaches was not surprising. Trish's and Charles's motivations had appeared to wane to the point where both had experiences of amotivation. The WPC chair, Charles, had noted he had considered leaving the role. I was not able to determine how disengagement had reflected on his committee activities at the time of interviews. However, difficult circumstances and amotivation had driven other members to end their participation in the WPC:

> *Ian: And how often do you meet?*
>
> *Trish (member): We meet, especially the two of us.*
>
> *Elton (research assistant): The two of you only?*

Trish: We also invite the other three [all laughing].

…

Trish: If I decide to leave my position on the committee today, my colleague here will be left alone. If he also decides to quit, then eventually the water point will have no committee members

In Galufu, Trish was also ensconced in the position, seemingly for reasons of status rather than outcomes of improved water supply. She noted, "I acquired special skills in maintaining the borehole, a thing which others are unable to do in this community". Trish too appeared determined to stay on the WPC: "when we die one day; other people should take over … For as long as I am alive, I will still serve on the WPC". Trish's long-term commitment to the position was seemingly unrelated to the effectiveness of the committee and their roles.[94] This commitment was stark considering she had essentially no water to manage.

Based on the state of infrastructure, I was surprised Galufu still had a WPC. It seemed a combination of both autonomous (e.g. service to the elderly) and controlled (e.g. status of the role) motivations had continued to drive Galufu members' participation despite the poor state of infrastructure. Although disengagement (amotivation) was becoming increasingly prevalent, it was not clear how this affected management activities. Regardless, Charles's and Trish's amotivation was likely to become more established in the absence of any change in the functionality of the water point.

In the following section I outline the effectiveness and motivations of the Helema and Malekuwa WPCs.

8.4 Moderate effectiveness and low-to-moderate autonomous motivations

[94] Although less extreme than these examples, members in other locations appeared entrenched in the role based on the position rather than performance or associated improvements in water supply.

As shown in Table 16, Helema and Malekuwa had mixed findings regarding their management effectiveness. Both WPCs reported completing regular preventative maintenance. However, the committees were not specific on frequency of maintenance, and nor was it clear if the area mechanic or the WPC completed the maintenance. Helema had yet to face a breakdown, and in Malekuwa the users and the WPC described completing repairs in under 24 hours. In terms of creative approaches, in Malekuwa the WPC had used posters to notify users of tariff collection days, while both the Helema and Malekuwa WPCs had engaged the area mechanic (with mixed success) to provide training for the WPC members. The current WPCs in both locations had new members who had not received the original training. Although I considered the WPCs' actions as 'proactive', unlike Nkhumba and Nanchopwa, the Helema and Malekuwa WPCs had not invested the committee savings to expand the water service, and hence their level of proactive behaviour was lower.

Findings on tariff collection were also variable compared to other villages – their performance was stronger than Chilaulo and Galufu, but weaker than Nkhumba and Nanchopwa. Members in both locations provided receipts for purchases, but only Helema WPC produced a record of contributions (see Figure 24 below). In the three to four months preceding the interview, tariff collection in Helema and Malekuwa was reported by members and users as intermittent. The Malekuwa members initially said tariff collection was monthly, before Paul (chair) later noted, "[we] may collect contributions this month, and then the following month give [users] a break". Members' irregular tariff collection was reflected in the low savings and stock of spare parts. As shown in Table 16, both WPCs had less substantial savings than Nkhumba and Nanchopwa, but more than Chilaulo and Galufu.

Mixed performance was also evident in discrepancies between members' self-reports of their effectiveness, reports from users, and my observations during field visits and interviews. For example, although the Malekuwa WPC reported dismantling the borehole monthly, they were unable to demonstrate this during my field visit. Further query suggested it was the area mechanic who often completed maintenance. In both locations, the respective village heads expressed confidence in the capacity and

transparency of the WPC members. User reports from Helema and Malekuwa were mixed. For example, Hendreson (member, Helema) noted the committee showed users parts and kept receipts in case users wanted to view them. One user in Helema noted, “they don't tell us the amount they have collected” whereas the second interviewed user said the committee provided the amount collected and documentation. There were similar differences in Malekuwa. One user agreed with the WPC reports and commented they were honest and transparent while another noted:

> *We would love to see them tell us that we have so much money left in the bank … not just telling people to contribute 200 kwachas for borehole maintenance, but being unwilling to say clearly how this money is spent.*

It was not practical to resolve what transpired in these and other examples, and I did not attempt to do so. The variable relationship itself was a revealing indication of the motivational climate. However, based on mixed reports from users, low-to-moderate savings and spare parts stock, and an absence of creative approaches, I concluded the management effectiveness of the Helema and Malekuwa WPCs as mixed.

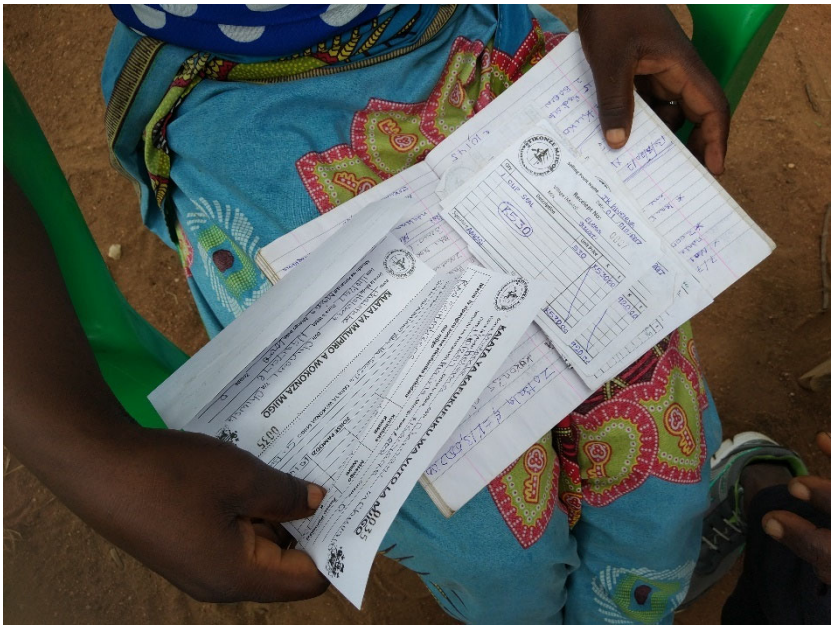


Figure 24: Spare parts receipts and payment records in Helema

Members’ composite motivations were low-to-moderate autonomous. The variable findings in Helema and Malekuwa made it difficult to draw links between member motivations and effectiveness. Returning to the motivation findings in Chapter 5, like

other locations, members in Helema and Malekuwa valued the water point for the service it provided to others and themselves as users. Members linked these motivations to management activities or aims (i.e. sustained water). For example:

> *We the women really bore the brunt of having to travel long distances to draw the water. Now we can just walk a short distance to draw that water and to us women it means a lot ... the past experience of water problems motivates everyone in the community to participate on the WPC to ensure that the borehole is sustained, so that we do not experience the previous situation. – Olivia, member, Helema*

> *Firstly, people know that water is life. If the borehole stops functioning, it will bring challenges to the users because they will have to access water from the old water source. Therefore, we want to repair and maintain it the same day if it breaks down. – Cynthia, secretary, Malekuwa*

Although members' composite motivations were the same as those in Nkhumba and Nanchopwa, the motivations for completing tasks in Helema and Malekuwa were seemingly not as internalised. In the case of Nkhumba and Nanchopwa, members had endorsed and internalised the motivations for completing tasks that were performed with mixed effectiveness in Helema and Malekuwa (e.g. preventative maintenance, regular tariff collection, transparency practices). The links between a sustained water point and the completion of committee tasks were clear in Nkhumba and Nanchopwa. However in Helema and Malekuwa, the connection between valuing a sustained water supply and completing WPC tasks was either not immediately clear to members (e.g. the case of preventative maintenance), or other barriers emerged which hindered their completion (e.g. collecting regular tariffs and potential conflict with users). The result was mixed effectiveness findings, as shown in Table 16. I did not discuss with the Helema and Malekuwa WPC why they completed tasks like tariff collection intermittently. Hence, I provide four potential explanations why this may have been the case, based on the village contexts, findings about motivations from Chapter 5, and based on previous SDT research.

First, as discussed in Chapter 2, a BPN-supportive motivational climate is conducive to internalisation of behaviour. It is possible the motivational climate in Helema and Nanchopwa did not support the internalisation of task related behaviour to the same degree as in Nkhumba and Nanchopwa. For example, the current Helema WPC had replaced the former WPC who were removed after suspicion of corruption. In Malekuwa, the animator noted "three [original] members led by the chairperson dropped because they had expectations of some benefits like salary". This likely created a difficult environment for subsequent WPC members in terms of compromised user trust and WPC–user relationships. It also had implications for the competence of the new members. Only one of the four members interviewed in Helema and Malekuwa was trained. By contrast, in Nkhumba and Nanchopwa, all members interviewed were trained, while Nkhumba also had an area mechanic in the village to assist when needed. The content of CBM training reinforces the rationale for various tasks[95] and provides technical knowledge. The absence of training meant members may have had some knowledge gaps, as noted by Hendreson:

> *We are lacking in our capacity despite the knowledge and the skill that we already possess. So our preference is that we get to be trained by the right organisations that specialised in these approaches, so that we are able to be self-reliant. – Hendreson, member, Helema.*

The second possible explanation for intermittent completion of tasks may have been because pressures associated with controlled motivations were more significant for Helema and Malekuwa members. Feelings of "should" in interview responses characterised the limited internalisation of motivations for tariff collection and preventative maintenance in both locations. Often when members discussed their roles and tasks, they focused on compliance – meeting others' expectations. This indicated members' moderate levels of avoidance introjection motivations (i.e. avoiding shame and disappointing others) and external motivations (i.e. drivers associated with social approval or disapproval) described in Chapter 5. For example:

[95] CBM training provides a longer-term picture of borehole sustainability. For example, it includes calculations for monthly tariffs based on the life cycle costs for a borehole.

So when I joined the committee, the members were impressed with my behaviour and gave me the chairmanship to lead ... the chief nominating us means that he trusted us and therefore, I do not want to leave and disappoint him. – Paul, Malekuwa chair.

We are volunteers, but since we have the trust of the people and we do the work to the satisfaction of everyone in the community, we keep on moving. And the committee that was there before us failed and was disgraced and dissolved. We don't want the same fate to befall us. – Olivia, Helema, member.

I return to Perls (1973, cited in Deci & Ryan, 2000, p. 236) and his description of only moderately internalised motivations as "swallowing regulations whole without digesting them". Although controlled motivations may have been experienced more intently in Helema and Malekuwa, a review of individual motivation types from Chapter 5 showed Nkhumba and Nanchopwa members experienced similar levels of controlled motivations.

Third, it is possible that weaker identified motivations in Helema and Malekuwa meant tasks were less internalised. Based on interviews from Chapter 5, Helema and Malekuwa members' identified motivations were not as strong as those in Nkhumba and Nanchopwa. In Nkhumba and Nanchopwa, all four members had high identified motivations. In Helema and Malekuwa, on the other hand, two members had high, and two had moderate, identified motivations. Hence, it is possible the lower levels of identified motivations in Helema and Malekuwa, coupled with the significance of their controlled motivations, meant members did not internalise their motivation for collecting tariffs and preventative maintenance to the same degree that members did in Nkhumba and Nanchopwa. Although this explanation is plausible based on interview findings, I acknowledge that SRQ findings ran contrary to this conclusion. Based on the SRQs, Nkhumba and Nanchopwa had slightly lower identified motivations than Helema and Malekuwa.

The fourth and final explanation for variable completion of WPC tasks is that, as alluded to in the two previous points, Helema and Malekuwa members' composite low-to-

moderate autonomous motivations[96] were indicative of the range of autonomous *and* controlled motivations they experienced. Previous SDT research has shown that autonomous motivations are more likely to result in better performance, while controlled motivations result in poorer performance. Hence, it is somewhat expected that mixed motivations are likely to result in mixed performance. I do not claim any of these four possibilities as definitive. The differing contexts in each location, different members, variable motivations and mixed performance outcomes make this milieu complex. Hence, I offer these four options as possible explanations only. Further in-depth questioning or large samples for SDT questionnaires would be needed to examine mixed motivations and performance in more detail to get to clearer answers. In the following section, I focus specifically on identified motivation types and their relationship to effectiveness across villages

8.5 Reflections on identified motivations and the assumptions of participatory approaches

In Chapter 1 I outlined how the participation and decentralisation movement in the 1970s changed development approaches globally – they shifted responsibility from the state to community actors. CBM was part of this movement. It required communities to maintain and operate RWS. In part, the CBM approach is predicated on a community's interest in a continuing water supply as the means to motivate responsibility for service management (Carter et al., 1999; Lockwood et al., 2003; Moriarty et al., 2013). These motivations are consistent with SDT's definition of identified motivation, where a behaviour is endorsed because of alignment with values and personal goals. From this perspective, in the case studies the CBM approach had some success in engendering a sense of responsibility. All WPC members recognised the value of the water points for themselves and others in their communities. Having an operational water point was relevant and valued by members, considering the historical challenges with water access. Identified motivations were the most significant motivations for members, based on both SRQ findings and interviews (refer to Chapter 5). Broadly, members'

[96] The composite motivation of low-to-moderate autonomous (i.e. relatively close) to the boundary between autonomous and controlled was indicative of mixed autonomous and controlled motivations.

identified motivations drove their participation in the WPC and to a degree, the performance of the management tasks associated with the role.

In all locations, members and village leaders reported feeling a sense of responsibility towards RWS. A similar sense of responsibility was not present for other programs which CADECOM, or other INGOs had introduced. There were multiple examples of failed projects in Phalombe and Blantyre villages which did not elicit the same feelings of care, despite these projects also providing some tangible well-being benefits (e.g. agriculture programs, literacy).[97] Even in Galufu and Chilaulo, where motivations were controlled, the WPC still existed at least in form. By comparison other committees had, as members described, "died a natural death". In this sense, water supply was unique and a critical issue for all communities. A feeling of autonomy was inherent to RWS projects, which was not always the case with other projects. The latter were often described as not a priority, irrelevant, or imposed; RWS was not associated with such descriptors.

Although identified (i.e. autonomous) motivations were significant in supporting participation and relevant WPC tasks, other autonomous and controlled motivations were also at play for WPC members. A functional borehole and subsequent management efforts were also motivated by a desire to meet the expectations of others, to affirm feelings of pride, or to avoid shame. For example, as noted earlier, Wisdom, (chair, Nkhumba) rhetorically asked, "what would [CADECOM] think if they saw the members of the community not take care of this borehole?", suggesting that in part, fear of donor repercussions drove his management behaviour. Similarly, when Paul in Malekuwa was asked why he persisted in the face of insults from users, he explained, "we remain committed because if the borehole is to stop functioning, we are the ones to be blamed". Although lower quality motivations, these more controlled motives still appeared to drive management practices.

[97] Examples of failed projects ranged from bakery enterprises to a tree planting program. Reasons for failure included feelings projects were forced on people, irrelevant or not accompanied by enough support or training.

As referenced in earlier sections of this chapter, members' rationale for some WPC tasks (e.g. tariff collection, preventative maintenance) was not immediately clear in several WPC responses. This indicates that even if members valued the borehole, this did not necessarily manifest in motivation regarding certain tasks. For example, practices of collecting a regular tariff and transparency with users was either mixed or absent in four of the six WPCs. Members were cognisant of external expectations[98] regarding management tasks (i.e. performance standards as per their training), while also experiencing variable feelings of control towards them. Members' responses regarding such activities were associated with feelings of 'should'. They focused on the 'good' job they did but often failed to provide a rationale when describing their activities. Based on members' and users' reports, this often translated to mixed effectiveness regarding preventative maintenance, collecting a regular tariff, and transparency practices. These tasks had not been fully internalised.

The limited autonomous motivations appeared to limit creative approaches. As noted earlier, few members discussed activities which went above and beyond what was described in MoAIWD (2015b) guidelines. There may have also been cultural factors which inhibited creative approaches and encouraged members' attitudes of compliance (i.e. 'shoulds'). Booth and colleagues (2006) argued large power distances and acceptance of hierarchy and subordination stifled innovation and rationalised Malawians' dishonesty with authority figures.[99] Such cultural factors were not a focus of this research, though I suspect they were reflected in rationales focused on meeting others' expectations.

8.6 Summary of effectiveness across all WPCs

In this chapter I identified three groups of villages with strong, moderate and low effectiveness in terms of management practices. These categories were based on WPCs' approaches to tariff collection, savings and spare parts stock, transparency

[98] At times members projected this expectation onto me as the interviewer. That is, participants assumed I expected them to behave in certain ways regarding RWS management activities.
[99] What Booth is pointing to is aspects of Malawi culture more broadly which may be experienced as controlling. Equally, there may be BPN-supportive aspects of Malawi culture that supported more autonomous motivations.

practices, proactive approaches, maintenance and repairs, rule enforcement, and their relationship with users. I then discussed how motivations shaped members' performances.

Nkhumba and Nanchopwa WPCs had relatively strong effectiveness and low-to-moderate autonomous motivations. They valued a continued water supply, and saw their role as integral to sustaining the water point functionality. Hence, members had endorsed their participation in the WPC, and these motivations translated to specific tasks related to water point management. Chilaulo and Galufu members had low effectiveness and low-to-moderate controlled motivations. Although they also valued a continued water supply, their participation was also contingent on a sense of status associated with their positions. Their motivations were accompanied by relatively poor performance in terms of the categories mentioned above, and they had a low internalisation of their motivations for performing tasks such as preventative maintenance, regular tariff collection and transparency practices. Their rationales for their participation were often not clear. Helema and Malekuwa also had low-to-moderate autonomous motivations, but mixed results in terms of effectiveness. They endorsed the value of the borehole and saw their participation as helping sustain the water point. However, their motivations for performing some tasks relevant to the role were mixed in terms of effectiveness and seemingly less internalised than the motivations of WPC members in Nkhumba and Nanchopwa.

Finally, I outlined the significance of identified motivations in driving participation in the WPC and associated tasks. As per the assumptions of the CBM model, members cared about a sustained water supply and this did motivate participation in the WPC and the performance of tasks required to manage the water point, as outlined in the CBM model. However, effectiveness was variable. Identified motivations to participate in the WPC more broadly, did not necessarily flow down to certain tasks. In addition, other autonomous and controlled motivations (e.g. status, concern with others' opinions) were also salient for members and hence drove participation and contributed to management effectiveness.

In the following chapter, I discuss implications for RWS management and research based on findings from Chapters 5 to 8.

Chapter 9 Implications

Sustaining RWS services has remained a persistent challenge worldwide. As I discussed in the introduction, RWS functionality in Malawi is estimated to be 79% (Banks & Furey, 2016), comparable to averages across Sub-Saharan Africa. Access to a sustainable, safe water supply is critical for health outcomes and improvements in economic and education opportunities at the household and national levels (Bartram & Cairncross, 2010; Hunter et al., 2010; Prüss-Üstün et al., 2008). RWS research to date has largely focused on technocratic approaches to sustainability, with a limited focus on the nuances of human behaviour and human motivations which are central to the ongoing management of RWS under a CBM approach. The result is an incomplete picture of the drivers of RWS sustainability.

With this in mind, this chapter discusses the implications of my findings for RWS research and CBM program design. I outline: why a nuanced understanding of motivations matters in sustaining RWS services, the explanatory power of SDT to determine motivational quality in the RWS context, and how motivations from within can be undermined or supported though design approaches. In doing so, I aim to extend existing understandings of motivations in CBM, and outline how the success of sustainability interventions is mediated by human experience (i.e. BPN satisfaction or frustration) and the subsequent motivation quality of those responsible for RWS management. In this research, my focus has been the application of SDT rather than testing and developing the theory itself.

