

**Sharing the recurrent costs of rural water supply in Mali:  
the role of WaterAid in promoting sustainable service delivery**

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Thesis submitted in accordance with the requirements  
for the degree of PhD, University of London

July 2013

## **Declaration of authorship**

I, Stephen David Jones, hereby declare that this thesis and the work presented in it is entirely my own. Where I have consulted the work of others, this is always clearly stated.

Signed:

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## **Abstract**

This thesis analyses how and why the recurrent costs of water services are shared between different actors in the rural local government areas in Mali which are supported by the international NGO WaterAid. This analysis of the financing arrangements for rural water services is used to critically assess theory, policy and practice in three areas: the community-based management approach to service delivery, the role of decentralised local governments in supporting community management, and the ability of external organisations to influence institutional change. Empirical evidence is presented for the period 2008-2011, drawing on research fieldwork undertaken in collaboration with WaterAid and its partners in 2010 and 2011, as the organisation introduced its own *Sustainability Framework* to help understand and address the challenges to delivering sustainable rural water services.

The thesis argues that approaches to understanding local institutions for natural resource management based on 'critical institutionalism' (Clever 2012), which emphasises the importance of improvisation and adaptation across different scales, should be placed within broader political economy analysis frameworks for assessing challenges in public services delivery from national to local levels. The use of such a framework shows how WaterAid and its partners adopt a 'critical institutionalist' perspective at community levels to support users in developing ways of raising funds for water services which draw on both traditional practices and NGO influences. However at local government and national levels their approach is based on ideas of 'best practice' rather than 'best fit' (Booth 2012): although the costs of local government support to communities under the model promoted by WaterAid lie within international benchmarks, it is unclear over what timescale this approach could be scaled up in Mali without donor support. This demonstrates the limited ability of local governments to ensure the delivery of decentralised public services without additional external resources and support themselves.

## Acknowledgements

It goes without saying that this research would not have been possible without the help and support of many people along the way. There are too many to name them all here, but I hope I can briefly thank some of those who have contributed their ideas and time so generously. Of course, the responsibility for the views expressed in this thesis remains mine.

Firstly, I would like to thank all my supervisors, academic and non-academic; I could not have asked for more from any of them. At Royal Holloway, Vandana Desai and Alex Loftus always asked the challenging questions of my work that I needed them to, and showed great patience in guiding an engineering graduate through a social science PhD. At WaterAid, Sam French, Nick Bundle and Tom Slaymaker all went beyond the call of duty in engaging thoughtfully and constructively with the academic side of my research as well as keeping me grounded in its practical implications. I am grateful to Nick and Tom for actively supporting my engagement with WaterAid's work in other countries too. At WaterAid in Mali, Nicolas Sidibé's energy and dedication was a constant source of inspiration, and I am extremely grateful for his commitment to always make time for discussion despite his huge workload.

I must extend this thanks to the entire WaterAid team in Mali: Fatoumata Haidara, Adama Sanogo, Kassim Koroma, Mamadou Diarra, Drissa Traoré, Fistone Pono, Tidiane Diallo, Saleck Ould Dah, Kadiatou Aw, Abdrahmane Coulibaly, Mamadou Keita, Zoumana Doumbia, Mamadou Diallo, Abdoulaye Diallo, Lamine Kamissoko, Djeneba Kassogué, Daniel Kienou, Abdrahmane Bill, Missa Bamba, Moussa Traoré, Crescent Dabou and Samuel. I feel exceptionally lucky that they welcomed me as they did into their lives and work – and that they shared the same warm welcome with Helen and my mum when they came to Mali too. I also thank all the staff of WaterAid's partners for their enthusiasm to engage with the research and make the fieldwork happen, in particular Moussa Sidibé, Moussa Samaké, Sedou Konaré, Konimba Ballo, Ibrahim Doumbia, Lassana Bagayogo and Adama Keita. Beyond WaterAid, I received particular help and advice in Mali from Sory Bouaré, Abdoulaye Savadogo and Sally Sutton. I am also grateful to Yacouba Keita at Wisdom College for his patience in helping me improve my Bambara and French.