The implications I discuss in Sections 9.1 and 9.2 of this chapter are primarily relevant to RWS researchers. In these two sections, I focus on the conceptual implications of the findings: how SDT provides a theoretical basis for determining motivation types and experiences; and how motivation quality can be used to predict management outcomes and critique approaches to CBM design. Section 9.3 is more relevant to RWS practitioners, those responsible for the delivery or design of RWS programs. In Section 9.3 I discuss the implications of findings relevant to the framing, and potential re-

design, of RWS programs with the aim of delivering a more sustainable RWS service. Some of the implications of research findings extend beyond Malawi. As I discussed at the start of Chapter 1, village-level management structures vary by country, within a country, and are often referred to by a variety of names. I continue to use the term WPC and WPC member to refer to the community actors responsible for management. Although I acknowledge terminology, form and function will differ across contexts. Finally, as I outlined the implications of my research findings for ABCD practice in Chapter 7, I do not repeat these here. Instead, I refer the reader to Section 7.8 where these were discussed.

9.1 SDT provides a theoretical basis to determine motivations in rural water supply

The findings in this doctoral research demonstrate that SDT is an appropriate framework with which to analyse and evaluate the quality of WPC members' motivation experiences. SDT has had limited application in the international development context, and this is the first study to apply the theory to RWS. In addition to being a novel approach, the application of SDT in the CBM context highlights two important implications for RWS sustainability. First, through the use of the theory, a range of motivation experiences and types were defined. These are summarised in Figure 25. These diverse motivations extend existing understanding of motivational drivers of WPCs. Second, these motivation experiences and types provide a means to predict and improve RWS management effectiveness. I expand on these implications below.

Members experience a wider range of motivation qualities than has previously been assumed

I found that WPC members in Malawi experienced a range of motivations to participate in the WPC. Members' motivation experiences and subsequent motivation types as defined by SDT are summarised in Figure 25. Motivation experiences were specific to the case study participants, though I argue they provide an illustrative starting point for identifying motivation experiences in other country and CBM contexts. Some of the members' motivation experiences were consistent with the findings of Das (2014) and

Marshall and Kaminsky (2016), who provide two of the few studies which have focused on motivation in the RWS literature. These studies also identified the salience of motives based on improved access to RWS (i.e. benefits of a user), self-esteem (i.e. pride), and connection to others (i.e. positive relationships and community service) (Das, 2014; Marshall & Kaminsky, 2016). Because of differences in the CBM project design and theoretical frameworks, these researchers also identified motives of financial compensation (Das, 2014), and safety (e.g. preference for familiar water sources, economic security) (Marshall & Kaminsky, 2016) – neither of which were identified in this doctoral research. However, it remains, by using SDT as a framework I was able to define a greater diversity of motives than those previously outlined in existing RWS literature.

Further, I demonstrated that members' diverse motivation experiences were distinct based on their quality. Motivation experiences varied in the degree to which they were autonomous or controlled (Ryan & Connell, 1989), and they were sortable along the motivation continuum against motivation types (refer to Figure 2). Based on this categorisation, I found that the identified motivation types were the most significant for members. By comparison, members' amotivations were low, and levels of intrinsic motivation, introjection types of motivation and external motivations were moderate. In this respect, my findings were consistent with previous applications of SDT in a development context. Sayanagi and Aikawa (2016) found motivations to participate in agriculture programs in Madagascar and Japan were also mappable against the SDT continuum, and they identified similar trends regarding the relative importance of motivation types for participants. In other development programs which are socially focused and largely volunteer-driven, one could expect to find a similar level of significance for identified motivations.

The salience of identified motivations for members was expected and consistent with existing conceptualisations of motivations documented in the RWS literature. Although motivation has received limited attention in the RWS literature, implicit in CBM design is an assumption that the material need for improved water, and the associated perceived value of the infrastructure, will motivate community members to take on management

responsibilities (Carter et al., 1999; Lockwood et al., 2003; Moriarty et al., 2013). Such assumptions regarding motivations in CBM are rooted in conceptions of water as an economic good (Rout, 2014; United Nations, 1992), with communities' needs for water assumed to provide the incentive for management and ongoing supply (Hope, 2015). As Lockwood et al. (2003, p. 20) noted, "it is only common sense that motivation or willingness to contribute to the maintenance of a system is based on a perceived benefit".

In addition to material need, some argue that a psychological sense of ownership – defined as a feeling of ownership and an associated commitment towards the water supply service (Marks et al., 2013), drives users to take on management responsibilities (Kelly et al., 2017; Marks et al., 2013). Ownership among users is fostered by commencing their participation at project inception (Marks & Davis, 2012) and through their ongoing involvement in management decisions (Kelly et al., 2017). Though not defined as a motivation type per se, I argue that both the material and the psychological value of water supply (i.e. ownership) are analogous to identified motivations.[100]

[100] Identified motivations are internalised, and are concerned with behaviour that is valued and is congruent with personal goals (Ryan et al. 2008; Ng et al. 2012)

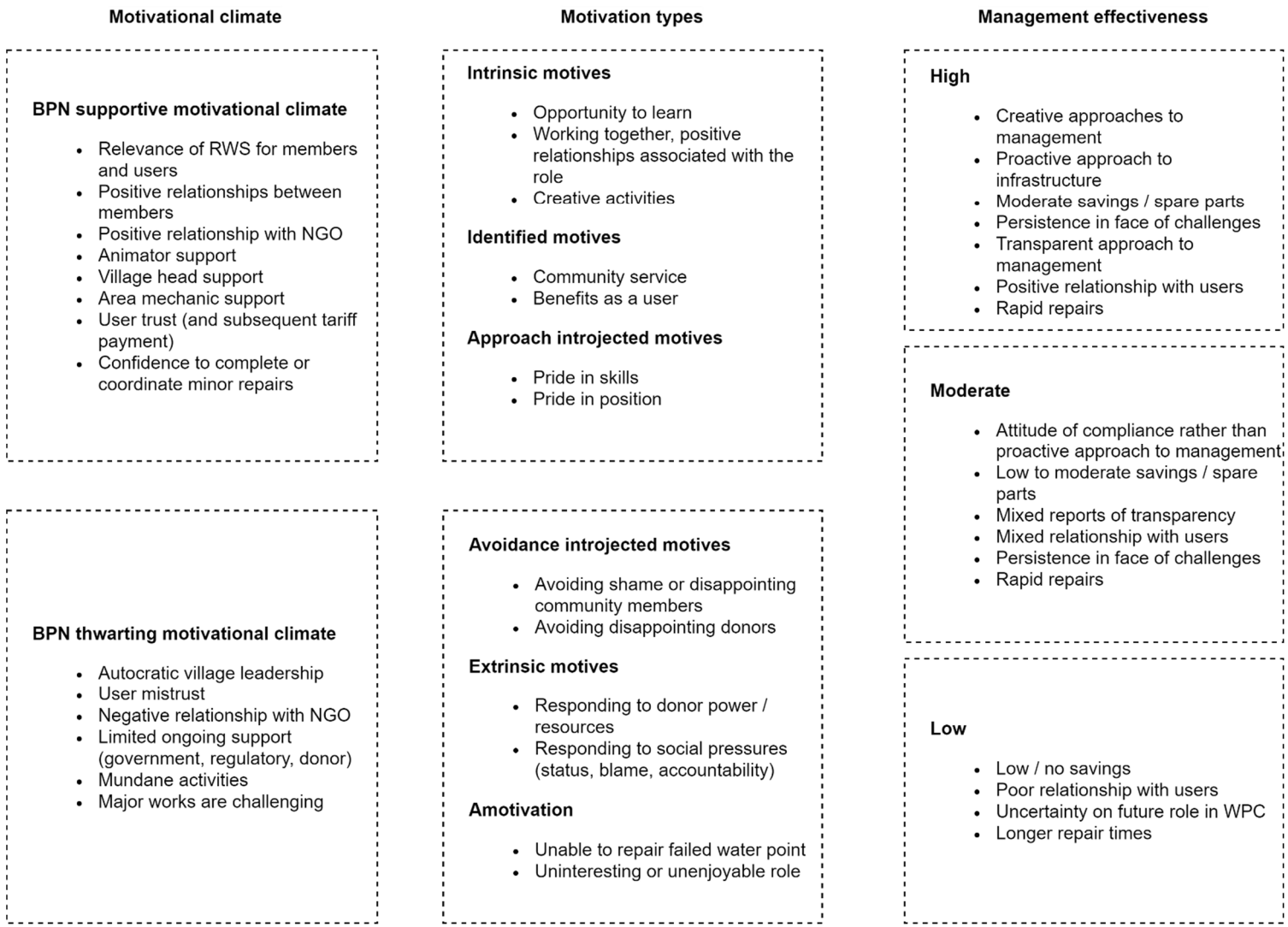


Figure 25: Summary findings of the motivational climate, motivation types, and management effectiveness of WPCs in Malawi

The findings in my doctoral research do not negate the importance of identified motivations in driving RWS outcomes in CBM. Indeed, as noted earlier, identified motivations were the most important motivation type for WPC members in the Malawi case studies. However, importantly, the absence of a theoretical exploration of motivations, and the subsequent focus on a limited conceptualisation of motivations, has left many motivation experiences and their consequences unexplored. I found limited evidence of motivation frameworks or tools which have explicitly been used to measure or explore the motivations of WPC members in the RWS literature.[101] Hence, it is not surprising that of all sustainability determinants, motivations have been described as the "most abstract and difficult to define or measure" (Lockwood et al., 2003, p. 20) . In sum, the use of SDT as demonstrated in this thesis has provided a framework to define the range of motivation experiences and types in a CBM context. By doing so, this research has built on the current understandings of what drives WPCs' commitment to management responsibilities.

Members' variable motivations result in a similarly diverse consequences regarding members' management effectiveness, as I discuss in the following section.

Members' diverse motivations have implications for management effectiveness

Understanding the quality of members' motivations presents an opportunity to predict sustainability outcomes. Autonomously motivated members are more likely to engage with and persist with their roles. This assertion is backed by SDT research in other disciplines. Previous SDT meta-research (Deci et al., 1999; Deci & Ryan, 2000; Patall et al., 2008) has shown that compared to controlled motivations, autonomous motivations are associated with greater persistence, creativity, problem-solving and psychological wellness. These effects have been observed across a range of domains and cultures. I could not draw such broad conclusions in this doctoral research because of the small sample size. However, the findings presented in Chapter 9 were consistent with SDT literature. Namely, WPCs whose participation was a result of mostly autonomous

[101] I recognise that Lindsay (2011) used Herzberg's motivational framework to assess the motivations of area mechanics in Malawi, and Marshall and Kaminsky (2016) used Maslow's hierarchy of needs to evaluate motivation strategies in RWS and sanitation program. Neither of these studies focused on the motivations of community managers.

motives were more likely to demonstrate behaviour associated with sustainability outcomes such as collecting tariffs and completing maintenance (Fisher et al., 2015; Madrigal et al., 2011), and transparency practices (Domínguez et al., 2019; Hutchings et al., 2015; Madrigal et al., 2011). Said more generally, WPCs whose overall motivation orientation was autonomous had internalised WPC management responsibilities and were more effective in management approaches than WPCs whose overall motivation orientation was controlled. Thus, drawing links to Figure 26, if one understands members' motivation types, it is possible to predict their management effectiveness.

The variable quality of different motivation types has direct implications for future iterations of CBM design approaches in Malawi and beyond. Namely, through design approaches which seek to foster autonomous motivations, by i) limiting drivers of extrinsic motivations and amotivations; and ii) supporting members' intrinsic (e.g. opportunity to learn, working together, creative approaches) and identified motivation experiences (e.g. community service, benefits as a user). For example, CBM training approaches could identify and promote interesting aspects of the role, or encourage a focus on collaborative working relationships between members, and between members and users. A focus on bolstering autonomous motivations may in turn enhance sustainability outcomes. Such assertions are consistent with findings from Marshall and Kaminsky (2016), who argued successful RWS projects focus on a range of higher order motivations while limiting external drivers.

It would be naïve to presume all WPC activities can be interesting or enjoyable, or would be valued at inception. That is, not all activities related to WPC management are likely to be associated with internalised (i.e. autonomous) motivations in the first instance. Later in Section 9.3 I discuss how externalised motivations associated with water point management activities can be internalised through BPN-supportive design.

In sum, previous conceptualisations of members' motivations have received limited attention in the RWS literature despite being central to the effectiveness of RWS sustainability efforts. I argue that SDT provides a framework for a more nuanced understanding of both members' experiences of CBM and of their subsequent

motivations. My findings have shown WPC members are likely to experience a diversity of autonomous and controlled motivations for participating, contrary to existing narratives in the RWS literature which have largely neglected motivation. In addition, SDT provides a model which can be used to predict management effectiveness based on members' motivation types.

9.2 RWS interventions and programs can be evaluated for BPN support satisfaction

The existing SDT framework and tools could be adapted to evaluate motivation in CBM programs and critique CBM design approaches. In the implications section of Chapter 7, I established how, in ABCD programs, SDT could be used to evaluate participants' motivational climate, BPN satisfaction, and motivation types. The same principles apply regarding testing RWS interventions. In this section, I outline why the measurement of motivation and motivation determinants is important, and which tools may be relevant for this task in the CBM context.

SDT can fill a significant gap by helping to explain why and how sustainability interventions, which are contingent on WPC motivations, lead to outcomes. The majority of RWS sustainability literature has focused on causal (e.g. Madrigal et al., 2011) or correlated (e.g. Fisher et al., 2015) links between variables (i.e. sustainability determinants[102]) and sustainability outcomes. This is illustrated in Figure 26, label A. Such pathways ignore the mediating experiences of human motivations which also drive outcomes. Further, when it is viewed with an SDT framework, the sustainability discourse in the literature tends to consider design approaches which focus on competence, not autonomy[103] or relatedness support. This represents an important gap as the satisfaction of all three needs (autonomy, competence and relatedness) is necessary for psychological health and as support for autonomous motivation (Deci &

[102] These are analogous to elements of the motivational climate.

[103] I consider the DRA literature to be an exception as I discuss later in Section 9.3.1. Though autonomy per se is not explicit, a sense of choice is central to DRA design.

Ryan, 2000). Hence, the existing sustainability literature considers and designs for the ability of WPC members to manage RWS effectively, rather than their willingness.

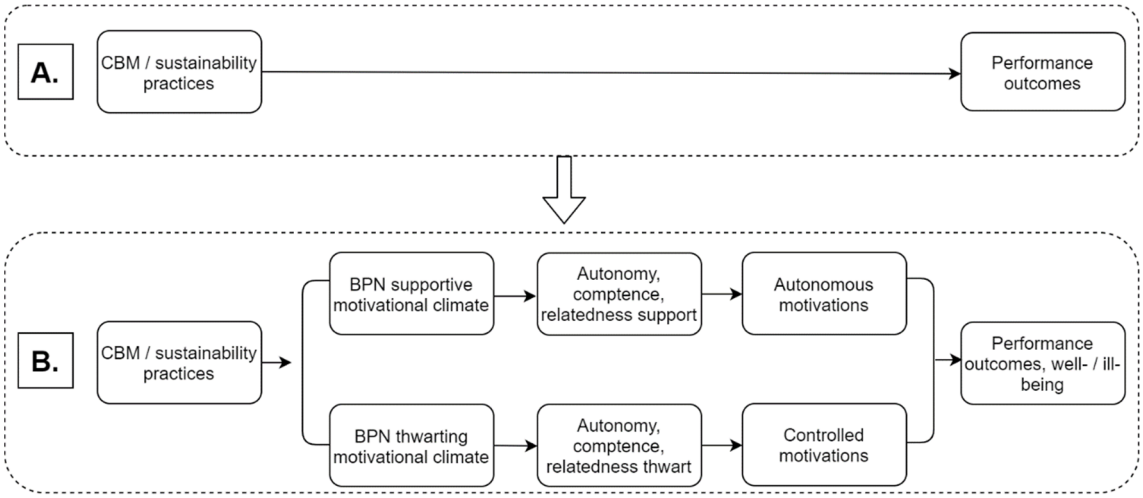


Figure 26: The role of SDT as an explanatory tool in CBM design

SDT concepts can help explain how and why designed sustainability approaches which rely on human motivations may be effective. Motivations are dynamic, and design interventions can have vastly different effects on members' motivations depending on how they are implemented. Approaches which attempt to control behaviour may motivate behaviour and drive RWS outcomes. However, based on research from SDT proponents, they can come at a cost (Deci et al., 1999; Ryan & Deci, 2020; Vansteenkiste et al., 2005). For example, calls for professionalisation in the RWS literature include a focus on greater accountability for service delivery as a means to drive sustainability outcomes[104] (Chowns, 2015b; Moriarty et al., 2013). On accountability, Moriarty and colleagues (2013, p. 336) describe it as "boil[ing] down to the more systematic holding of service providers[105] to account for their work, against pre-defined performance indicators, and includes the use of regulation". Though such approaches are likely to drive management behaviour, if they rely on external motivations to drive behaviour, they risk negative consequences. SDT research (Deci et al., 1999; Ryan & Deci, 2020; Vansteenkiste et al., 2005) has shown that external

[104] Professionalisation also encompasses a service delivery approach, improving the skills and capacities of those responsible for RWS management, and remuneration for service providers.
[105] The village WPCs were the service providers in this doctoral research.

pressures foster low quality, external motivation, and undermine existing autonomous motivations. Hence, although accountability pressures may drive behaviour, they can also create perverse outcomes.

Using the SDT framework and tools, it is possible to interrogate how such sustainability design interventions are mediated by members' autonomy, competence and relatedness satisfaction, and their subsequent motivation quality. This is illustrated in the pathway in Figure 26 (label B). This figure is based on the SDT process model of behaviour change (Ng et al., 2012; Ryan, Patrick, et al., 2008).[106]

In addition to the SRQ used in this thesis, other tested quantitative tools are relevant for providing a more complete picture of members' motivational climates and subsequent experiences of BPN support. These tools include the SDT Health Care Climate Questionnaire (Williams, 2002; Williams et al., 1996; Williams & Deci, 1996)[107] which evaluates the degree to which a context or intervention is experienced as BPN-supporting or BPN-thwarting. This questionnaire is relevant with respect to members' relationships with important others who support their management efforts (e.g. "I feel that my [practitioner] has provided me choices and options") (HCCQ in CSDT 2020, p. 1). Examples of these important others include local government officials or development partners. The Basic Psychological Need Satisfaction and Frustration Scale (BPNSFS) (CSDT, 2020; Van der Kaap-Deeder, J. et al., 2019) could also be adapted to the CBM context. This questionnaire assesses the degree to which autonomy (e.g. "I feel a sense of choice and freedom in the things I undertake"), relatedness (e.g. "I feel close and connected with other people who are important to me") and competence (e.g. "I feel capable at what I do") were satisfied or thwarted in a given CBM context (BPNSFS in CSDT 2020, p. 2). These tools were not tested in my research and hence their application to CBM is a proposition only. Nonetheless, these questionnaires could

[106] BPN satisfaction or frustration is not shown in Figure 25 as it is in the SDT process model, as I did not discretely evaluate it in the analysis. Instead I focused on the motivational climate. However, BPN satisfaction or frustration was implicit in members' responses regarding the motivational climate. For example, when members' referenced imposed projects, I considered this an example of an autonomy-thwarting aspect of the motivational climate and an experience of autonomy frustration. In this section (9.2), I outline approaches in SDT which explicitly measure BPNs.
[107] Although I view the Health Climate Questionnaire as relevant, I decided against its inclusion in this research for purposes of simplicity.

determine the effect of design interventions on the motivational climate, BPNs and motivation types, and in doing so they could provide a nuanced representation of members' experiences and motivations in the CBM context.

In the following section, I continue on the theme of BPN support, and describe how CBM design could be enhanced via BPN-supportive practices, and in doing so support members' autonomous motivations.

In the Section 9.3 below, I discuss approaches to BPN-supportive program design based on the sustainability literature, the thesis findings concerned with motivational climate, and BPN-supportive practice as outlined in SDT literature.

9.3 Potential components of a BPN-supportive program design approach

A central question regarding WPC behaviour is how to foster more autonomous motivations. In this section I outline four approaches to CBM design which integrate BPN-supportive practices.

Motivations are not static, an individual can integrate an external value or behaviour and makes it their own, through a process of internalisation (Ryan & Connell, 1989; Deci et al., 1994). As I discussed in Section 7.6.5, the SDT continuum shown in Figure 2 provides a useful illustration of how controlled motivations can become more or less internalised (i.e. autonomous). For example, WPC members' subjective experience can range and change from a feeling of unwillingness (amotivation), to compliance (external), to an internal commitment (identified) through the process of internalisation (Ryan & Deci, 2000b). Such processes of internalisation are supported when an individual's BPNs are satisfied. In contrast, a value or behaviour can become more externally regulated when a persons' BPNs are thwarted.