Back in London, I am grateful for support and advice from other members of the Geography Department at Royal Holloway, particularly Katie Willis, Sorayya Khan, Fiona Nash, Andrew

Brooks and Hayley Leck. WaterAid staff in London, especially the members of the policy team, helped keep me sane during writing up by providing a friendly alternative workspace to the library once a week. I would also like to thank those I worked with on other activities during the PhD which helped bring a different perspective to the research: Jenny Lunn and Margi Bryant as my fellow postgraduate representatives of the Royal Geographical Society's Developing Areas Research Group, and Hayley Sharp and Ruth Kennedy-Walker as my co-coordinators of the UK Sanitation Community of Practice.

All this was made possible thanks to funding from the Economic and Social Research Council (grant ES/G030243/1) for the whole PhD, including fieldwork and language learning.

Particular personal thanks go to my Bamako housemates Chloé Lermuzeaux, Rika Ott and Mamay Doumbia for their friendship and support; I hope we have the chance to share *yassa poulet* and espresso on a sunny terrace again before too long. I am indebted to my translator, research assistant and friend Mamadou Diop, who was a wonderful companion throughout the fieldwork, on runs in Bamako and during long conversations about current affairs over shots of Malian tea. I am grateful to my family for their encouragement, especially my mum for taking the chance to visit and experience some of my life in Mali. And of course I would not have got here without Helen's moral and intellectual support throughout the emergence of this thesis, whether in Senegal, Mali, Haiti or London. I have been very lucky to share the experience with her.

Finally, the greatest thanks of all must go to all the research participants who made this project possible. I do not name them here, but must express my immense gratitude to them for taking the time to talk openly and patiently with me about their lives and work. I hope for them that Mali's future is more peaceful and secure than its recent past.

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## Glossary

### *Acronyms and abbreviations*

Note: translations by the author are given in square brackets, where applicable.

3Ts	tariffs, taxes and transfers
AfDB	African Development Bank
AMCOW	African Ministers' Council on Water
AMEPPE	<i>Association Malienne pour l'Education du Public et la Protection de l'Environnement</i> [Malian Association for Public Education and Protection of the Environment]
AMPDR	<i>Association Malienne Pour le Développement Rural</i> [Malian Association for Rural Development]
ANICT	<i>Agence Nationale d'Investissement des Collectivités Territoriales</i> [National Agency for Local Government Investment]
APPP	Africa Power and Politics Programme (Overseas Development Institute)
ASACO	<i>Association de Santé Communautaire</i> [Community Health Association]
ASCA	Accumulated Savings and Credit Association
CAEPHA	<i>Coalition pour l'Accès à l'Eau Potable, l'Hygiène et l'Assainissement</i> [Coalition for Access to Water, Sanitation and Hygiene]
CapEx	Capital expenditure
CapManEx	Capital maintenance expenditure
CAR	Capability, Accountability, Responsiveness
CASE	Collaborative Award in Science and Engineering
CLTS	Community-Led Total Sanitation
CN-CIEPA	<i>Coalition Nationale de la Campagne Internationale pour l'Eau Potable, l'Hygiene et l'Assainissement</i> [National Coalition for the International Campaign for Water, Sanitation and Hygiene]
CoC	Cost of capital
CPS/MS	<i>Cellule de Planification et de Statistique du Ministère de la Santé</i> [Planning and Statistics Unit of the Ministry of Health]
CSCOM	<i>Centre de Santé Communautaire</i> [Community Health Centre]
CSLP	<i>Cadre Stratégique de Lutte contre la Pauvreté</i> [Strategic Framework for the Fight against Poverty]
CSREF	<i>Centre de Santé de Reference</i> [Referral Health Centre]
DALF	<i>Diplôme Avancé de la Langue Française</i> [Advanced Diploma in the French Language]
DANIDA	Danish International Development Agency
DFID	Department for International Development (UK)
DNH	<i>Direction Nationale de l'Hydraulique</i> [National Water Directorate]