The SDT literature has defined elements of BPN-supportive practices which could be integrated into future iterations of CBM. These are summarised below in Table 17. These approaches foster existing autonomous motives, and support an individual's

internalisation of extrinsic motivations. For example, in the case of CBM, a person can internalise their motivations regarding their role and the rules they must follow in relation to water point management). The BPN-supportive practices in Table 17 are framed as a facilitated process. In the case of CBM, the question of *who* delivers such support is significant, as external support from government, development partners or the like, is often absent after project inception. Hence, in addition to discussing how such support could be integrated at inception, I also discuss who may be responsible for facilitating BPN-supportive practices.

Table 17: BPN-supportive practice as defined in SDT literature

Autonomy-supportive practices	Competence-supportive practices	Relatedness-supportive practices
• Provide a rationale for the task. • Offer meaningful choice. • Encourage initiative. • Acknowledge the interesting, uninteresting or difficult aspects of the task. • Acknowledge the participants' feelings. (Summarised from Deci et al., 1994; Assor et al., 2002; Ntoumanis et al., 2020; Su & Reeve, 2011; Gagné & Deci, 2005)	• Provide informational feedback. • Provide non-controlling structure. • Provide tasks that are optimally challenging based on participants' skills[108]. • Identify competence barriers. • Support skills development to navigate competence barriers. (Summarised from Jang et al., 2010; Ntoumanis et al., 2020; Silva et al., 2014)	• Show empathy for participant • Foster a respectful and trusting practitioner-participant relationship (Summarised from Ntoumanis et al., 2020; Ryan & Deci, 2017)

Below I list four ways BPN-supportive approaches can be integrated into CBM design. These recommendations integrate research findings regarding salient aspects of members' motivational climates, BPN-supportive practice as defined by SDT, and existing RWS sustainability literature. Although I draw from the Malawi case study experience, I argue that the approaches are relevant for CBM in other locations. The approaches involve direct support for WPC members, rather than institutional arrangements, and I limit implications to aspects of the motivational climate which are more easily influenced by practitioners. For example, I have not addressed autocratic

[108] Optimal challenges are those where a person can utilise and stretch their capacities (Ryan & Deci, 2017). The challenge is not too difficult or overly easy.

village leadership, and nor do I discuss opportunities to make village culture more autonomy-supportive or less controlling.

9.3.1 Supporting autonomy at project inception through choice and relevance

Findings from this research suggest RWS programs could benefit from approaches which support participants to define and voice their RWS priorities at project inception. If this is done, projects are more likely to support members' autonomy and their existing autonomous motivations.

For Malawi participants, their sense of autonomy was dependent on how projects were initiated by development partners. Participants experienced feelings of autonomy when they were able to define their priorities, which included improved access to water. They compared this experience to being subject to pre-designed projects which they felt were "imposed". These findings are consistent with previous research on DRA other country contexts which has highlighted links between the degree to which users felt they had initiated RWS projects and sustainability outcomes (Marks et al., 2013; Sara & Katz, 1997). Thus, I outline two ways in which participants' choices can be integrated into CBM design at project inception. I first focus on existing DRA practices as a means of integrating choice and relevance in the early project stages. I then outline how ABCD may provide an alternative framing of CBM projects, one which makes use of, and is aligned with, existing village structures.

In principle, DRAs[109] integrate choice and relevance in the pre-construction phases of RWS programs. DRAs aim to ensure water supplies are installed only in communities where an improved water service is valued and in demand (Kleemeier, 2000; Sara & Katz, 1997). Demand is signalled through a community financial contribution to capital costs, though this is commonly substituted with in-kind contributions of other resources such as labour (Moriarty et al., 2013; Rout, 2014). As DRA responds to existing

[109] I explained DRAs previously in Section 1.1. Previous research has highlighted challenges with inconsistent implementation of both DRA and CBM. Hence, I acknowledge what a DRA is in theory may be significantly different to what it is in practice. The aim of this thesis is not to interrogate the diverse ways in which DRA (or CBM) is implemented. Instead, I critique and compare DRA principles and practice more generally, and explain how projects can be assessed based on the degree to which they support or thwart BPNs.

demands, I argue it is implicitly concerned with inherent, higher quality, identified motivations. While the RWS literature does not use the language of BPNs, aspects of DRA practice are consistent with elements of autonomy support shown in Table 17. DRAs support participant autonomy by integrating choice for community actors into project inception by enabling them to make decisions regarding the opportunity to articulate water as a priority (Sara & Katz, 1997), the opportunity to refuse RWS projects (Kleemeier, 2000; Sara & Katz, 1997), and choice regarding technical options and levels of service (Kleemeier, 2000; Marks & Davis, 2012; Sara & Katz, 1997).

DRA promotes feelings of ownership towards RWS infrastructure among participants (Kelly et al., 2017; Marks & Davis, 2012), with ownership indicative of internalised motivations, as I discussed in Section 9.1. The different choices associated with DRA, including those referenced above, affect ownership to varying degrees (Marks & Davis, 2012), indicating that it is not simply the act of choice, but what choices are presented, which impact members' sense of ownership or autonomy. From an SDT perspective (Assor et al., 2002; Deci et al., 1994; Patall et al., 2008), the integration of meaningful choice into DRA processes is more likely to support autonomous motivations and subsequent effectiveness outcomes than design approaches directed by external agencies. Hence, it is not surprising DRA has been identified as a contributing factor to RWS sustainability (Katz & Sara, 1997; Marks et al., 2018; Montgomery et al., 2009; Prokopy, 2005; Whittington et al., 2009). Though not framed in terms of motivations, I argue that sustainability outcomes associated with DRA are in part because of the focus on existing internalised motivations, and autonomy-supportive design.

In DRAs, members' sense of volition in accepting ongoing management responsibilities is less clear than their broad endorsement of projects at inception. A key aspect of DRA is that community actors assume management responsibilities at inception (Katz & Sara, 1997; Kleemeier, 2000), and this is the foundation of ongoing management arrangements (i.e. CBM). At the interface of DRA and CBM, participants make key decisions in early project stages regarding the nature of management. These decisions can relate to: the level of frequency of tariff collection, project rules, and whether maintenance is to be completed by a WPC or a third party. I found no evidence in the

literature regarding how such choices in this phase impact members' sense of autonomy or ownership. Further, in the Malawi case study sites, I was unable to determine whether members experienced this formative stage as controlling or autonomy supportive. While members were critical of imposed projects at inception, they made no explicit reference to feeling management arrangements were imposed or volitional. It appeared members' assumed management responsibilities were coupled with receiving RWS infrastructure.

Nonetheless, as I outline in Section 6.4.4, over time some aspects of management were experienced as pressuring. It was unclear if members' knew this would be the case when they first accepted their roles and responsibilities. Hence, while autonomous motivations are implicitly integrated into some aspects of DRAs, further research is required to determine if WPCs' sense of autonomy is supported or thwarted by committing to management responsibilities at project inception.

As an enhancement of DRA, ABCD may be an effective framework to support members' autonomous motivations at project inception. Findings from CADECOM staff and community respondents indicated ABCD was both an effective approach to align development partner assistance with existing priorities, and was a means to ensure CADECOM support was relevant. This was noted by the CADECOM program manager who described the ABCD process as "development from within not from without … it is not something they [community actors] are doing because anyone is pushing to do it, but something which is relevant to them". Further, the ABCD approach lends itself to integrating autonomy into the phase of establishing management arrangements as I discuss in the remainder of this section.

A rigid use of CBM potentially ignores existing (internalised) ways of managing communal resources. A recent multi-year study of RWS in rural Malawi, Ethiopia and Uganda challenged normative technocratic approaches to water management, arguing a 'best-fit' rather than 'best-practice' model was an appropriate approach to RWS management (Whaley et al., 2019; Whaley & Cleaver, 2017). The authors recommended "going with the grain" (Whaley & Cleaver, 2017, p. 59), they called for

alignment with existing village-scale norms and practices as a more relevant approach to management rather than a CBM approach that is simply one-size-fits-all for all locations.

So-called 'going with the grain' approaches are consistent with ABCD principles I discussed in Section 7.3, and this is why ABCD might offer a suitable frame to establish relevant management structures in CBM. In the principles and practice of ABCD, existing assets and capacities are considered the primary building blocks of change processes (Kretzmann & McKnight, 1993). The appreciative interviews, asset-mapping, and planning and action phases of ABCD identify local assets which can be leveraged to progress community aspirations such as improved RWS (Kretzmann & McKnight, 1993, 1996; Mathie & Cunningham, 2003). Assets are considered in the broad sense of the term and include existing associations, skills, ways of operating and ways of making decisions within the focus community. In this respect, ABCD leaves scope for management arrangements to reflect existing associations and practices.

Rather than prescribe how programs (e.g. water supply projects) must be managed, the ABCD process provides a sense of choice by promoting community-led visioning. The ABCD approach also encourages initiative through bottom-up design approaches via planning and action phases which progress the realisation of the vision using existing assets. Such 'generational choice' choice which shapes the creation of solutions, methods and goals, is more likely to support autonomy than simply offering a 'menu' of options (Assor et al., 2002; Deci et al., 1994; Gagné & Deci, 2005; Jang et al., 2010; Ntoumanis et al., 2020; Patall et al., 2008; Reeve et al., 2003; Su & Reeve, 2011) as is described in the DRA literature (Katz & Sara, 1997). Hence, an ABCD frame offers a means to operationalise BPN-supportive aspects into inception phases and the establishing the form and function of RWS management. Village actors could still choose to use a structured CBM approach or a blended approach consistent with concepts of institutional bricolage (Jones, 2015). The point is those responsible for management would decide what they are capable of and willing to do based on their context and goals, and not feel pressured to conform or comply with a particular management arrangement.

Adapting existing community institutions and approaches to managing water also comes with risks. The absence of a defined framework like CBM to manage water could also compromise members' (or equivalent actors') competence. SDT research has shown that (non-controlling) structures are beneficial in providing clear expectations and goals, and in doing so, structure can support autonomy and competence (Jang et al., 2010; Liu et al., 2015; Ryan & Deci, 2020). [110] It is unclear whether a structured CBM approach is more or less BPN-supportive than a management approach based on existing community institutions and approaches. Hence, a shift away from prescriptive CBM approaches towards a more bottom-up, constructed management approach warrants caution, as it may inadvertently compromise the autonomy and competence of the association or individuals responsible for water management. For example, those responsible for management may struggle in the absence of a structured approach. Or, it may be difficult for external actors to tailor their support in the presence of a range of management models across communities. In this regard, SDT tools or frameworks I described in Section 9.2 can test whether an ABCD approach, or a prescribed CBM approach, is experienced by members as more or less BPN-supportive.

A second difficulty in using ABCD (Friedli, 2013; Gray, 2011; MacLeod & Emejulu, 2014) or similar approaches which 'go with the grain' (Whaley & Cleaver, 2017) is the risk of reinforcing existing power relations which foster inequality. For example, the use of existing power structures to manage water could perpetuate the exclusion of minority groups from decision-making processes. This dynamic between members and users highlights the importance of considering users' autonomy as well as members' autonomy when establishing RWS management structures and processes. I discuss this further in Section 9.3.2. Further, earlier in this thesis I explained that ABCD has been criticised for leaving the obligations of state actors unchallenged (Friedli, 2013; Gray, 2011; MacLeod & Emejulu, 2014). The state is an important stakeholder in supporting CBM. It is overly optimistic to consider ABCD as a catch-all approach to address failures in government regulation or support of CBM.

[110] By contrast, controlling structures pressure people to behave in a certain way.

As I discussed in the introduction to this section, motivations are not static. Supporting autonomy in early project stages is important, and both DRA and ABCD provide ways of designing for autonomous motivations at project inception. However, the fact remains that autonomous motivations can be eroded in the face of unsupportive motivational climates, and in the absence of external support. The following three sections discuss mechanisms to integrate ongoing BPN support into CBM design approaches.

9.3.2 A shared agenda between WPC and users supports internalisation of roles

Findings from this research indicate that a shared agenda between members and users can be an effective means to support both parties' sense of autonomy, competence and relatedness (BPNs). A shared agenda is characterised by a collaborative WPC–user relationship, where members' and users' goals are volitional, aligned and mutually supportive. Drawing from case study findings, when WPC members had internalised their roles, they were autonomously motivated, and proactive, effective in repairs, and transparent with and accountable to users. Users' collaboration was also characterised by a sense of autonomy regarding their adherence to rules, payment of tariffs and support for hygiene efforts at the water point. Hence, the member-user relationship was characterised by a sense of autonomy with respect to member and user responsibilities, competence in working effectively together, and trust (i.e. relatedness). These experiences were fostered through members' and users' commitment to their mutual role and members' transparency practices.

Though not framed in terms of internalised motivations, WPC members' transparency practices and user tariff payments have been shown to be interrelated in various country contexts (Kelly et al., 2017; Naiga et al., 2015; Willetts, 2012), and important determinants of CBM sustainability (Domínguez et al., 2019; Hutchings et al., 2015; Madrigal et al., 2011). Kelly et al.'s (2017) research across 18 communities in Kenya, Ghana and Zambia, found that WPCs' transparency practices fostered trust and social capital among users, which was later actualised in the form of users' collaboration. Kelly et al. argued social capital facilitated participation of members and users in management efforts. I view such findings as symptomatic of a shared agenda between

users and members, and as consistent with experiences in the Nkhumba, and to a lesser degree Nanchopwa WPCs. In these villages, the positive WPC–user relationship was a source of relatedness (i.e. trust) and competence (i.e. efficacy together) support for both members and users. The support of relatedness and competence was also relevant to members' and users' autonomy. When mutual trust was present, both groups of actors were more volitional, and autonomously motivated in their roles.

I posit that an ABCD process could be used to foster a shared agenda between members and users, and to support the internalisation of their mutual roles in CBM approaches to RWS. As I outlined in Chapter 7, change in ABCD processes is driven by consensus and co-operation on shared goals (Kretzmann & McKnight, 1993). In applying ABCD to the RWS context, visioning and subsequent action plan stages of the ABCD process make the rationale for the water point clear. These stages also draw links between goals and roles which progress the vision, and they offer choice and structure to those contributing to the shared agenda. Peters and Eliasov (2014, p. 58) describe this as the "what, why, who, how, where and when" phase of ABCD. Through shared aims, and articulating associated responsibilities, it introduces accountability mechanisms in an autonomy-supportive manner as they are defined collaboratively rather than imposed by external actors.

As such, ABCD aims for an 'us and us' dynamic between WPCs and users, where both members and users are volitional in their roles, more effective working together, and have a trusting relationship. I contrast this with an 'us and them' relationship, where members feel controlled by the bottom-up relationships with users, and users feel controlled top-down by members (Deci et al., 1989; Gagné & Deci, 2005; Reeve, 2009). This 'us and them' is illustrated in Chilaulo and Galufu, and to a lesser degree Helema and Malekuwa, as I outlined in Section 6.1. Hence, alignment of agendas and agreement on roles is important for BPN support for both users and members, and provides a basis for both actors to internalise their goals and roles (Ryan & Connell, 1989).

Revisiting a shared agenda and roles with regularity is important to ensure a responsiveness to the evolving experiences of RWS management. Findings from

Chapter 6 showed that members understanding of what managing a water point entailed, including emergent challenges, increased over time. CBM training is typically given at the start of projects (Kleemeier, 2000), when members have no or limited hands-on experience in RWS management and refresher training is often absent. Therefore, it is likely important for members and users to regularly address or endorse challenges as part of a volitional approach to their responsibilities regarding the water point. This endorsement of challenges is consistent with findings in Section 6.1.2, where members reported they were able to navigate certain challenges (e.g. abuse from users) when they understood the challenges were part of the role. In these instances, members had accepted the challenge rather than feel overly pressured by it. As shown in Table 17, acknowledging challenges is an important aspect of BPN-supportive practice (Deci et al., 1994). This points to the importance of members (and users) having a full understanding of what WPC participation entails, including associated challenges. This is something which is difficult to establish at project inception when members and users have had limited exposure to RWS management. Further, it highlights the need to revisit challenges of roles (or not, in the case of opting out of the role), as well as revisiting members' autonomous motives for supporting RWS outcomes, such as valuing improved supply, or learning opportunities.

What I allude to above is the importance of ongoing processes to maintain positive and productive WPC–user relationships. I argue such 'social and relational O&M' should receive as much attention as technical O&M. Although it may be able to be managed in part internally within a community, it should also form part of the remit of actors providing external support. I do not specify who is best placed to facilitate dialogue regarding shared agendas and mutual roles on an ongoing basis. However, drawing parallels with technical maintenance, it is prudent to identify someone skilled who is able to navigate the (potentially) contested nature of water and WPC–user dynamics. For example, in AACES projects in other locations, animators or district extension workers had adopted the ABCD process and filled such a support role at times (Winterford & Cunningham, 2017). Further pushing the analogy with technical maintenance, 'social and relational' support, it could be something done as a preventative measure, or in response to social and relational 'breakdowns'. Hence, by

revisiting shared agendas and addressing and endorsing challenges, both members' and users' BPNs are more likely to be supported, and motivations regarding mutual roles internalised.

9.3.3 Local, on-demand support structures should be enhanced to emphasise BPN-supportive approaches

Support for WPCs can be delivered in either an autonomy-supportive or a controlling manner, and these different forms of delivery will bring different effects regarding motivations. In this sub-section I outline the importance of *what* support is offered by community and external actors and *why* it is important in terms of motivational climate. I then discuss the importance of *how* support is delivered, in order to support more autonomous motivations. I distinguish between internal and external support mechanisms to frame this discussion. Internal support structures are those which exist within the community. External structures include district governments, private sector operators (including area mechanics), development agencies, and community-based associations (M. Miller et al., 2019).

In Malawi case study WPCs, ongoing management support included technical support from area mechanics, and encouragement and conflict resolution from village leaders. In addition, users provided support through their cooperation and collaboration. These proximal support mechanisms were important aspects of members' motivational climates. Members' used area mechanics and village leaders to navigate technical and relational challenges respectively, while user collaboration also enhanced water point hygiene and functionality. In doing so, these actors were important elements of members' motivational climate. The importance of these actors and their support functions is consistent with previous studies in the RWS literature. Water point functionality is associated with user collaboration (Behnke et al., 2017; Klug et al., 2017), and the presence of area mechanics (Fisher et al., 2015; Nekesa & Kulanyi, 2012). While conflict resolution has been cited as an important element of support (e.g. McIntyre & Smits, 2015) suggesting such support mechanisms extend beyond the Malawi cases.

Although these aforementioned actors were significant supports for the Malawi members' autonomous motivations, they were also the only support available. WPCs mostly operated independently, with no clear access to additional training, funding, or technical advice from external actors. This meant that if members were faced with a significant problem that was beyond the capacity of users, area mechanics, or village leaders to assist, options were limited, and this aspect of members' context compromised their motivational climate.

The importance of external support is not unique to CBM in Malawi. There is a general consensus that external support is necessary to sustain CBM approaches to RWS (Fisher et al., 2015; Hutchings et al., 2015; Moriarty et al., 2013). It is unrealistic to expect WPCs to be able to operate without support, and a bipartisan approach is appropriate where WPCs are supported by external actors and support functions extend to capacity building, administrative assistance, financial assistance, monitoring, and technical assistance (M. Miller et al., 2019). Though the nature and level of support required for WPCs will vary depending on the nature and context of the technology involved (Klug et al., 2017). For example, more complex mechanised systems such as solar pumps are more likely to require external technical and financial support as opposed to handpumps.

The support functions mentioned above largely target competence support, however, they will also foster, and avoid the thwarting of, members' sense of relatedness and autonomy satisfaction. For example, as I explained earlier, in the Phalombe villages, relevant assistance from users and area mechanics was a source of trust (i.e. relatedness) and it meant members had the options (i.e. autonomy) and capacity (i.e. competence) needed to navigate challenges. By contrast, members' in Galufu felt abandoned and somewhat lost in the absence of follow-up support from NGO partners, frustrating all three of their BPNs. Hence, support mechanisms provide important pathways to support members' competence, relatedness and autonomy. Without support, it is unrealistic to expect members to remain motivated.

Although the presence of support mechanisms is important, *how* they are delivered also matters in terms of fostering members' autonomous motivations. Building on findings from this thesis, existing internal and external support mechanisms recommended in the RWS literature can be enhanced by integrating BPN-supportive practices such as those shown in Table 17. I use two training documents from Malawi to illustrate, and build on, how BPN-supportive practices could be operationalised in a CBM context. I then use a second example to compare how support approaches could also compromise members' motivational climates. Though the examples are based in a Malawi context, I posit the principles involved are applicable to other country contexts.

Area mechanic training documents (MoAIWD, 2015d) from Malawi provide a useful example of how BPN-supportive practice could be integrated into existing support structures. Training guidance included building the area mechanics' ability to: listen to what WPCs say, build on committees' existing experience, ask members open-ended questions, and allow members to solve their own problems, guide rather than direct, and praise members' contributions to resolving challenges (MoAIWD, 2015d). These skills are consistent with the BPN-supportive practices shown in Table 17. They help members navigate competence barriers, encourage initiative, are non-controlling and respectful. Hence, they are likely to provide a supportive motivational climate and foster more autonomous rather than controlled motivations.

At times, members will require structured feedback from support actors (e.g. area mechanics or district staff) to help members assess their own performance, and navigate technical or social challenges. Again, how this feedback is delivered and experienced by members is important in supporting members' BPNs. Ideally feedback is experienced as informational rather than controlling. In SDT, informational feedback is non-controlling, relevant and constructive, and it is experienced as autonomy- and competence-supporting by the recipients (Jang et al., 2010). Informational support provides clear expectations, helps members understand the effects of their actions, and aids understanding of what is required to progress an outcome. For example, it may involve breaking down complex tasks relevant to technical or social challenges into manageable steps (Sayanagi, 2017). By contrast, controlling approaches are

experienced as coercive and pressuring (e.g. “you should do it this way”), and consequently can thwart autonomy and competence (Deci et al., 1989, 2017). In short, informational feedback promotes understanding and initiative, while controlling approaches promote compliance (Reeve et al., 1999).

Malawi district extension worker[111] guidelines provide an example of what controlling approaches look like in practice. Although these guidelines note that extension workers “raise the motivation for regular maintenance” (MoAIWD 2015a, p. 125), some of the approaches suggested were likely to inadvertently promote poor quality, external motivations. Key questions extension workers are directed to ask as part of monitoring include: “how much is the water tariff per household and how often is it collected?”; “for what purpose is the water tariff collected?”; and, “are you using the user's contribution book to record the beneficiaries who paid for water?” (MoAIWD, 2015b, p. 125). Support delivered in this manner focuses on technocratic measures and compliance. It does not seek to understand members’ experience of RWS management, or the rationales for their responses. As a result, such support can be counter-productive, they may introduce feelings of pressure and are unlikely to support the internalisation of management practices.

Support structures form an important part of members’ motivational climates. Findings from this thesis and the RWS literature indicate members’ motivations benefit from competence-based feedback. Support delivered by local actors such as users, village leaders and area mechanics are an important aspect of members’ motivational climates which helps them to navigate competence barriers. However, local support has limits and should be bolstered and back-stopped through external support. This support could take the form of capacity building, administrative assistance, financial assistance, monitoring and technical assistance (M. Miller et al., 2019) provided by local government, development partners, community associations, or private sector actors depending on the context. Though the support being suggested is primarily competence support, it is expected members’ sense of relatedness and autonomy satisfaction will

[111] District agents who have responsibilities for monitoring RWS.

also be enhanced. However, it is not simply a matter of *what* support is provided but also *how*. Internal and external actors who are delivering support should be cognisant of their approaches, and ensure their support is delivered in a BPN-supportive manner that fosters understanding and initiative rather than compliance. If it does so, it is more likely to support higher quality, autonomous motivations.

9.3.4 A well-installed borehole and external support for major works is critical to mitigate amotivation

Members have few choices for navigating technical challenges which require large capital outlays. In this regard, the initial borehole construction is an important influence on members' motivational climates. Findings from this and other research in Malawi show that drilling a new borehole was well out of the financial reach of the majority of WPCs (Chowns, 2015b; Mbewe, 2018). Hence, starting with a borehole that is destined to fail does nothing to support the autonomous motivations of WPC members, as was seen in the case of the Galufu WPC. Indeed, if a borehole requires re-drilling, motivation quality is largely irrelevant beyond driving members' persistence in seeking support. Here, I agree with other authors who have identified the importance of borehole construction and called for the supervision and auditing of installations in order to sustain RWS (Baumann & Danert, 2008; Chowns, 2014, 2015b; Foster, 2013; Lockwood & Kang, 2012; Sara & Katz, 1997). Providing a well-installed borehole is a critical part of ensuring members' motivations are not thwarted by a situation they cannot resolve. Because of this, measures which ensure that those who fund boreholes verify they were installed correctly are important, as is financial support which enables members to respond to such critical incidents which are beyond their capacity.

9.4 Chapter summary

In this chapter, I summarised the conceptual and practical implications of my research findings. The explanation of conceptual implications focused on the relevance of SDT as a framework to determine and design for members' motivations. I also outlined the significance of my research findings in expanding existing assumptions which underpin CBM. Namely, members' experience a range of motivational drivers to participate in the

WPC beyond what has been described in existing RWS academic literature. Members' diverse motivations and their determinants have implications for CBM program design and the sustainability of RWS. More autonomous motivations are likely to be associated with management effectiveness. I also discussed how SDT concepts and tools offer approaches to assess motivation constructs in RWS and critique CBM design approaches, based on the degree approaches support or thwart members' BPNs.

In the second part of this chapter I outlined approaches which integrate BPN support into CBM program design. I outlined four ways BPN-supportive approaches can be integrated into CBM design. I first established the importance of ensuring RWS projects were relevant and framed in a way which supported community participants' sense of volition. I explained how existing DRAs appear do this to a degree by establishing choice and relevance at project inception, thus supporting participants' existing internalised motivations. I also described the potential for ABCD to provide a more holistic redesign of CBM which aligns with existing village structures and management practices. Beyond project inception, I discussed the importance of approaches that sustain and foster members' autonomous motivations. These approaches include establishing a shared agenda between members and users, local and external support structures, a well-installed borehole, and external support for major works.

Chapter 10 Conclusion

In this chapter I summarise the main findings of this research. I also outline the limitations of this research and its key contributions to the disciplines of RWS and ABCD practice. I then discuss future research directions which build on my findings, and conclude the thesis with closing remarks.

10.1 Summary of findings

As I explained in the introduction, the objectives of this thesis were threefold. First, to determine what motivated WPC members to participate in WPCs. Second, to identify how these motivations were shaped through members' contexts, specifically the program design (including ABCD), and the community context. Third, to determine the implications these motivations had for management practices in CBM. These objectives shaped the four research questions and subsequent research design. In this section I summarise findings for each research question from Chapters 5 to 8 and describe the data sources I drew from to address each question. I then summarise the implications discussed earlier in Chapter 9.

1. What motivated members to continue to participate in the WPC, and were these motivations autonomous or controlled?

Motivations in CBM are often considered simplistically in the RWS academic literature, and it is assumed members will value an improved water supply, and hence be motivated to manage water services. I interpreted this as being an identified motive. Although my findings supported this assumption from previous literature, it is only one type of motivation experienced by members. I showed WPC members experienced a range of motivations, both higher quality autonomous (intrinsic, identified, and approach introjection) motivations, and lower quality controlled (avoidance introjection, external, and amotivation) motivations, to varying degrees. These motivation qualities not only expanded on existing understanding of members'

motivations, but as I explain later, also had consequences for members' management effectiveness.

I answered Research Question 1 in Chapter 5 using interview data, diary notes, and the SRQ, to determine the range of motivation experiences of members and the significance of subsequent motivation types as defined in the SDT framework. In Chapter 5, I also assessed the consistency between the SRQ and interview findings. I found approximately 90% of SRQ and interview findings regarding motivation types and their significance were consistent or moderately consistent. Findings regarding the significance of each motivation type collated across all members are shown in Table 13. I revisit and summarise the findings from the interviews below.

Across all members, identified motivations were the most significant type, based on the interviews. Identified motives to participate in the WPC included benefits as a user and pro-social motives. Other moderately significant motivation typologies for members included approach introjection in the form of pride in the position and pride in skills, and external motivations, experienced as external pressure from community members or donors. Low-to-moderately significant motivation types included avoidance introjection and intrinsic motivations. Avoidance introjection motivations experienced by members included avoiding shame and avoiding disappointing community members or donors. Intrinsic motivations included the opportunity to learn, positive working relationships with others, and creative activities associated with the role. Finally, experiences and levels of amotivation was rare, and was associated with experiences of finding the role uninteresting and being unable to effect change.

In terms of motivational themes in particular case villages, I found that members in Nkhumba, Helema, Malekuwa, and Nanchopwa were motivated to participate based on low-to-moderate autonomous motivations. In these communities, the incidence of identified motivations was mostly high, intrinsic motivations generally moderate, and amotivations low. The significance of introjection types and external motivations was variable across the four villages. Generally, members in these villages valued the water

point and saw their participation as important for sustaining supply, while some members found aspects of the role interesting or enjoyable.

I found that in Chilaulo and Galufu members were to a low-to-moderate extent driven by controlled type motivations. Galufu had no water to manage, leaving the members questioning why they participated, while members in Chilaulo noted the role was uninteresting. In both villages intrinsic motivations was low. Nonetheless, members from both Galufu and Chilaulo experienced moderate levels of identified motivation. The members saw their roles as important, and linked their participation with supporting water access for themselves or others. In the next section, in response to Research Question 2a, I summarise aspects of the motivational climate which shaped these motivations across villages.

2a. What aspects of the motivational climate were significant for WPC motivations, and how?

This question examined the social and environmental factors which supported or thwarted members' autonomy, competence, and relatedness (i.e. their BPNs). I answered Question 2a in Chapter 6 based on interview data and diary notes, and summarised significant aspects of members' motivational climates in five categories. These categories were: i) the NGO approach and subsequent project relevance ii) support structures, iii) members' management capabilities, iv) the WPC–user relationship, and v) village cultural factors (i.e. pride and status associated with the role). I discuss summary findings regarding each of these categories below.

The NGO approach was a significant aspect of members' motivational climates. Water scarcity in each village meant water supply projects were beneficial and experienced as relevant by members, and this drove members to take on management responsibilities. Members and community leaders reflected positively on NGO approaches which gave community actors the opportunity to articulate their priorities. When this was the case, the NGO approach (listening to and responding to priorities) was coupled with project relevancy. Members and animators contrasted water supply projects with other NGO-

delivered projects, which were described as imposed or less relevant. According to participants, these projects did not elicit the same sense of care as RWS, and in some cases the projects had failed. Thus, approaches which contributed to the satisfaction of members' BPNs, particularly their need for a sense of autonomy, were described favourably by participants. In Phalombe communities, CADECOM staff, village leaders, and some members attributed project relevancy to the ABCD process that was used to frame the projects. However in ABCD-framed projects, including RWS, most WPC members had not participated in the ABCD process. Hence, the impact of ABCD was largely limited to project inception phases rather than their ongoing management.

In addition to the NGO approach, accessible local support mechanisms including member–member support, leadership support, and technical support from area mechanics were identified as positive aspects of members' motivational climates. Functional member–member relationships facilitated coordination and collaboration amongst WPC members, and for some (e.g. the chair in Nkhumba) the collaboration also made the role enjoyable. Leadership support from village heads and animators gave members ways of resolving conflict, and a source of encouragement when dealing with social and technical challenges. The village heads also played an important role in establishing and socialising rules and norms of the water point with users. Regarding technical support, area mechanics were a critical backstop in terms of repairs and maintenance, particularly in the absence of ongoing district or NGO support. Consequently, village-level support structures provided an important element of BPN-support in members' motivational climates.

Leadership in Galufu and Chilaulo illustrated how local support structures could also be autonomy-thwarting. Controlling leadership styles in these villages had a negative impact on members' motivational climates. While members did not discuss village head leadership approaches, leaders themselves spoke of their influence on water management. Further, users explained they had no power or choice to express concerns with RWS management because the village head was involved in water point management and WPC selection. Hence, the leadership styles in Galufu and Chilaulo had a controlling effect on members' motivational climates, directly through their

overreach into management activities, and indirectly through their negative influence on WPC–user relationships.

The WPC–user relationship was a critical aspect of members' motivational climates in all villages. In Section 6.1 and Figure 19, I outlined a spectrum of WPC–user relationships, ranging from negative and oppositional WPC–user relationships in Chilaulo, to positive and collaborative WPC–user relationships in Nkhumba (and to a lesser degree Nanchopwa). Other WPCs were between these extremes. BPN-supportive WPC–user relationships were characterised by users being willing to collaborate (e.g. tariff payment, rule adherence, labour support) with management efforts, and user trust and confidence in members' management. Users' cooperation increased members' ability to manage the water points and meant members felt supported by the users. As the members' capacities to manage the water point increased, this led to further user collaboration. Hence, a positive WPC–user relationship supported the satisfaction of both members' and users BPNs. By contrast, user mistrust or hostility meant collaboration was difficult, and it compromised members' ability to manage the water points, leading to further challenges to user trust and confidence. In this scenario, I concluded the WPC–user relationship thwarted both members' and users' motivational climate.

Members' motivational climate was positive when it supported their capacity to meet the requirements of the role. As I discussed in Section 6.4.1, this included members' capacity to ensure minor repairs were carried out. Members in all locations were able to fund and carry out minor repairs using their own skills, or drawing on area mechanic expertise. Related to this point, members' training, adequate WPC savings (or the ability to collect funds when needed), and access to an area mechanic were important contributors to members' capacities to complete such repairs. These elements meant repairs were completed in under 24 hours in most cases.

At all locations, members' management capabilities did not extend to major works. Members had few options to address infrastructure challenges that were beyond the expertise of an area mechanic, or more importantly, beyond the financial capacity of

WPCs. The example in Galufu illustrated the difficulties if a borehole required re-drilling. The Galufu WPC had few opportunities for assistance, and this led to amotivation experiences. More generally, high costs and complex equipment requirements, coupled with an absence of NGO and district support, meant all WPCs were isolated and had a limited capacity to respond to such challenges. These findings also point to the importance of a well-installed borehole to minimise such challenges. In this respect, the challenges associated with major works were not supportive of members' motivational climates.

Finally, I argued that the hierarchical context in the village shaped members' pride and status motives. Consequently, the hierarchical nature of the cultural context was a significant element of members' motivational climates. If an individual was on the WPC, this differentiated them from other members of the community and increased their status. For some WPC members, this resulted in a in a sense of obligation to serve or repay others in the community. For others, becoming a member of the WPC was experienced as a mandate to lead. Feelings of status associated with the position meant several members were entrenched in their roles, with two members saying they would remain on the WPC as long as possible. In this regard, the hierarchical village context was a moderately controlling factor and shaped extrinsic motivations. The second part of Research Question 2 shifted from a broad examination of the salient aspects of members' motivational climate to a focus on ABCD approaches, and their effects on motivational climate and motivation more generally rather than specifically the RWS context. I summarise findings from this research question below.

2b. From a theoretical perspective, does ABCD support autonomous motivations, and if so, how?

I answered this question in Chapter 7. This chapter formed part of a submission to an academic journal which has been accepted for publication pending minor revisions. This question was founded in findings in the grey and academic literature – that the use of ABCD in community development applications was motivating for participants (Kretzmann & McKnight, 1993; Mathie et al., 2017; Mathie & Cunningham, 2003; UN-

Habitat, 2008; Willetts et al., 2014). However, the analysis of motivations in the ABCD literature has lacked critical analysis and a theoretical foundation.

In Chapter 7, I confirmed that ABCD principles and tools were consistent with BPN-supportive practice, and hence the approach is supportive of autonomous motivations. In responding to the research question, I used SDT to test the motivational mechanisms and claims of ABCD. I first established that the philosophical underpinnings of SDT and ABCD are largely congruent, despite potentially conflicting research paradigms – predominantly qualitative approaches in ABCD and quantitative in SDT. Central to both frameworks is a critique of hegemony and a concern with motivation or change driven 'from within'. In this sense, both SDT and ABCD value autonomy. This is reflected in the role of practitioners as facilitators rather than directors of change in both SDT and ABCD practice. Further, I argued that the tools used in the ABCD process were consistent with BPN-supportive practice. These tools include appreciative interviews, visioning, asset mapping, and planning and action phases. These tools are supportive of autonomy, competence, and relatedness as defined in SDT. Hence, I concluded ABCD is, in theory, supportive of autonomous motivations.

Recognising that the practical application of ABCD will vary between organisers and practitioners, I also outlined the relevance of an SDT framework and SDT tools (i.e. questionnaires) to evaluate whether specific ABCD programs support autonomous motivations and if so, how they do so. I argued that, using SDT questionnaires, programs could be evaluated according to the degree to which they support or thwart BPNs. For example, the Health Climate Questionnaire (CSDT, 2020; Williams et al., 1996) evaluates the motivational climates of health interventions and is relevant to evaluate the degree a practitioner (e.g. NGO or government actors) acts in a BPN-supportive manner. The Basic Psychological Need Satisfaction and Frustration Scale (CSDT 2020; Chen et al., 2015; Deci & Ryan, 2000) evaluates the level of participants BPN satisfaction in regards to a context or role. The types and expressions of participants' motivations can be assessed qualitatively using the SDT continuum or quantitatively via tools such as the SRQ used in this thesis (Sheldon et al., 2017). Finally, I argue that the SDT continuum (Figure 2) also serves as a relevant tool for determining how motivations change with

time, and specifically how behaviours relevant to ABCD programs become more or less internalised. I concluded such approaches would strengthen the theoretical base, practice, and evaluation of ABCD interventions.

3. How did the quality of WPC members' motivations influence their management efficacy?

Members' motivation quality affected their management effectiveness. Committees with overall autonomous motivations had internalised WPC management responsibilities and were more effective in their management approaches than WPCs who experienced controlled motivations.

I used findings based on interviews, diary notes and the water point survey to answer this question in Chapter 8. As shown in Table 16, I first summarised WPCs' effectiveness based on the following indicators: savings; spare parts stock; tariff collection and financial records; repair times; the enforcement of rules; proactive approaches; transparency practices; WPC–user relationships; and the WPCs' persistence in response to challenges. Based on my assessment of each WPC, I identified three categories of WPCs: those with high effectiveness (Nkhumba and Nanchopwa); those with moderate effectiveness (Helema and Malekuwa); and those with low effectiveness (Chilaulo and Galufu). Once I established these categories, I then revisited and drew links with WPC motivations discussed earlier in Chapter 5.

I showed that high effectiveness WPCs Nkhumba and Nanchopwa had, overall, low-to-moderate autonomous motivations. Members' autonomous motivations were illustrated through the internalisation of the WPC roles and responsibilities, including internalisation of tasks such as scheduled maintenance and regular tariff collection. Notably, autonomous motivations were demonstrated through proactive approaches to management. These WPCs spent their savings to improve the water point and described these initiatives as important for hygiene (i.e. identified motives), or interesting (i.e. intrinsic motives). Autonomous motivations also reflected in the WPC–user relationship. Rather than feeling controlled by the WPC–user relationship as other

committees were, Nkhumba members navigated challenges with users in an autonomy-supportive manner.

In Section 8.3, I concluded low effectiveness WPCs (Galufu and Chilaulo) had low-to-moderate controlled motivations. It was often unclear why members in these locations continued in their roles. I proposed their low-quality motivations were in part due to poorly installed water points and autocratic village leadership. The controlled motivations in Chilaulo and Galufu were reflected in an absence of proactive approaches by the WPC, their low savings and a shortage of spare parts. Further, user reports were mixed or negative regarding both the committee transparency and performance. Although committee motivations overall were controlled, there was still evidence of autonomous motives. For example, Charles in Galufu continued to participate and repair the water point in part to support elderly users, while members in Chilaulo continued to participate as they valued access to water. However, the members' controlled motivations in both Chilaulo and Galufu meant their motivation to participate in the WPCs was tenuous, and consequently effectiveness was low.