DNS	<i>Direction Nationale de la Santé</i> [National Health Directorate]
DNSI	<i>Direction Nationale de la Statistique et de l'Informatique</i> [National Directorate of Statistics and Information Technology]
DRHE	<i>Direction Régionale de l'Hydraulique et de l'Énergie</i> [Regional Water and Energy Directorate]
EDSM	<i>Enquête Démographique et de Santé du Mali</i> [Demographic and Health Survey of Mali]
ELIM	<i>Enquête Legere Intégrée auprès des Ménages</i> [Integrated Light Household Survey]
EMEP	<i>Enquête Malienne d'Évaluation de la Pauvreté</i> [Malian Poverty Evaluation Survey]
ESRC	Economic and Social Research Council
ExpDS	Expenditure on direct support
EXPIDS	Expenditure on indirect support
FAN	Freshwater Action Network
FC	faecal coliforms
FCFA	<i>Franc Communauté Financière Africaine</i> [West African CFA franc]
GLAAS	Global Annual Assessment of Sanitation and Drinking-Water (UN-Water)
GNI	Gross National Income
GW	Global Water Initiative
IPA	Innovations for Poverty Action
JMP	Joint Monitoring Programme (WHO/UNICEF)
LCCA	Life-Cycle Costs Approach
MDG	Millennium Development Goal
MEIC	<i>Ministère de l'Économie, de l'Industrie et du Commerce</i> [Ministry of the Economy, Industry and Business]
MTEF	Medium-Term Expenditure Framework
NGO	Non-Governmental Organisation
NIE	new institutional economics
OCHA	Office for the Coordination of Humanitarian Affairs (UN)
ODHD	<i>Observatoire du Développement Humain Durable et de la Lutte Contre la Pauvreté</i> [Observatory of Sustainable Human Development and the Fight Against Poverty]
ODI	Overseas Development Institute
OECD	Organisation for Economic Co-operation and Development
OECD-DAC	Organisation for Economic Co-operation and Development - Development Assistance Committee
OpEx	Operating and minor maintenance expenditure
PDES	<i>Programme pour le Développement Économique et Social</i> [Programme for Economic and Social Development]
PDIA	Problem-Driven Iterative Adaptation

PDSEC	<i>Plan de Développement Social, Economique et Culturel</i> [Social, Economic and Cultural Development Plan]
PEA	political economy analysis
PNAEP	<i>Plan National d'Accès à l'Eau Potable</i> [National Plan for Access to Drinking Water]
PPI	Progress out of Poverty Index
PROSEA	<i>Programme Sectoriel Eau et Assainissement</i> [Sectoral Water and Sanitation Programme]
PRSP	Poverty Reduction Strategy Paper
PSD	<i>Plan Sectoriel de Développement</i> [Sector Development Plan]
ROSCA	Rotating Savings and Credit Association
RWSN	Rural Water Supply Network
Sida	Swedish International Development Cooperation Agency
SNLP	<i>Stratégie Nationale de Lutte contre la Pauvreté</i> [National Strategy for the Fight against Poverty]
SSRHE	<i>Service Sub-Régional de l'Hydraulique et de l'Énergie</i> [Sub-Regional Service for Water and Energy]
STEFI	<i>Suivi Technique et Financiere</i> [Technical and Financial Monitoring system]
SWAp	Sector-Wide Approach
TRDL	<i>Taxe de Développement Régionale et Locale</i> [regional and local development tax]
UNDP	United Nations Development Programme
UNICEF	United Nations Children's Fund
WASH	water, sanitation and hygiene
WHO	World Health Organisation
WMO	World Meteorological Organisation
WSP	Water and Sanitation Programme (World Bank)

#### *Malian terms*

<i>commune</i>	The lowest level of government in Mali, equivalent to a municipality.
<i>cercle</i>	The level of government above <i>commune</i> in Mali, equivalent to a district.
<i>région</i>	The level of government above <i>cercle</i> in Mali, equivalent to a region.
<i>ton</i>	Traditional collective-work or age-group association in Mali.
<i>tontine</i>	Traditional savings group and/or credit association in Mali.
<i>point d'eau moderne</i>	"Modern water point": a water point which meets national norms for providing drinking water in Mali and can do so year-round. In rural areas this can be a borehole fitted with a handpump, a small piped system with tapstands, or a "modern well" (DNH 2007).
<i>puits moderne</i>	"Modern well": a concrete-lined well, usually hand-dug, with a wellhead at reaching at least 0.6m above the ground (DNH 2007). A cover is not specified.