I concluded that members in Helema and Malekuwa had mixed effectiveness, despite experiencing low-to-moderate autonomous motivations like Nkhumba and Nanchopwa. In Section 8.4, I explained Helema and Malekuwa WPCs were inconsistent in their approaches to management responsibilities. Both these WPCs had engaged the area mechanic to assist with maintenance, and Malekuwa had completed repairs within 24 hours. Other tasks were only partially internalised and were often associated with feelings of "should". For example, tariffs were collected intermittently, and as a result these WPCs had less savings and spare parts compared to more efficacious WPCs. In addition, user reports were mixed regarding transparency practices. Hence, although members had endorsed participating in the WPC more broadly, the internalisation of specific committee tasks was variable. I was unable to determine definitively why this was so, and proposed four possible reasons. These were: i) lower competency of members (several members had not received the original training); ii) controlling pressures such as feelings of compliance which compromised members' autonomous motivations; and iii) because of lower levels of identified motivations compared to

Nkhumba and Nanchopwa. I also proposed that iv), mixed effectiveness was somewhat expected as members experienced both autonomous and controlled motivation types. However, in the absence of further supporting data, these conclusions remain speculative.

After presenting and discussing findings in response to the research questions in Chapter 5 to 8, I then discussed the implications of my doctoral research. These are summarised below.

Implications summary

Based on my findings, I argued it was crucial to consider motivations as part of efforts to improve the sustainability of RWS. I outlined six implications from the findings in Chapter 9.

First, I concluded that SDT provided a theoretical basis to determine members' motivation experiences and motivation types. I argued the RWS literature has considered motivations simplistically. By using SDT as a framework, I showed WPC members experienced a diversity of motivation types regarding their reasons for participating in WPCs. These motivations varied between members in both breadth (types) and depth (level at which each type was experienced). These findings provided a more nuanced picture of members' motivations than what is currently available in the RWS literature.

Further, understanding motivation quality has implications for management effectiveness and the consequent RWS sustainability. It is possible to make sustainability predictions based on the quality of members' motivations. SDT research has shown more autonomous motivations are associated with volitional behaviour and performance outcomes across a range of thematic areas and cultures, so it is expected similar conclusions are relevant for CBM applications. The application of SDT in the RWS context provides a more complete picture of why sustainability approaches may be effective. Namely, SDT provides explanatory power for determining how the efficacy of

CBM design elements (e.g. accountability, training), which aim to foster RWS sustainability, are mediated by members' motivations.

The second implication was that RWS interventions and programs should be evaluated based on the degree to which they support or thwart members' BPNs. I proposed existing SDT frameworks and tools can be adapted to evaluate motivational climates and BPNs in CBM. I argued that using a motivational lens provides a critical, human-centric approach to RWS sustainability which goes beyond the largely technocratic discourse which dominates RWS literature. An SDT framework emphasises the importance of members' experiences of RWS programs. It focuses on members' central BPN satisfaction or frustration, and how this reflects in their persistence and effectiveness in relation to management responsibilities. The remaining implication of the findings discussed in Chapter 9 were concerned with designing for autonomous motivations which I discuss below.

In the third implication, I concluded that the autonomous motivations of WPC members were supported by: the relevance of RWS projects to community priorities, and the integration of meaningful choice into project framing and design. I argued that relying on a 'set and forget' approach to motivation in inception phases was inappropriate. Instead what was required were approaches which supported members' capacity to satisfy their BPNs long after the project had been implemented. Members' motivations were likely to be eroded as time passed after inception phases, as the novelty of management faded, and challenges arose.

With this context, I outlined specific approaches which integrated BPN-supportive practice into ongoing CBM design. These included the remaining implications, the fourth being – establishing and revisiting a shared agenda between WPCs and users. Fifth, the importance of technical and administrative support structures for members, delivered in a BPN-supportive manner. The sixth and final implication cited the importance of well-installed boreholes and external support for members in the face of challenges associated with major works or repairs beyond WPCs' capacity. In the

following section I reflect on the limitations of both my research findings and subsequent implications,

10.2 Reflections on the research and unanticipated limitations

In this section I start by discussing two unanticipated limitations of my research findings, namely, incongruence between members' broad motivations to participate and their task-specific motivations, and inconsistencies between SRQ and qualitative data. These aspects of the data were not considered in the research design process and surfaced during the analysis phase. In hindsight, they hindered the formation of a more complete picture of motivation constructs relevant to WPC members.

My findings could have been strengthened if I had made a clearer distinction between: members' motivations and their motivational climate at a general (domain) level; and their motivations and motivational climate at the more specific task level. In the case of moderately performing WPCs, there was some dissonance between members' motivations and motivational climate at the domain level and the task level. For example, the WPC members had internalised the value of an improved water supply and valued their participation in the WPC (domain level), but had limited internalisation regarding specific tasks such as regular tariff collection (task level). Although I discussed these differences in the research findings, interactions between the two levels were not explored in detail and hence the relationship between levels lacked clarity. In light of my research findings and differences between the two levels, a more comprehensive picture of motivation constructs could be achieved by exploring motivation constructs at different levels and their interrelationships. For such an exploration Vallerand's hierarchical model of motivational experience (Vallerand, 1997) would provide a useful starting point.

Secondly, in retrospect, I see that the research would have benefited from the integration of more discussion with participants in the SRQ process, or from follow-up interviews after the analysis of the SRQ. As discussed earlier in Section 4.7, I was conscious of the one-way nature of the SRQ. To build rapport with participants, I

completed interviews before asking participants to complete the SRQ as part of a later visit to each village. This meant the two data collection/creation approaches were not integrated until the analysis phase. As expected, there were inconsistencies between SRQs and interview responses, though the reasons for these inconsistencies remain uncertain. For example, some members did not mention intrinsic motivations in interviews, but indicated they were significant in their SRQ response.

Further dialogue around such inconsistencies at the time of data collection would have provided a more detailed picture of members' motivation experiences and the motivational climate. It would also have enabled a more nuanced comparison of the SRQ method and findings with the interviews.[112] For those adopting a similar mixed method approach, I would recommend integrating dialogue informed by interview findings into the SRQ process. Or, alternatively, consider follow-up interviews once SRQs and interviews have been analysed. Unfortunately, time and budget constraints meant I was unable to complete the latter.

In sum, on reflection the research inquiry and analysis would have benefited from a deeper exploration of linkages between domain and task motivations, and follow-up interviews after SRQs had been completed. These unanticipated limitations are in addition to the (anticipated) design limitations I discussed in Section 4.7. They included the small sample size, self-selection of WPC members, language barriers between community participants and myself, and the absence of a gender lens in the analysis. Hence, despite the depth of inquiry in this research, there are further aspects to be explored which would provide a more complete explanation of motivation constructs in CBM.

10.3 Key contributions

This thesis is the first application of SDT in an RWS context. Motivations have been either neglected or considered simplistically in RWS literature and in practice, despite

[112] For example, "I noticed you indicated participation in the WPC was interesting but did not mention this in interviews. Can you elaborate on what aspects you found interesting and why?".

being central to the success of CBM models. My research has added to what is known about WPC motivations. The RWS literature has assumed that WPC members are motivated primarily by the benefits they will receive as water users. Although my findings confirmed the importance of this particular motive, it was one of many motives which drove members' participation. By using SDT theory to conceptualise and evaluate motivation types, I identified a range of both autonomous and controlled motives experienced by WPC members in Malawi. Although both motivation categories drive behaviour, they vary in quality, with autonomous motivations compared to controlled associated with feelings of volition, greater persistence of behaviour, and effectiveness outcomes (Deci et al., 1999; Deci & Ryan, 2000; Patall et al., 2008). Hence, a refined understanding of WPC members' motivations is necessary to understand their experiences and performances.

I have also provided constructive critiques of RWS/CBM design based on the degree to which they support or thwart members' autonomy, competence, and relatedness (BPNs). This is important, as RWS practitioners can use this knowledge to predict whether programs will support or thwart autonomous motivations and if so, how they will do so. The findings show that WPC members' BPNs can be supported by: the integration of members' voice and choice in initiating RWS projects, ensuring that members have the skills needed to complete O&M, ensuring WPCs have access to external support, and through a collaborative WPC–user relationship. The presence of these conditions supported more internalised, autonomous motivations for members. I argue approaches which integrate BPN support are an important contribution in efforts to improve the sustainability of the CBM model.

In addition, this thesis also contributes to the practice of ABCD. Articles in the grey and academic literature argue that the ABCD approach is motivating for participants (Kretzmann & McKnight, 1993; Mathie et al., 2017; Mathie & Cunningham, 2003; UN-Habitat, 2008; Willetts et al., 2014). However, to date there has been no theoretical underpinning to test motivational mechanisms or critique motivational claims. In this thesis, I highlighted that the principles and practices of ABCD are largely consistent with BPN-supportive practices, and that it therefore encourages autonomous motivations.

I also explained three ways in which SDT principles and tools can be used to enhance BPN-supportive aspects of ABCD practice, and to evaluate the motivational claims of ABCD-based interventions. First, SDT can evaluate the degree to which ABCD processes supported the autonomy and competence of participants using principles of BPN satisfaction, and tools such as motivational climate or BPN satisfaction questionnaires. Second, SDT can be used to evaluate the nature of participants' motivations in response to ABCD processes using qualitative approaches and the SRQ. Third, the SDT continuum, in combination with the use of methods to determine motivation types, can conceptually track changes in participants' internalisation of new behaviours (e.g. O&M responsibilities in the case of RWS) with time.

Finally, ABCD could provide a useful framework to operationalise BPN-supportive practice into CBM. I argued it offers a relevant approach for using both at the inception of CBM-based programs, and as a framework to structure ongoing management in a BPN-supportive manner. Specifically, it can be used as a framework to review goals, roles, and management practices relevant to RWS management, in a manner which supports autonomous motivations. However, WPCs will still need external support to navigate such processes and address barriers which are beyond their capacities to navigate. Having described the contribution of this research to the fields of RWS and ABCD, in the following section I discuss future research directions.

10.4 Future directions

The research findings and their implications presented in this thesis raise additional questions for future research and RWS practice. In this section I discuss areas for further research, and application in RWS project design.

In the implications chapter, in Section 9.3, I identified approaches to support members' autonomous motivations and enhance CBM design. They were: a shared agenda between users and WPCs, changes to the delivery of local technical and social support using BPN-supportive practices, and support for WPCs to address major works.

Although I argued these approaches are likely to support more autonomous motivations, further research is required to validate this position.

In addition, the limited sample size used in this thesis warrants the application of SDT to a larger number of WPCs. Additional research into WPC motivation experiences, and into important aspects of the motivational climate relevant to Malawi and beyond, would provide a more complete picture of motivation constructs than what I have presented in this thesis. This could include identifying additional elements of the motivational climate and their relative importance to members' BPN satisfaction or frustration. A larger sample size could also enable a more comprehensive assessment of CBM design, including an exploration of how certain tasks associated with the WPC role shape members' motivations. In addition, a larger sample could build on the preliminary findings regarding gendered aspects of motivations I touched on in this research.

As I discussed in the limitations in Section 4.7, extending the sample size to include members who had left or were inactive would also provide additional nuance to our understanding of BPN-thwarting aspects of the motivational climate. Such an inquiry would enable a finer grained analysis of which elements of CBM program design are important for BPN satisfaction.

Further, a larger sample would also enable an investigation of the significance of organisational approaches to CBM. In this research I argued that the ABCD approach in Phalombe established the relevancy of RWS and led to a positive relationship between community actors and CADECOM. A wider analysis of a range of participatory approaches (including ABCD), could isolate which elements of approaches are more, or less critical for members' BPN satisfaction.

Finally, a larger sample would also mean more definitive links between motivation types and management effectiveness could be drawn. For example, statistical correlations could be drawn between the prevalence of motivation types and management effectiveness. Such findings would answer *if* autonomous motivations are more likely to support management effectiveness. Such findings would complement the qualitative

approach used in this research which focused on *how* the motivation quality influenced management effectiveness.

Regarding ABCD, the approach was used to frame RWS interventions in the case study, and did extend to shaping ongoing management approaches. Although I concluded ABCD was consistent with BPN-supportive practices more generally, it remains untested as an approach in CBM beyond project inception. I see value in testing the relevance and motivational potential of ABCD in a CBM context in order to determine if the BPN-supportive principles in ABCD are effective in driving ongoing autonomous motivations in WPCs.

An important area for future research is to compare alternatives to existing CBM models of RWS management through an SDT lens. As discussed in Chapter 1, there are increasing criticisms of the CBM, with calls to modify the model (i.e. CBM plus), and calls to consider different management approaches such as self-supply, or private-sector managed water supply (Harvey & Reed, 2007; Lockwood & Le Gouais, 2011; Moriarty et al., 2013; Sutton, 2006). It is pertinent to consider how different approaches are experienced by participants, and how they affect motivational quality. For example, does self-supply result in different levels of BPN satisfaction than CBM, and why? Is CBM experienced as controlling or autonomy-supportive in different contexts? Such inquiries can help inform decision-making and appropriate choices for RWS delivery models. It would also offer an alternative lens to existing critiques of CBM.

This research focused only on the motivations of WPC members, though the motivations of other actors relevant to CBM are also important. As I illustrated in Figure 1, a RWS system comprises a range of networked actors whose motivational climates and motivations are also important for sustaining RWS. These actors include WPCs, users, local government staff, area mechanics, and NGO actors. The importance and interdependency of relationships between these actors was demonstrated in the findings in this thesis. For example, in Section 6.1, I argued that the extent to which autonomy was supported or hindered in the WPC–user relationship was critical in determining whether users cooperate with management efforts. Hence, the autonomy-

supportive approaches of one actor in an RWS system will influence others in the system. Because of this, an analysis across a broader range of actors is important for determining the quality of different actors' motivations, and the relationship between motivations of different actors and its effect on other actors.

Finally, findings from this research point to possibilities to integrate a wider range of autonomous motivations into future CBM designs. Intrinsic motives such as interest, the enjoyment of working with others, and learning, were salient autonomous motivations for members. However, these motivations have received limited focus in the RWS literature and RWS practice. The limited focus on intrinsic motives raises questions about how CBM might be re-designed to integrate such intrinsic motives. These questions include 'how could CBM be made more interesting?', and 'how could CBM include processes that encourage and support those who are intrinsically motivated to participate in management efforts?'.

10.5 Concluding remarks

Malawi, like many other low-income countries, has seen significant improvements in water access for the rural population over the last 15 to 20 years. During this period, the majority of rural water has been managed under a CBM model. Access to safe water has brought a range of health, economic and education benefits. However, maintaining RWS services is a persistent problem, and the gains in water access and associated benefits are at risk.

The intent of this thesis was to determine what drives WPC motivations and what 'designing for motivations' has been and could be in the RWS sector. I illustrated how SDT can deepen our understanding of members' motivational experiences, and how SDT can inform design approaches which support their autonomous motivations. SDT has been well tested across a range of thematic areas and cultures, and it provides a framework which can be used to conceptualise and evaluate motivation constructs in CBM. It also provides an alternative human-centred perspective to sustainability, to build on the largely technocratic approach prevalent in the RWS literature. This study

also showed the importance of RWS research which draws on other disciplines, such as psychology, to support a more nuanced understanding of how people interact with RWS infrastructures and systems.

The findings in this research highlighted the importance of context of RWS programs and RWS design approaches which support the BPNs of those responsible for water management. Supportive motivational climates are more likely to facilitate members' feelings of autonomy, competence, and relatedness, associated with their roles. In turn, this will bolster their effectiveness when performing their management practices. Such findings have implications for improving the management and hence sustainability of safe water sources and the associated well-being benefits.

Appendices

Appendix A Acknowledgement of publication and statement of contribution

This appendix includes declarations about aspects of the thesis which draw from journal articles I have authored as part of this research. The declaration is included to fulfil UTS Graduate Research School requirements.

Sections 2.1, 2.2, 2.3 and the majority of Chapter 7 are based on a journal article submitted for publication and currently under review. The majority of the chapter material is taken verbatim from the journal article. Minor modifications and additions have been made to assist with clarity. The journal reference is:

Cunningham, I., Willetts, J., Winterford, K., & Foster, T. (2021). Interrogating the motivation mechanisms and claims of asset-based community development with Self-Determination Theory. *Community Development*.

I led the design and analysis and wrote the submission. Co-authors Juliet Willetts, Keren Winterford and Tim Foster reviewed and provided feedback on the draft submissions.

Production Note:
Signature removed prior to publication. 12/7/21

Ian Cunningham **Date**

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Tim Foster **Date**

Appendix B Summary of research participants by category, location and gender

Appendix Table 1: Research participants by role and location

	PARTICIPANT TYPE AND NUMBER										
	Village animators		Water committee members		Users		Village head	CADECOM	Area mechanics	Government / NGO	TOTAL
SITE	M	F	M	F	M	F	Gender n/a	Gender n/a	Gender n/a	Gender n/a	
CADECOM national	-	-	-	-	-	-	-	1	-	-	1
CADECOM Blantyre staff	-	-	-	-	-	-	-	4	-	-	4
District government staff	-	-	-	-	-	-	-	-	-	3	3
Other RWS NGO staff	-	-	-	-	-	-	-	-	-	3	3
AACES Helema	1	1	1	1	0	2	1	-	-	-	7
AACES - Malekuwa	1	1	1	1	0	2	1	-	-	-	6
AACES - Nanchopwa	1	1	1	1	1	1	0	-	-	-	6
Phalombe area mechanic	-	-	-	-	-	-	-	-	2		2
ICD – Galufu	1	0	1	1	0	1	1	-	-	-	5
ICD – Nkhumba	0	1	1	1	0	2	1	-	-	-	6
ICD - Chilaulo	0	0	0	2	0	2	1	-	-	-	5
Blantyre area mechanic	-	-	-	-	-	-	-	-	1	-	1
TOTAL KII	4	4	5	7	1	10	4	5	3	3	**49**

Appendix C Interview guides

Purpose:	This interview protocol is for WPC members
Date:	
Start / Finish Time:	
Interviewer name:	
Participant name, gender, phone (or other contact):	
Participant role / organisation:	
Location (including descriptors):	
Other relevant info?:	
Verbal / written consent?:	
Identified/ deidentified/ anonymous?:	
Copy of report and method?:	
Question #	Question
1	Can you tell me about the day the borehole was installed? What was that like for you?
2	What has been your role in the AACES/SBA/ICD project? When did you start your role? Were you involved in the WPC or SBA training? [if yes, what stands out from the training]
3	How did you come to be on the committee? [choice, voted, mandated]. How did you feel being selected?
4	Why do you continue to participate in the committee? What motivates you?
5	Can you tell me a significant high point/highlight since being on the WPC? *Why was this moment important to you? [continue to explore motives]* *[if relevant] How do you know the water committee is doing a good job?*
6	What are some of the challenges that stand out…?

	Despite the [challenge], you still continue in the role, can you tell me why? [continue to explore motives] *Do you feel supported in your role to address such challenges? Can you describe by who and why you feel supported?*
7	Can you tell me what being on the WPC involves in a typical month? Is there documentation to support this? i.e. maintenance etc.? [note, ask to view this at end of interview or later visit]
8	Have you been involved in other (non-SBA) water projects with your community, government or NGOs in the past? OR, Other committees prior to the WPC? If yes, could you give me an example? How was your experience of the SBA/ICD project different? If no, have you been involved in other committees or community projects? How was your experience of the SBA project different? [clarify who was involved, when and where the other water project happened, and what was involved]
9	Can you tell me what the water context was like before AACES/ICD?
10	What is it like now?
11	What role did you play in those changes?
12	Thinking about a scenario - Scenario: Now, if there was a [pump rod breakdown] can you explain what would happen?
13	If the repairs were beyond the capacity here, how would the WPC engage the government technicians or others to support? Do you have an example?
14	Thinking about the future - Does the WPC have a vision or action plan for the future? If yes, could I see it? Alternative: what are your future hopes for the WPC?
15	How is it being progressed?
16	Is there any final thoughts or feelings you'd like to share? [note I'd like to keep discussing water point sustainability with you and others…..] [note with WPC members follow-up visit for SRQ].

Purpose:	This interview protocol is for WPC users
Date:	
Start / Finish Time:	
Interviewer name:	
Participant name, gender, phone (or other contact):	
Participant role / organisation:	
Location (including descriptors):	
Other relevant info?:	
Verbal / written consent?:	
Identified/ deidentified/ anonymous?:	
Copy of report and method?:	
Question #	Question
1	We have heard from other users that trust/transparency is important for users in regard to the WPC and water management. How do the WPC practice this?
2	What interactions do you have with the WPC?
3	Are you able to provide feedback on the WPC - what is working? What is not?
4	When was the last breakdown, and how long was it for?
5	Are you happy with the water supply? Why/Why not?
6	Do you have recommendations to improve the management of water supply?
7	Other comments?

Purpose:	This interview protocol is for animators
Date:	
Start / Finish Time:	
Interviewer name:	
Participant name, gender, phone (or other contact):	
Participant role / organisation:	
Location (including descriptors):	
Other relevant info?:	
Verbal / written consent?:	
Identified/ deidentified/ anonymous?:	
Copy of report and method?:	
Question #	Question
1	What has been your role in the AACES/A+ project? What is your role now?
2	Thinking about the past: - Are there particular key moments that stand out from the project? What happened? Why did you choose those?
3	How did they happen?
4	How has the community worked together since AACES?
5	Is this different from the past? How?
6	Thinking about other projects you have been involved in - Have you been involved in other (non-SBA) projects with government or NGOs in the past? If yes, could you give me an example? How was this experience of the SBA project different? If no, have you been involved in other committees or community projects? How was this experience of the SBA project different?

7	What changes in the water supply have you observed since AACES?
8	How did these changes happen?
9	How has the management of water changed?
10	Is there a vision for water in the future? What is it?
11	How are you progressing it?
12	I had two last questions. Would you describe AACES as a government, community or CADECOM project? Why?
13	Is there any final thoughts or feelings you'd like to share?

Purpose:	This interview protocol is for village heads. Note adjustments made depending on if village was an ICD or AACES village.
Date:	
Start / Finish Time:	
Interviewer name:	
Participant name, gender, phone (or other contact):	
Participant role / organisation:	
Location (including descriptors):	
Other relevant info?:	
Verbal / written consent?:	
Identified/ deidentified/ anonymous?:	
Copy of report and method?:	
Question #	Question
1	What has been your role in the AACES/ICD project? What is your role now?
2	Thinking about the past: - Are there particular key moments that stand out from the project? Why did you choose those?
3	How did they happen?
4	How has the community worked together since AACES/ICD?
5	Is this different from the past? How?
6	Thinking about other projects you have been involved in - Have you been involved in other (non-SBA/non-ICD) projects with government or NGOs in the past? Can you give an example? Reflecting on you, how is your involvement different in this AACES/ICD program?
7	If yes, could you give me an example? How was this experience of the SBA/ICD project different?

	If no, have you been involved in other committees or community projects? How was this experience of the SBA/ICD project different?
8	What changes in the water supply have you observed since AACES/ICD?
9	How did these changes happen?
10	How has the management of water changed?
11	Is there a vision for water in the future? What is it?
12	How are you progressing it?
13	I had two last questions. Would you describe AACES/ICD as a government, community or CADECOM project? Why?
14	Is there any final thoughts or feelings you'd like to share?

Purpose:	This interview protocol is for CADECOM staff to discuss SBAs and RWS
Date:	
Start / Finish Time:	
Interviewer name:	
Participant name, gender, phone (or other contact):	
Participant role / organisation:	
Location (including descriptors):	
Other relevant info?:	
Verbal / written consent?:	
Identified/ deidentified/ anonymous?:	
Copy of report and method?:	
Question #	Question
1	What has been your role in the AACES project? What is your role now?
2	When did you start using SBAs? Why do you personally use an SBA approach?
3	What changes in yourself have you seen or felt since you started using SBAs? (For example, how you see yourself, your role or others?)
4	Thinking about other projects you have been involved in - What was different to the SBA approach compared to others you've been involved in? [at a community level] Please give me an example. (Why do you think the SBAs has had the effect it did?)
5	Again, comparing it to other projects you have worked on - how has it
6	Is there a specific example or highlight that stands out for you in AACES or A+?

	(I'm also interested in the changes in mindset. Also, interested in the changes in relationships)
7	In your experience, how did AACES/SBAs impact on motivations of participants? Why do you think it had this impact?
8	I want to ask specifically about the impact of SBAs on RWS and its management: How have SBAs impacted on management of RWS? Can you give examples? (Note for interviewer: Need to separate water committee training from SBA training.)
9	Again, how is this different from other RWS projects? Please give specific examples.
10	I'm interested in how SBAs impact on the sustainability and evolution of RWS. From your experience, why might the approach make RWS more or less sustainable?
11	Can you give me an example of a WPC that comes to mind when you think about sustainability? How are they unique?
12	I'm interested to learn of relational changes associated with SBAs. How do the community representatives perceive CADECOM? What role do they see CADECOM as playing?
13	How has this project changed relationship between WPC [or community] and government?
14	Is there any final thoughts or feelings you'd like to share?

Appendix D Codebook

Appendix Table 2: Codebook used for qualitative coding

Code	Long Description	Inclusion	Exclusion	Example
A1 BPN need	Parent/aggregate of A1.1 and A1.2	n/a	n/a	n/a
A1.1 BPN need satisfaction	Parent/aggregate of A1.1.1 to A1.1.4	Parent/aggregate of A1.1.1 to A1.1.4	n/a	n/a
A1.1.1 BPN autonomy satisfaction	Autonomy includes feeling of being the origin of one's behaviour, as opposed to feelings of being controlled or pressured (Ng et al., 2012). A feeling of being self-governed or undertaking a task volitionally (Ryan & Deci, 2017).	Key words/phrases/concepts: - My choice, wanted to, freedom to…, option, I decided, reason, I thought, ownership, influence, I had opportunity, I expressed, be myself, I have a say, I'm comfortable, I accomplished for myself, I chose, I could have…, It's who I am, I control, independence, It's up to me, its valuable, its useful, free to…, relevant, solve problems, make choices, accepted - Note, [we] can be substituted for [I] where appropriate. - Includes when WPC members able to exercise agency in the WPC	Refer to A1.2.1. Not simply when a WPC acts, their action must be volitional.	"So for me that gives ownership of the project and [I] take care of it." "…just our personal choice to serve the community." "I was very pleased to be elected in the WPC. I wanted to strengthen issues of sanitation and hygiene around the borehole."
A1.1.2 BPN competence satisfaction	Feeling effective, able to effect change on environment. Pursuit of mastery and challenges optimal for their capacities (Ryan & Deci, 2002). Able to express ones capacities (Ryan &	Key words/phrases/concepts: - I know, I guess, confident, skills, happy, ability, competence, achieve, understand, succeed, satisfied with performance, accomplish, effective, it gives me confidence, I am better than	Refer to A1.2.2.	"Therefore, everyone felt excited because we were involved in the planning of projects meant to assist us, so we really did feel smart."

Code	Long Description	Inclusion	Exclusion	Example
	Deci, 2002). Able to execute WPC duties.	others, can take on the challenge, have done well, I'm good at it, we have had no problems, unique skills, I'm capable, I can…., I am able to…, certain		"We are able to dismantle the borehole and assemble all the pieces together again." "[We] discovered what we had and what we are capable of. That gives ownership of the project and we take care of it knowing that we contributed." "We learnt from the former committee."
A1.1.3 BPN relatedness satisfaction	Feeling understood respected and cared for by others, sense of trust towards important 'other' regarding the behaviour (Ng et al., 2012; Ryan, Patrick, et al., 2008) (e.g. water point management). Sense of belongingness (Ryan & Deci, 2002). Key relationships include other members, users, village leaders, NGO partners, or government staff.	Key words/phrases/concepts: - Accept, comfortable, welcomed, cared for, like (people), liked, get along with, friendly, together, trust, reliable, listened, respected, understood.	Refer to A1.2.3. Note, some working relationships may be present but unimportant.	"We are volunteers but since we have the trust of the people and we do the work to the satisfaction of everyone in the community, we keep on moving." "I knew a lot of people are trusting me." "And the people were really happy with the efforts we had brought in." [also competence] "The people who brought this borehole to us. They clearly understood our problems."

Code	Long Description	Inclusion	Exclusion	Example
A1.1.4 BPN other satisfaction	When need satisfaction is evident but the type is not clear.	n/a	n/a	n/a
A1.2 BPN need frustration	Parent/aggregate of A1.2.1 to A1.2.4	Parent/aggregate of A1.2.1 to A1.2.4	n/a	n/a
A1.2.1 BPN autonomy frustration	Autonomy frustration is equivalent to heteronomy. Feeling of being controlled or pressured by a force other than the self. WPC members may feel pressured by an external other or place pressure on themselves.	Key words/phrases/concepts: - I had to, not my choice, I was forced, pressured, I didn't want, I had no opportunity, I felt controlled, time constrained, decision made for us, conform, I had to…, I was expected to, forced to, incapable, unable, helplessness (lack of choice), not in control, imposed, no choice, irrelevant - 'We' can be substituted for [I] where appropriate	Refer to A1.1.1.	"It's the people who choose the committee, so they have no choice but to listen to us and lead them." "It happens that others [NGOs] just impose the project, as a result we hardly feel ownership and those things do not sustain. "
A1.2.2 BPN competence frustration	Feeling ineffective, unable or ill-equipped to effect change on environment. Tasks relevant to WPC are either overly difficult or boring.	Key words/phrases/concepts: - Not recognised, not capable, unskilled, inability, failed, inadequate, incompetent, don't accomplish anything, I don't understand, I struggled, I can't…, struggled with…, not easy..., lack, doubts, not possible to…	Refer to A1.1.2	"We would like to achieve more on the visions but the water source that is available is limiting some of the activities." "We cannot manage on our own to purchase a solar pump." "Obviously we are trained, but not trained to handle serious problems... for those we need help." [NB. These are also coded to motivational climate]

Code	Long Description	Inclusion	Exclusion	Example
A1.2.3 BPN relatedness frustration	When WPC members felt disrespected, or not valued by important others. An absence of trust in the relationship. Key relationships include other members, users, village leaders, NGO partners, or government staff.	Key words/phrases/concepts: - Don't like (people), not close to (person), unfriendly, conflict, abuse, insult, imposed, mistrust, accuse, disrespect, excluded, ignored, blamed, did not listen…, did not care…	Refer to A1.1.3	"We do have the authority but honestly we are afraid to express this authority." [also competence and relatedness frustration]." "People insult the people participating on the WPC with either abusive words or allegations."
A1.2.4 BPN other frustration	When need frustration is evident but the type not clear.	n/a	n/a	n/a
A2 MotCli (MotCli = motivational climate)	Parent/aggregate of A2.1 and A2.2	Parent/aggregate of A2.1 and A2.2	n/a	n/a
A2.1 MotCli motivation support	Parent/aggregate of A2.1.1 to A2.1.4	Parent/aggregate of A2.1.1 to A2.1.4	n/a	n/a
A2.1.1 MotCli autonomy support	When participant describes the social context, program context, an activity, or action of another individual (e.g. members, users, village leaders, NGO partners, or government staff) which does or could **positively** shape members' experience of **autonomy** with respect to water point management.	Key words/phrases/concepts: - May be co-located with items coded to A1.1.1 (e.g. because of X I was able to choose…) or could be observed/inferred. - May be part of task design itself (e.g. task is inherently interesting) - Had choices / options, able to choose, encouraged questions, voiced of aspirations/needs, emphasised interesting or challenging aspects of tasks, acknowledged boring aspects, absence of rewards or surveillance, absence of compliance, acknowledged perspectives, non-controlling support,	Refer to A2.2.1 Excludes any monitoring or feedback which do not integrate choice or understanding, or are experienced as controlling.	"The benefits of having operational water point at all times outweigh all the challenges..." "They consulted us, and gave us an opportunity to express our ideas on the project. " "Since we expected these things when we were being chosen into the WPC, we are not very much demotivated, and we move on."

Code	Long Description	Inclusion	Exclusion	Example
		encouraged self-initiation rather than pressure, rationale/reason for task is clear, supported creativity		"These projects were our priorities."
A2.1.2 MotCli competence support	When participant describes the social context, program context, an activity, or action of another individual (e.g. members, users, village leaders, NGO partners, or government staff) which does or could **positively** shape members' experience of **competence** with respect to water point management	Key words/phrases/concepts: - May be co-located with items coded to A1.1.2 (e.g. because of X I was able to do…) or could be observed/inferred. - 'Other' is confident in my ability, 'Other' helped me understand, training helped..., resources/assets/people/tools used to undertake the WPC role (e.g. area mechanics) - Elements which help WPCs pursue goals (e.g. meetings, mutual support). - Monitoring or feedback from people or task - Elements which clarify roles and responsibilities, or clarify expectations of behaviour and outcomes - When strategies (i.e. action plans) matched with skill/resources level	Refer to A2.2.2. Controlling feedback or support which is coercive or encourages compliance	"The difference between ADRA and CADECOM has been the training/skills given to the people handling the projects." "Through the chief, we gather the people and then the agenda of the meeting and give them the financial statement." "When I see that the borehole is poorly function or hygiene and sanitation of the water point is going down, I alert the WPC. We also mandated to temporarily suspend use of the borehole up until appropriate corrective action is taken." [competence support through structures]" "We have also approached the Area Mechanics to write us a quotation."
A2.1.3 MotCli relatedness support	When participant describes the social context, program context, an activity, or action of another	Key words/phrases/concepts:	Refer to A2.2.3	"People have trust in WPC because was elected by themselves, the community

Code	Long Description	Inclusion	Exclusion	Example
	individual (e.g. members, users, village leaders, NGO partners, or government staff) which does or could **positively** shape members' experience of **relatedness** with respect to water point management	- May be co-located with items coded to A1.1.3 (e.g. because X did y, I felt…), or could be observed/inferred. - 'Other' understands me, comfortable with, accepted by, listened to, I'm open with, trust, cares for me, shares with. - When an activity help people move in one direction, not in opposition to each other. - When the "other" provides empathy or support to understand the participant, e.g. uses their own language.		and not imposed by government." "Like what you are doing here it brings a lot of relationship. So what CADECOM can learn from them is to be coming back in the community and discuss our community's livelihood and the challenges we face. So that helps to come closer and become open to the staffs we are working with." "They [WPC] are so dependable." "They [WPC] publicly provide the financial report. So we know that the committee is operating honestly." "Members encourage one another."
A2.1.4 MotCli other support	When supportive motivational climate is evident but the BPN it impacts is not clear.	n/a	n/a	n/a
A2.2 MotCli motivation thwart	Parent/aggregate of A2.2.1 to A2.2.4	Parent/aggregate of A2.2.1 to A2.2.4	n/a	n/a
A2.2.1 MotCli autonomy thwart	When participant describes the social context, program context, an activity, or action of another	Key words/phrases/concepts:	Refer to A2.1.1.	"I know for several organisations just go straight to the community 'we are

Code	Long Description	Inclusion	Exclusion	Example
	individual (e.g. members, users, village leaders, NGO partners, or government staff) which does or could **negatively** shape members' experience of **autonomy** with respect to water point management.	- May be co-located with items coded to A1.2.1 (e.g. because of X I had no choice but to …), - Few/no choices or options, coercive, "… you should / have to do x this way" - Aspect of climate that warrants feelings of control or pressure - Tasks which are boring or lack rationale by design - Social/cultural aspects which require a certain behaviour and are experienced as controlling.		bringing in this and putting it there' and you can actually see sustainability of those things are not there." [imposed program, also coded at relatedness thwart]. "Considering an increased population, we discussed as the committee that we need to have another borehole for sufficient water supply in the village to minimize the competition. So we have delivered the message to the VDC..." [limited choices because of financial and political circumstances, also coded at competence thwart].
A2.2.2 MotCli competence thwart	When participant describes the social context, program context, an activity, or action of another individual (e.g. members, users, village leaders, NGO partners, or government staff) which does or could negatively shape members' experience of **competence** with respect to water point management.	Key words/phrases/concepts: - May be co-located with items coded to A1.2.2 (competence satisfaction) - Absence of skills, resources, or networks which thwarted WPC members ability to complete their role - Lack of feedback and support - No structure or direction, unclear goals or aims - "because of x unable to do y" - Absence of training	Refer to A2.1.2	"Our wish is that more boreholes should be installed because the other one that was redone by UP was merely replacing the old pipes not digging deeper, so it is not reliable as not much water is fetched." "The next time we ask for contributions, some claims that we collect money for personal use and other

Code	Long Description	Inclusion	Exclusion	Example
		- Negative feedback		speaks many negative things." [also relatedness thwart] "The problem with CADECOM is they come to introduce programs and when they leave, they never return to monitor and evaluate." [also relatedness thwart]
A2.2.3 MotCli relatedness thwart	When participant describes the social context, program context, an activity, or action of another individual (e.g. members, users, village leaders, NGO partners, or government staff) which does or could negatively shape members' experience of **relatedness** with respect to water point management.	Key words/phrases/concepts: - May be co-located with items coded to A1.2.3 (e.g. because X I was unable to Y …), - When activity or approach moves people in opposite directions "us" and "them"; or "me" and "them" - When context does not support empathy, listening, or 2-way exchange… - May be co-located with items coded to A1.2.3 (e.g. because X did y, I felt…), or could be observed/inferred.	Refer to A2.1.3	"When time of soliciting contributions from the households comes you are also bound to receive abusive language from the people…" "…And the committee that was there before us failed and was disgraced and dissolved, we don't want the same fate to befall us." [Also coded to autonomy frustration]. "The community or outsiders of the committee do not provide any support". [Also coded to competence frustration].
A2.2.4 MotCli other thwart	When negative motivational climate is evident but the BPN it impacts is not clear.	n/a	n/a	n/a

Code	Long Description	Inclusion	Exclusion	Example
A3 Motivation types	Parent/aggregate of A3.1 and A3.2 A reason/drive for doing an action (or inaction in the case of amotivation), the "why" of a behaviour (Ryan & Deci, 2000a).	Motivations should be the reason for engaging in the behaviour not the outcome	n/a	n/a
A3.1 Autonomous	Parent/aggregate of A3.1.1 to A3.1.3	Parent/aggregate of A3.1.1 to A3.1.3 Important.	n/a	n/a
A3.1.1 Intrinsic	"It's enjoyable to…" Members' motivation due to the inherent enjoyment or interest derived from the behaviour itself (Ng et al., 2012).	Key words/phrases/concepts: - Enjoyed, fun, interesting, pleasure, mastering, like, happiness, fascinating, passionate, enthusiastic, enjoyable	Opposite: boring, no interest, not fun, didn't engage me, means to an end, tedious, don't enjoy, confused	"I am part and parcel of this community because I live here, and I love it. I serve the same community and do not want to go anywhere else." "Because I enjoy working in the committee as I learn a lot about water."
A3.1.2 Identification	"It's important to…" Members' personal endorsement or identification with the value or importance of the behaviour (Ng et al., 2012; Ryan, Patrick, et al., 2008). The behaviour is more congruent with personal goals and individual identity. Individuals perceive the cause of their behaviour reflect an aspect of themselves.	Key words/phrases/ concepts: - Personally important to me, I value participating, it's beneficial for my X, I learn valuable lessons, it's my choice, it's meaningful to me, what we/I want, it will improve my…., I apply it in…, it's useful, it helps me…, volunteer, our / everyone / community, community benefit, important, service, entrusted, help others, responsibility, others, health, benefit, improved, valuable, valued, care, sustain, vital	n/a	"In the light of a major breakdown we must hire a mechanic to fix it, that's very expensive. In a scenario where the committee has inadequate funds the community is deprived of clean water." "A volunteer is to help the community because I knew it is volunteerism from the beginning. Therefore, it is my personal choice to partake on the WPC and nothing else."

Code	Long Description	Inclusion	Exclusion	Example
				"We have to persevere some of these things. The benefits of having a functional water point within the village outweighs all these insults that we sometimes get."
A3.1.3 Approach introjected	Attempts to meet standards to seek self-worth (Assor et al., 2009; Sheldon et al., 2017). Can be associated with projection, imaging that others will approve of them (Ryan & Deci, 2017). However, the feeling can persist even when external contingent is absent.	Key words/phrases/ concepts: - Others will see I can …, others see I am capable, pride, boosts self-esteem, feel good about myself, prove to myself I'm capable, better than others, others appreciate me when I…, people respect me… - When reward is administered internally (i.e. patting oneself on the back) rather than administered externally.	Distinct from external motivation (refer to A3.2.2 An external motivation code was used when the reward was administered from an external source (e.g. "the village head would be pleased"), compared to internal source (e.g. "I want to please the village head").	"And the feeling you get when people are grateful of your assistance in their lives is splendid, they respect you. I feel proud." "I felt proud because it was my first time to be in the [WPC] and that meant that people saw some potential in me." "the people in our community had chosen me to be a leader and entrusted me to take care of the development that mattered the most to them" "Members feel good, they feel educated. The entire community has to literary sit down and watch them fix the borehole until water starts coming out and the people cheer. So you can imagine the prestige and good

Code	Long Description	Inclusion	Exclusion	Example
				feeling that comes with being the ones…".
A3.2 Controlled	Parent/aggregate of A3.2.1 to A3.2.4	Parent/aggregate of A3.2.1 to A3.2.4	n/a	n/a
A3.2.1 Avoidance introjected	"I should do…" Motivation reflecting internal pressures such as contingent self-worth, guilt, shame, and need for external approval. A facet of controlled regulation. (Ng et al., 2012). A result of internal pressure, though can be associated with projection, imaging that others will approve or disapprove of them (Ryan & Deci, 2017). However, the feeling can persist even when external contingent is absent. Consider instead of an external punishment, it is administered internally.	Key words/phrases/ concepts: - Should, must, guilt, shame, I'd feel bad if I..., feel afraid of failing, feel pressured, don't want to feel bad, avoid failure, others might think…	Do not include "have to" type comments, these are external. An external motivation code was used when the punishment was administered from an external source (e.g. "the village head would be disappointed"), compared to internal source (e.g. "I don't want to disappoint the village head").	"What would [donors] think if they were to see members of the community, they spent their money on ignore the help they have been given? What would they think if they saw the members of the community not take care of this borehole?" "The chief nominating us means that he trusted us and therefore, I do not want to leave and disappoint him. "
A3.2.2 External	"I have to…" Motivation to comply with external pressures including rewards or punishments which can be social or material. This includes social pressures or gain a reward. A type of controlled regulation. (Ng et al., 2012; Ryan, Patrick, et al., 2008). Behaviour is directly controlled by external contingencies;	Key words/phrases/ concepts: - Others upset with me, pressure from others, what I'm told to do, others approve when I…, others disapprove when I…, others will be mad at me, others like me better when…., I don't have any choice, I am recognised when…, to avoid criticism, others insist I…, if I don't I get in trouble, others were disappointed when…, others disgraced when…, required to…, I'm paid to…	Do not include "should do" type comments, these are avoidance introjected. Refer to inclusions and exclusions in A3.1.3and A3.2.1	"They did a food for work strategy in which people were being paid for the work done, for the afforestation project. So it is like an agreement that you will be paid after participating." "We remain committed because if the borehole is to stop functioning, we are the ones to be blamed not outsiders (community)"

Code	Long Description	Inclusion	Exclusion	Example
	hence the behaviour is present only when the external contingent is expected.			
A3.2.3 Amotivation	"I don't want to…" The state of lacking intention to act. (Ng et al., 2012). Can be because of absence of competence, lack of interest, or defiance (Ryan & Deci, 2017)	Key words/phrases/ concepts: - I don't know how to…, don't know why, no good reason, I refuse to…, not worth the…, no point in…., I didn't even think to…, I'm not considering…., it is impossible to…	n/a	"Yeah, at many times it really feels like a burden." "There is nothing interesting about being a committee member." "There are no benefits… sometimes I consider handing over to another person."
A3.2.4 other motivation	Motivation type not included in the above	n/a	n/a	n/a
A4 AACES / ICD	Parent/aggregate code for A4.1to A4.6	Parent/aggregate code for A4.1to A4.6	Codes concerned specifically with RWS or the WPC are coded against A5	n/a
A4.1 AACES / ICD activity	A punctual event/stage associated with AACES/ICD implementation, described either by CADECOM staff or participants, or identified in my diary.	Key words/phrases/ concepts: - Includes role of animator - Could include activities such as visioning, asset maps etc., or a description of participatory approaches, meetings, construction works, discussions, roles - Includes but not limited to preliminary works with CADECOM/NGO	As per A4	"If the [CADECOM] coordinator feels that this is not something which you can do [community goals], then the coordinator will also liaise with the national coordinator and will keep on discussing that process to say 'okay this is something which we can do, this is something which we cannot do.'"

Code	Long Description	Inclusion	Exclusion	Example
				"Some of our [animator] roles were to connect CADECOM with the community. So CADECOM would train us and impart us with some skills which we would take to the community and from the community we would bring feedback to CADECOM. " "VSL programmes, livestock pass-on programmes, irrigation agriculture, protecting children from child abuse and water point management in all the areas where CADECOM installed boreholes." "A lot of things happened. There were village mapping and visioning in groups and the need that emerge most was water supply as we lacked the water point. So it was prioritised as the main thing we needed most."
A4.2 AACES / ICD outcomes: attitudes	A change in attitude based on AACES / ICD	Key words/phrases/ concepts: - Changes in "people's perceptions of their (material, social, and human) positions, and cultural values, ideologies, and beliefs" (White, 2010, p. 161)	As per A4	"Our eyes opened and realised our potential although initially we couldn't actually figure out how this could be achieved but, by and by we saw that things started working out."

Code	Long Description	Inclusion	Exclusion	Example
		- People extends to organisations and institutions as well as individuals (e.g. e.g. CADECOM staff, community actors, government stakeholders, area mechanics, village leaders etc.) - Can be tangible outcomes for individuals, institutions, or organisations - Positive and negative changes		"The skill that is in me that no one can take away from me is empowering and it motivates me…" "I realised that we all had the potential to change our mindset and stop segregating them [disabled and elderly]."
A4.3 AACES / ICD outcomes: relationships	A change in relationships as a result of the AACES / ICD program	Key words/phrases/ concepts: - Changes of relationships within and between actors (e.g. CADECOM staff, community actors, government stakeholders, area mechanics, village leaders etc.) - Can be relationships regarding individuals, institutions, or organisations - Positive and negative changes	As per A4	"In the past we were relying on the district council to send people and maintain the borehole if it was damaged and sometimes they could not come. Now we are able to work together and complete repairs." [also coded under tangible outcomes]. "The water point committee doesn't work in isolation, for example the money we use is contributed by the community. That's what working together is all about. The committee is trusted with the people's 100 kwacha's and we use the money to their best of interests. That's working together at its best."

Code	Long Description	Inclusion	Exclusion	Example
				"Trust is the first thing as that will protect the project in general, transparency is the second thing. Given that CADECOM is very transparent and it would be counterproductive to not be transparent when dealing with them."
A4.4 AACES / ICD outcomes: tangible	A change in tangibles (e.g. learning, physical, structures, leadership) based on AACES/ICD program. Includes tangible outcomes from an organisational [CADECOM] perspective	Key words/phrases/ concepts: - Changes in material welfare, standards of living, or assets (skills and, associations, natural resources, physical assets, and economic) - Can be tangible outcomes for individuals, institutions, or organisations - Positive and negative changes	As per A4	"It enhanced sanitation and hygiene which reduced water borne diseases." "We used to have severe water problem in the past. Therefore, when the borehole was drilled, everyone was happy. " "One of my high point is that I gained the ability to manage/maintain the water point such that I feel confident dismantle and assess/check if there is a problem."
A4.5 AACES / ICD outcomes: other	A change not captured by the other 3 categories	n/a	As per A4	n/a
A4.6 SBAs / ABCD	An approach to an activity or 'development' that aligns with SBA / ABCD thinking and processes.	Key words/phrases/ concepts: - Include comparisons to needs approaches for the moment and approaches that are described as SBA by CADECOM (but may not be)	Anything that is not unique to the SBA process (e.g. "as part of SBA we were trained for the water	"... The groups start presenting what they have. So they present and then the community starts criticising or agreeing on what they

Code	Long Description	Inclusion	Exclusion	Example
			point" is not coded here, but later in A5	want.... so they agree on the [vision] and they also draw a map representing a map what they want to have maybe." "I think the best thing about the A plus project or the SBA, people have identified their strengths. Yes. When doing the visioning process people highlight the strengths of the community and people can see that development is not necessarily an external factor it should be intrinsic, it should be within the genus within the community. Because of that the perception has changed..." "CADECOM through the GVH mobilised the community, inquiring into our challenges and what we thought could be the best solutions to such challenges."
A5 RWS & WPC Management	Aggregate of A5.1 to A5.4. Codes concerned with what WPC does and the state of the RWS service.	Aggregate of A5.1 to A5.4	Codes related to AACES or ICD more broadly are coded to A4	n/a

Code	Long Description	Inclusion	Exclusion	Example
A5.1 WPC role and activities	When WPC members describe their role or actions as part of water management. Includes individual members and WPC more broadly.	Key words/phrases/ concepts: - Money contributed monthly - Things WPC does and would like to do as part of the role. - References to existing applications of skills and lack of skills "we could have remedied ourselves, had we the necessary skills." - References to any WPC training - References to challenges with undertaking the role - Includes activities related to selection into the WPC	As above	"The chief gathers the community and then people to be on the committee are nominated and then an open voting system was done. That's how we were elected." "We have numerous roles and one of the roles is to lead the community to ensure that there is safety at the borehole and also proper handling of the borehole." "We need to contribute so that if the borehole is damaged, we can take the money and buy the spare parts and maintain it. We (WPC) tell the people what we want to do with their money... "
A5.2 RWS & WPC outcome	Outcomes or outputs from WPC activities, both tangible and attitudinal outcomes. Relevant to those responsible for RWS management, the WPC institution, or the physical supply.	Key words/phrases/ concepts: - Changes in material welfare, standards of living, or assets (skills and, associations, natural resources, physical assets, and economic) related to water - Can be tangible outcomes for individual members, or WPC. - Positive and negative changes	As above	"As the WPC we have tried to construct the wood fence using local poles around the borehole to curb the problem that others have cited. However, some people vandalize it by taking all the wood for home use or whatever. "

Code	Long Description	Inclusion	Exclusion	Example
		- "Because of this…" "after this…" "when x then y" - Resultant of activities. - The total in the bank account - Visions for the future of RWS - Outcomes achieved by WPC, or the state of the supply - Inferred outcomes (e.g. "by collecting money we can repair the borehole", (outcomes include money collection and repairs) - Resultant skills from completing training or tasks - Attitudes towards the role - Causal outcomes, e.g. we observed the challenge so chose to maintain the borehole (also noting this would be coded at roles and activities)		"For a long time we have been looking for suitable water supply in the community and we got it. " "The money that we corrected amounted to 22000 Kwacha, but due to several challenges these two boreholes faced and coupled with the fact that the village is very small, we ended up using most of the money. So we have 11500 kwacha"
A5.3 WPC relationships	Includes any relationships within WPC members, or between WPC members and other actors.	Key words/phrases/ concepts: - Relationships between committee and community, government, users, NGO; relationships within committee - "We", "they", "them", "us", "with" type statements as referred to by the WPC or actors reflecting on the WPC	As above	"To ensure [water point] sustainability for continues water supply, we work as team and reorganize ourselves." "The working relationship among the committee is very good. Although, sometimes they may have small problems within the committee maybe one would like to pull out. However they are able to

Code	Long Description	Inclusion	Exclusion	Example
				solve those problems alone and move forward." "There is a strong relationship between the committee and community…. they are positively perceived. This is because the committees do what the people want hence, they collaborate well."
A5.4 User attitudes	Attitudes of the water users towards the state of the service or other actors relevant to RWS management. The latter include WPC members, NGO actors, other users, village leadership, and government.	Key words/phrases/ concepts: - The water point committee…, the water supply…, other users…, the rules, the tariff, payment, I trust the WPC, I don't trust the WPC, the WPC are reliable, the WPC are unreliable, I must assist with cleaning…, the selection of members is…	As above	"Others particularly those who are drunk are so abusive they can come right your house and accuse you of stealing their money." "Just a handful of [users] cannot successfully approach the village headman otherwise we [users] may be faulted for channelling the matter to him so we just opt to stay quite so long we have water in the village." "Our committee operates properly. They monthly collect the contributions of K100, an indication of commitment. In addition, they publicly provide the

Code	Long Description	Inclusion	Exclusion	Example
				financial report. So we know that the committee is operating honestly."
A6 Government	Any reference to government actors either district or national level from interview participants	Key words/phrases/ concepts: - MPs, government, councillors	n/a	"In the late Binguwa Mutharika era, we kept on asking the government through the MP to drill a borehole for us. And our request was heard." "[The other borehole that was broken] it was installed by the government." "Of course Government on its own does not have resources to run its programs. What Government has is human resource and expertise... It can put in place very good plans, but those plans cannot be implemented with no resources, we can see those bright plans but not implemented. " "We request help to the councillor."
A7 Great quote	Any quotes of note that clearly capture a concept of interest	n/a	n/a	n/a
A8 To be coded	Placeholder for items that require coding/categorisation	n/a	n/a	n/a

Appendix E SDT questionnaires

Name:	
Age:	
Village:	
Years on committee:	
Role on committee:	

There are a variety of reasons why people participate on a water point committee (WPC). Please indicate how true each of these reason is for **why <u>you</u> actively participate on the WPC,** using the scale shown. Mark one box per question using the scale shown. Your responses will be kept confidential and collated with other communities. Thank you for your honest responses.

	1 Not at all true	2	3	4 Somewhat true	5	6	7 Very true
1. Because it is my personal choice to participate on the WPC	☐	☐	☐	☐	☐	☐	☐
2. Because if I don't participate, others will get mad	☐	☐	☐	☐	☐	☐	☐
3. Because participating on the WPC boosts my self-esteem	☐	☐	☐	☐	☐	☐	☐
4. Because I enjoy participating on the WPC	☐	☐	☐	☐	☐	☐	☐
5. I once had good reasons for participating on the WPC, but now I don't	☐	☐	☐	☐	☐	☐	☐
6. Because it is a pleasure to participate on the WPC	☐	☐	☐	☐	☐	☐	☐

	1 Not at all true	2	3	4 Somewhat true	5	6	7 Very true
7. Because important people (i.e., chief, NGO) will like me better if I participate	☐	☐	☐	☐	☐	☐	☐
8. Because I strongly value participating on the WPC	☐	☐	☐	☐	☐	☐	☐
9. Because I'll get in trouble if I don't participate on the WPC	☐	☐	☐	☐	☐	☐	☐
10. Because I don't have any choice but to participate on the WPC	☐	☐	☐	☐	☐	☐	☐
11. I'm not sure, I wonder whether I should continue on the WPC	☐	☐	☐	☐	☐	☐	☐
12. Because I want to feel good about myself	☐	☐	☐	☐	☐	☐	☐
13. Because participating on the WPC is fun	☐	☐	☐	☐	☐	☐	☐
14. Because I want to prove to myself that I am capable	☐	☐	☐	☐	☐	☐	☐
15. Honestly, I don't know why I participate on the WPC	☐	☐	☐	☐	☐	☐	☐
16. Because I don't want to feel bad about myself	☐	☐	☐	☐	☐	☐	☐
17. Because participating on the WPC is interesting	☐	☐	☐	☐	☐	☐	☐

	1 Not at all true	2	3	4 Somewhat true	5	6	7 Very true
18. Because I want to feel proud of myself	☐	☐	☐	☐	☐	☐	☐
19. Because participating on the WPC is personally important to me	☐	☐	☐	☐	☐	☐	☐
20. I used to know why I participate on the WPC, but I don't anymore	☐	☐	☐	☐	☐	☐	☐
21. Because I would feel like a failure if I didn't participate on the WPC	☐	☐	☐	☐	☐	☐	☐
22. Because I would feel ashamed if I didn't participate on the WPC	☐	☐	☐	☐	☐	☐	☐
23. Because I would feel guilty if I didn't participate on the WPC	☐	☐	☐	☐	☐	☐	☐
24. Because participating on the WPC is meaningful to me	☐	☐	☐	☐	☐	☐	☐

Dzina:
Zaka za kubadwa:
Mudzi:
Zaka chisankhidwileni mu komiti:
Udindo wanu:

Pali zifukwa zambiri zomwe zimakopa anthu kutumikila mu komiti yapa mjigo (WPC). Pelekani ganizo lanu pa mndandanda wa mafunso otsatilawa ndipo chongani malo amodzi okha omwe akupeleka chithunzithunzi chokwanila cha zifukwa zomwe mukutumikila nawo modzipeleka mu komiti ya pano pa mjigo. Mayankho anu adzasungidwa mwachinsinsi ndipo adzaunikidwa limodzi ndi mayankho ochokera ku madela ena. Dziwani kuti maganizo ndi mayankho anu adzasungidwa mwa chinsinsi. Zikomo pontenga nawo mbali ndikupeleka nawo maganizo anu mwachilungamo.

	1 Sizoona	2	3	4 Osati kweni kweni	5	6	7 Zoonadi
1. Chifukwa ndi chisankho changa kutumikira mu komiti ya mjigo.	☐	☐	☐	☐	☐	☐	☐
2. Chifukwa ngati sinditumikira mu komitiyi anthu ena adzakhala ndi mkwiyo.	☐	☐	☐	☐	☐	☐	☐
3. Chifukwa kutumikira mu komiti ya mjigo kumathandiza kupititsa mtsogolo mtima woti ndili ndi kuthekera kochita zinthu zothandiza.	☐	☐	☐	☐	☐	☐	☐
4. Chifukwa ndimasangalala kutumikira mu komiti ya mjigo.	☐	☐	☐	☐	☐	☐	☐

1

	1 Sizoona	2	3	4 Osati kweni kweni	5	6	7 Zoonadi
5. Ndinali ndi zifukwa zabwino zotumikira mu komiti ya mjigo koma pano ndilibe.	☐	☐	☐	☐	☐	☐	☐
6. Chifukwa kutumikila komiti ya pa mjigo kumandipatsa chimwemwe	☐	☐	☐	☐	☐	☐	☐
7. Chifukwa anthu ofunikira monga a mfumu ndi mabungwe omwe sali a boma adzandikonda kwambiri ndikamatumikira mu komiti ya mjigo.	☐	☐	☐	☐	☐	☐	☐
8. Chifukwa kutumikira mu komiti ya mjigo ndi chinthu cha pamwamba kwambiri.	☐	☐	☐	☐	☐	☐	☐
9. Chifukwa ndidzakhala pa mavuto ngati sinditumikira mu komiti ya mjigo ngati sinditha kutelo	☐	☐	☐	☐	☐	☐	☐
10. Sindingathe kuchitila mwina koma kusankha kutumikila komitiyi basi	☐	☐	☐	☐	☐	☐	☐
11. Sindikudziwa bwinobwino ngati ndikufuna kupitiliza kutumikira mu komiti ya mjigo kapena ayi.	☐	☐	☐	☐	☐	☐	☐
12. Chifukwa ndikufuna kumva bwino m'moyo mwanga.	☐	☐	☐	☐	☐	☐	☐
13. Chifukwa kutumikira mu komiti ya mjigo ndi manyado kwa ine.	☐	☐	☐	☐	☐	☐	☐
14. Chifukwa ndimafuna kudzitsimikizira ndekha kuti ndingathe.	☐	☐	☐	☐	☐	☐	☐

	1 Sizoona	2	3	4 Osati kweni kweni	5	6	7 Zoonadi
15. Kunena chilungamo, sindikudziwa chifukwa chomwe ndikutumikira mu komiti ya mjigo.	☐	☐	☐	☐	☐	☐	☐
16. Chifukwa Sindifuna kudzikhumudwitsa ine mwini	☐	☐	☐	☐	☐	☐	☐
17. Chifukwa kutumikila komiti ya pamjigo ndi kosangalatsa	☐	☐	☐	☐	☐	☐	☐
18. Chifukwa ndimafuna kuti ndidzimva kunyada ine mwini.	☐	☐	☐	☐	☐	☐	☐
19. Chifukwa kutumikila komiti ya pamjigo ndi chinthu chofunikila pa moyo wanga	☐	☐	☐	☐	☐	☐	☐
20. Ndinkadziwa chifukwa chomwe ndimatumikira mu komiti ya mjigo koma pano sindikudziwa.	☐	☐	☐	☐	☐	☐	☐
21. Chifukwa ndidzaoneka ngati wolephera ngati sinditumikira mu komiti ya mjigo.	☐	☐	☐	☐	☐	☐	☐
22. Chifukwa ndidzachititsidwa manyazi ngati sinditumikira mu komiti ya mjigo.	☐	☐	☐	☐	☐	☐	☐
23. Chifukwa ndidzagwidwa ndi chikumbumtima choti ndadzilakwila ine mwini ngati sinditumikira mu komiti ya mjigo.	☐	☐	☐	☐	☐	☐	☐
24. Chifukwa kutumikila mu komiti ya pa mjigo kuli ndi tanthauzo kwa ine	☐	☐	☐	☐	☐	☐	☐

Appendix F Borehole and WPC survey form

1. Village location	
2. Date	
3. Respondent name/s	
4. GPS Coordinates recorded (y/n)	
5. Year installed	
6. # Households served	
7. Rate (MWK) and frequency of collection	
8. WPC total Savings	
9. WPC total value of spare parts in stock	
10. Equivalent months of savings and spares (calculated)[D]	
11. Are finance records kept?	
12. Finance records sighted?	

13. Approach to maintenance (e.g. regular service, response to issues)?	
14. When last out of service? How long to repair?	
15. What helped with repairing / maintenance?	
16. Functional? (y/n)	
17. Satisfaction with yield? (satisfied, unsatisfied…? and source of info)	
18. WPC meeting frequency?	
19. What rules are enforced?	
20. Description of water point (e.g. fenced, drainage, condition). Additional comments	

Appendix G Participation information sheet and consent form

UTS UNIVERSITY OF TECHNOLOGY SYDNEY

University of Technology Sydney
PO Box 123, Broadway NSW 2007
Australia

Informed Consent Form for Research in
Strength Based Approaches in Water, Sanitation and Hygiene projects

Introduction
I am from University of Technology Sydney Australia. We are doing research on **Strength Based Approaches (SBAs) in Water, Sanitation and Hygiene (WASH) projects.** This consent form may contain words that you do not understand. Please ask me to stop as we go through the information and I will take time to explain. If you have questions later, you can ask them of me or of another researcher.

Purpose of the research
This research aims to understand the significance of SBAs in rural WASH programs. SBAs are a type of participatory process where citizens are central to the design and management of programs.

Type of Research Intervention
This research will involve your participation in a group discussion and/or individual interview.

Participant Selection
You are being invited to take part in this research because your experience of SBAs and/or rural water supply programs is important! Your story and feedback will provide information to assist the research.

Voluntary Participation
Your participation in this research is entirely voluntary. It is your choice whether to participate or not. If you choose not to participate nothing will change. You may skip any question and move on to the next question.

Duration
The research takes place over 3 months in total.

Risks
You do not have to answer any question or take part in the discussion/interview/survey if you feel the question(s) are too personal or if talking about them makes you uncomfortable.)

Reimbursements
You will not be provided any incentive to take part in the research.

Sharing the Results
The knowledge that we get from this research will be shared with you and your community before it is made widely available to the public. Following, we will publish the results so other interested people may learn from the research.

Who to Contact
If you have any questions, you can ask them now or later. If you wish to ask questions later, you may contact: Ian Cunningham, University of Technology Sydney, ian.cunningham@uts.edu.au or +265 [redacted]. Alternatively you can contact my supervisor on Juliet.willetts@uts.edu.au or Martin Mazinga (CADECOM, Malawi) on +265 [redacted] or [redacted]@yahoo.com.

This proposal has been reviewed and approved by NCST, which is a committee whose task it is to make sure that research participants are protected from harm. If you wish to find about more about the IRB, contact Mr. Mike G Kachedwa, Chief Research Services Officer, Health, Social Sciences and

Humanities Division, National Commission for Science and Technology, P.O. Box 30745, Capital City, Lilongwe 3, Malawi, Office Phone: +265 1 771 550/774 869.

Do you have any questions?

Part II: Certificate of Consent

I have been invited to participate in research about **Strength Based Approaches (SBAs) in Water, Sanitation and Hygiene (WASH) projects.**

I have read the foregoing information, or it has been read to me. I have had the opportunity to ask questions about it and any questions I have been asked have been answered to my satisfaction. I consent voluntarily to be a participant in this study

Print Name of Participant_____

Signature of Participant _____

Date _____
Day/month/year

If illiterate [1]

I have witnessed the accurate reading of the consent form to the potential participant, and the individual has had the opportunity to ask questions. I confirm that the individual has given consent freely.

Print name of witness_____ **Thumb print of participant**

Signature of witness _____

Date _____
Day/month/year

Statement by the researcher/person taking consent

I have accurately read out the information sheet to the potential participant, and to the best of my ability made sure that the participant understands the research project. I confirm the participant was given an opportunity to ask questions about the study, and all the questions asked by the participant have been answered correctly and to the best of my ability. I confirm that the individual has not been coerced into giving consent, and the consent has been given freely and voluntarily.

Signature of Researcher /person taking the consent_____

Date _____
Day/month/year

[1] A literate witness must sign (if possible, this person should be selected by the participant and should have no connection to the research team). Participants who are illiterate should include their thumb print as well.

UTS UNIVERSITY OF TECHNOLOGY SYDNEY

University of Technology Sydney
PO Box 123, Broadway NSW 2007
Australia

Kalata yopempha chilolezo kutengapo mbali

Ndondomeko zolimbikitsa nkhani za madzi ndi kuchita ukhondo

Mau Oyamba
Ndachokela ku University of Technology Sydney Australia. Tikupanga kafukufuku wokhuzana ndi **ndondomeko zolimbikitsa nkhani za madzi ndi kuchita ukhondo.** Pamene mukuona kuti simunamvesetsa, chonde funsani ndipo ndikufotokozerani. Ngati muli ndi mafunso ena mutha kundifunsa pamapeto kapena mutha kumufunsa nzanga amene tikupanga nafe limodzi kafukufuku uyu.

Cholinga cha kafukufuku wathu
Cholinga cha kafukufuku ameneyu ndikufuna kumvetsetsa kufunikira kwa **Ndondomeko zolimbikitsa nkhani za madzi ndi kuchita ukhondo mmadera akumudzi. Ndondomeko zolimbikitsa nkhani za madzi ndi kuchita ukhondo** ndipomwe mzika zimayenera kutengapo mbali pakapangidwe komaso dongosolo loyenera la ndondomekozi.

Ndondomeko ya Kafukufuku wathu
Kafukufuku wathu akhala wokambilana mumagulu kapena wokambirana anthu awiri (inu ndi ine).

Kasankhidwe ka Anthu Otengapo Mbali
Mwasankhidwa kuti mutengepo mbali pa kafukufuku ameneyu chifukwa kudziwa kwanu kwa **Ndondomeko zolimbikitsa nkhani za madzi ndi kuchita ukhondo mmadera akumudzi ndi kofunikira kwambiri. Mayankho anu atithandiza kudziwa zambiri mukafukufuku ameneyu.**

Kutengapo mbali mozipeleka
Kutengapo mbali pa kafukufuku ameneyu ndi kwa ulere. Mutha kusankha kutengapo mbali kapena kusatengapo mbali pakafukufuku ameneyu. Mukasankha kusatengapo mbali palibe chimene chitasinthe. Muli ndi ufulu okana kuyankha funso limene simungakwanitse ndikupita ku funso lina.

Kutalika kwa kafukufuku
Kafukufuku ameneyu atenga miyezi yoposera itatu kuti afike pamapeto.

Chenjezo
Muli ndi ufulu okana kuyankha funso kapena kusiya kutengapo mbali pa kafukufuku ameneyu ngati mukuona kuti funso kapena mafunso akukhudza kwambiri inuyo ngati munthu kapenanso sakukusangalatsani.

Malipiro
Simupatsidwa kenakalikonse potengapo mbali pa kafukufuku ameneyu.

Kafalitsidwe ka Zotsatira za Kafukufuku
Zotsatira zakafukufuku ameneyu zidzapelekedwa kwa inu ndi mudzi wanu zisanafike kwa wina aliyense. Pamapeto pake zotsatirazi zidzatsindikizidwa mumabuku kuti enanso azakhale ndi mwayi wophunzira kuchokela mu kafukufuku ameneyu.

Woyankhula Naye Ngati Muli ndi Mafunso Oonjezera
Ngati muli ndi mafunso mutha kufunsa panopa kapena nthawi yina. Ngati mukufuna kufunsa nthawi yina mutha kulumikizana ndi: Ian Cunningham waku sukulu yaku University of Technology Sydney, ian.cunningham@uts.edu.au, Foni: −265 [redacted]. Kapena mphunzitsi wankulu Juliet.willetts@uts.edu.au, Foni: −61 [redacted].
Kafukufukuyu anavomelezedwa ndi bungwe limene limateteza anthu otengapo mbali pakafukufuku

pazovuta zina zilizonse. Ngati mukufuna kudziwa zambiri pa izi mutha kuyankhula ndi Mr Mike G. Kachedwa, Chief Research Services Officer, Health, Social Sciences and Humanities Division, National Commission for Science and Technology, P/O Box 30745, Capital City, Lilongwe 3, Malawi, Foni :+2651771550/774869

Muli ndi funso lililonse tisanapitilire ndi kafukufukuyu?

Gawo lachiwiri: Chiphatso Chovomeleza kutengapo mbali pa kafukufuku

Ndapemphedwa kuti nditengepo mbali pa kafukufuku wokhuzana ndi **Ndondomeko zolimbikitsa nkhani za madzi ndi kuchita ukhondo mmadera akumudzi. Ndondomeko zolimbikitsa nkhani za madzi ndi kuchita ukhondo**.

Ndawelenga kapena andiwelengela zonse zokhuza kafukufuku ameneyu ndipo pamene ndinali ndi mafunso ndinapatsidwa mpata wofunsa ndipo ndayankhidwa mogwira mtima. Pa chifukwa ichi ndikudzipeleka kutengapo mbali pakafukufuku ameneyu.
Dzina la wotengapo mbali……
Saini ya wotengapo mbali……
Tsiku……
(Tsiku/Mwezi/Chaka)

Ngati wotengapo mbali sadziwa kulemba
Ine ndikuyikila umboni kuti awa atengapo mbali pa kafukukufu ameneyu. Anawawelengela zonse zokhuzana ndi kafukufuku ameneyu ndipo anapatsidwa mpata wofunsa mafunso. Ndikuchitilanso umboni kuti anawawelengela zonse ndipo amvesetsa ndi kuvomeleza kutengapo mbali mosakakamizidwa.

Dzina la mboni…… Chala cha wotengapo mbali
Saini ya mboni……..
Tsiku……..
(Tsiku/Mwezi/Chaka)

Uthenga wochokela kwa amene akupanga kafukufuku
Ine ndawelenga molondola zokhuza kafukufuku ameneyu kwa wotengapo mbali, ndipo mukuthekela kwanga ndayetsetsa kuti wotengapo mbali amvetsetse zokhudza kafukufuku ameneyu. Ndikutsimikiza kuti wotengapo mbali anapatsidwa mpata wofunsa mafunso okhuzana ndi kafukufuku ameneyu ndipo mafunso onse omwe anafunsidwa ndi wotengapo mbali anayankhidwa molondola ndi mwakuthekela kwanga. Ndikutsimikiza kuti wotengapo mbali sanakakamizidwe kutengapo mbali koma wavomela kutengapo mbali mwaulere komanso mosakakamizidwa.
Saini ya wopanga kafukufuku……
Tsiku……
(Tsiku/Mwezi/Chaka)

Appendix H Theoretical and practical alignment and divergence between SDT and ABCD

Appendix Table 3: Comparison of SDT and ABCD

CONSTRUCT	Self-Determination Theory (SDT)	Asset-based community development (ABCD)
Research philosophy	Post-positivism (Walck, 2017) Statistical positivism (Chirkov & Anderson, 2018)	Social constructionism (Elliott, 1999, cited in Mathie & Cunningham, 2003)
Ontology - What is its commonly described view of reality? What can be said to exist?	One reality, knowable within a level of probability. What is real is empirically verifiable and measurable (Chirkov & Anderson, 2018). This includes people's experiences of their environments and the degree to which it satisfies or thwarts their basic psychological needs (BPNs). There is an inferred level of causality of motivations shaped by the degree to which life goals are intrinsic/extrinsic and individual experiences of BPNs relative to their environment.	Experiences of people matter and shape people's reality. This includes experiences with significant others, such as individuals from government, NGOs, external experts etc. Change happens through collective action and the transformation of assets through social processes (McKnight & Russell, 2018).
Epistemology - What is its commonly described view of knowledge, knowing, truth, validity?	The researcher is objective. Larger data sets are broken down to variables. These variables are components of the human psychological/motivational landscape which differ across individual cases (Chirkov & Anderson, 2018). SDT places emphasis on hypotheses, defined variables, observational methods, and statistical inferences (Ryan & Deci, 2017) Statistics are used to form reliable associations among variables and to generalise across wider populations.	Research approaches tend to be appreciative, participatory and action-orientated (i.e. pragmatic) (Garven et al., 2016). The main stakeholders of the project provide the information and direct the narrative about what is true and valued (Donnelly, 2010; Garven et al., 2016). Personal stories and case studies dominate ABCD literature. Change is complex and based on interconnectedness. Hence, attribution or linear causal relationships are often rejected (Mathie & Peters, 2014; Peters et al., 2011)
What does it criticise?	'Oppressive' environments which thwart BPNs (Ryan & Niemiec, 2009)	Externally imposed interventions (Kretzmann & McKnight, 1993)
What does it support? How is well-being conceptualised?	Supports environments which promote satisfaction of BPNs. Views people as organismic – BPNs are essential needs and foundational for growth-orientated individuals. People are naturally drawn to 'engage in interesting activities, to exercise capacities, to pursue connectedness in social groups, and to integrate […][their] experiences into a relative unity' (Deci & Ryan, 2000, p. 229)	ABCD is an endogenous process which promotes community-led change. People are viewed through the lens of the skills, capacities and relationships they can use to progress their aspirations (Mathie & Cunningham, 2003; Nel, 2015; O'Leary et al., 2011). Well-being is not defined in ABCD literature, however, descriptions of what ABCD promotes are akin to concepts of subjective well-being.

CONSTRUCT	Self-Determination Theory (SDT)	Asset-based community development (ABCD)
	Wellness is considered to be an experience of *thriving,* not simply the presence of positive feelings and the absence of negative feelings. Characteristics of wellness include: vitality; awareness; access to, and the exercise of, one's human capacities; and true self-regulation (Ryan & Deci, 2017). The satisfaction of BPNs is a precursor to both eudemonic and subjective well-being (Ryan & Deci, 2001), and well-being is enhanced by attainment of intrinsic goals (Sheldon & Kasser, 1998).	
What are desirable drivers and scale of social change?	Social change is supported by autonomy-supportive environments. This, in turn, supports BPN satisfaction at an individual or larger scale. SDT advocates for change at varying scales dependent on the context (ranging from relationships with partners, to sector-level change in education spaces).	Grassroots focus. More sustainable and relevant change happens from within a community by harnessing local strengths towards achieving locally identified goals (Kretzmann & McKnight, 1993).
How do they value culture intrinsic to place (e.g. organisational, geographical)?	Not culturally neutral. For example, organisational or national culture can restrict or support autonomy (Ryan & Niemiec, 2009).	Generally supportive. Tends to reserve judgement even when aspects of the culture of focus is considered oppressive (Gray, 2011; Mathie & Cunningham, 2003).
How is motivation supported?	Autonomous motivation is supported by environments which are conducive to the satisfaction of BPNs. Motivation and growth orientation is 'natural' for people and requires BPN satisfaction (Deci et al., 2017; Gagné & Deci, 2005; Ng et al., 2012; Ryan, Patrick, et al., 2008).	The identification and use of strengths towards achieving self-identified goals is motivating.
What are the types of motivation?	Autonomous (identified, integrated, intrinsic) and controlled (amotivated, external, introjected). Usually measured using questionnaires.	Motivated or demotivated. Usually indicated by proxies such as community mobilisation.
What is the model of internalisation of behaviour?	Individuals move from controlled to autonomous motivation (Deci et al., 1994)	Tends to use the term "ownership" over internalisation. Ownership/non-ownership is a binary. There are no intermediate states. Internalisation or ownership is associated with starting with local priorities and it is supported by individuals'/communities' realisation of their strengths.

Appendix Table 4: Comparison of practice between SDT and ABCD

CONSTRUCT	SDT	ABCD
What is the role of the ABCD/SDT practitioner?	Practitioner supports the autonomy of the participant (refer to the section 'How is autonomy supported?' in this table). Practitioner can act as a facilitator, but their expertise remains central to their relationships with participants.	Stepping back, allowing others to lead and other forms of expertise to determine change pathways. More absolutist than SDT in considering external agendas/assistance as less desirable (Mathie & Cunningham, 2005; O'Leary et al., 2011; Peters & Eliasov, 2014)
What is the role of external experts/authority figures in practice?	Rejects authoritarian approaches of practitioners (e.g. teachers, parents, health practitioners, boss); however, ultimately interventions should support BPNs	More absolutist than SDT in rejecting external assistance. Considers external agendas/assistance as less desirable
What scale do they focus?	Focuses on individual attributes, though these are considered universal and hence able to be generalised across populations.	Community-scale, focus on consensus and collective action
Desired experience of participants in interventions?	The perceived experiences of participants matter. This is more important than so-called actual motivations for behaviour (Deci et al., 1989). SDT seeks performance and well-being (satisfaction of BPNs). Autonomy is associated with the performance dimensions of creativity, innovation, collaboration, problem-solving and agency (Deci et al., 1999; Yu et al., 2018). Environments that support performance and wellness should satisfy BPNs. Self-determination through a sense of volition.	Less defined. Common experiences are hope, confidence, reciprocity and social networks. Self-determination is achieved through personally constructed futures.
What is the optimal (tangible) outcome of interventions?	Dependent on context. Tangible outcomes are associated with improved performance in various contexts (education, work, sport, health etc.) (Cerasoli et al., 2014; Su & Reeve, 2011). Specifically, autonomy has causal links with performance and dimensions of creativity, innovation, collaboration, problem-solving and agency (Deci et al., 1999; Yu et al., 2018).	Depends on context. People/community work on what they care about in contrast to external agendas. It is argued that this makes outcomes more relevant and ultimately more sustainable. It is also in contrast to existing development paradigms which usually rely on external interventions or expertise, and have responsibilities to meet pre-determined targets (Hipwell, 2009; O'Leary et al., 2011; Ireland & McKinnon, 2013). Examples of applications include improved infrastructure, livelihoods, economic opportunities and urban revitalisation.

CONSTRUCT	SDT	ABCD
How is autonomy supported? i.e. by what tools/ methods, guidance?	Offers guidelines more than tools. They include (Gagné & Deci, 2005; Ryan et al., 2011): - emphasise interesting or challenging aspects of tasks and acknowledge boring aspects - avoid contingent rewards and surveillance - acknowledge participant's perspectives - provide relevant information in a non-controlling way - offer choice (not control) - encourage self-initiation rather than pressuring certain participant behaviour.	(Kretzmann & McKnight, 1993; Mathie & Cunningham, 2003)
How is competence supported? i.e. by what tools/ methods, guidance?	(Ryan et al., 2011; Silva et al., 2014)	There are various tools which tend to highlight 'what has been' and 'what is' in terms of capacities e.g. asset mapping, appreciative interviews and quick wins Competence is also supported through relevant training and where relevant linkages with other support agencies (Mathie & Cunningham, 2003).
What is the role of evaluations?	SDT is 'anti-surveillance'. This includes controlling evaluations (Ryan & Deci, 2017). Advocates for non-controlling and informational feedback, and approaches which do not compromise BPNs.	Evaluations are not part of ABCD principles, although they are a common feature of ABCD projects. They may be internal (community members tracking their progress) or external (accountability to donors or NGO). ABCD scholars and practitioners advocate for evaluations that are locally relevant and supportive of local power and agency (Peters et al., 2011; Hills et al., 2010)

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