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## Chapter One - Introduction

### 1.1. Sustainability and financing of rural water services

In 2012, it was announced that the Millennium Development Goal drinking water target - to halve the proportion of the global population without sustainable access to safe drinking water between 1990 and 2015 - had been met in 2010, five years ahead of schedule. However, over 780 million people worldwide remain without access to water from improved sources, 650 million of whom live in rural areas (WHO/UNICEF JMP 2012b). Furthermore, problems of the sustainability of water services remain. The term “sustainable access” in the MDG target has yet to be adequately defined and measured, as the JMP acknowledges,<sup>1</sup> but figures suggest that at any one time 30% or more of all rural water systems in developing countries are non-functional (Baumann 2009; RWSN 2010). Therefore many services are failing to achieve sustainability in terms of the broad definition of continuing to work and deliver benefits over time (Abrams et al. n.d., in WaterAid 2011b). As coverage increases but problems of sustainability persist, there is a high risk of ‘slippage’: coverage stagnating or even falling, in spite of new investment, because old infrastructures fail at least as fast as new ones are built (Reddy et al. 2010). As the title of UN-Water’s Global Annual Assessment of Sanitation and Drinking-Water (GLAAS) 2012 report states, we face “the challenge of extending and sustaining services” - or, more succinctly, we must work out how to reach “everyone, forever” (Water for People 2013).

These concerns are not new; the difficulty of achieving sustainable water services in developing countries, especially rural drinking water supplies, has been known since at least the 1980s. Yet false assumptions and myths about how to deliver rural water services have persisted in policy and practice (Carter et al. 1999a; RWSN 2010). One of these is unrealistic optimism concerning the ability of the widespread community-based management approach to address these problems (WaterAid 2011b). The limits to the typical model of voluntary water committees, who are usually responsible for organising day-to-day operation and maintenance, tariff-collection and arranging minor repairs, are widely documented (e.g. Schouten and Moriarty 2003; Lockwood and Smits 2011; WaterAid 2011b). Therefore the rural water sector is gradually shifting away from a reliance on community

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<sup>1</sup> “Use of an improved water source” was instead agreed as a proxy indicator for the purposes for the MDGs.

management towards a more holistic approach of local service providers (whether community-based, public or private operators) supported by a combination of local government, NGOs and the private sector, within a sufficiently enabling national policy and planning environment (Lockwood and Smits 2011).

An essential element of such an approach is the development of adequate frameworks for financial planning, which include all costs involved in providing rural water services and identify how these costs will be shared between different actors. Particular issues include defining and financing the recurrent costs of rural water supply: at local levels these are operation and minor maintenance expenditure, capital maintenance expenditure, and the costs of ongoing support to service providers (Fonseca et al. 2011). However, financial planning for recurrent costs is a common weakness in the rural water sector (Lockwood and Smits 2011), and a better understanding of costs and cost drivers in different contexts has been identified as one of the key areas where the sector requires greater evidence (DFID 2012).

In this thesis I use a case study of the work of the international NGO WaterAid and its partners in Mali to understand how the recurrent costs of rural water services are shared between different actors, including the users themselves, local and national government, and WaterAid and other NGOs. WaterAid was the official non-academic collaborating partner in the research, which enabled me to work closely with the organisation and its staff in Mali and the UK throughout the process of researching cost-sharing and service delivery approaches.<sup>2</sup> I analyse how these cost-sharing arrangements have emerged, assess the associated levels of service received by users under current levels of expenditure, and show the gaps between actual expenditure and the costs likely to be necessary for delivering sustainable basic rural water services.

From the analysis of this empirical evidence I draw out the implications for community-based management as a service delivery model for rural water supply and for decentralised local government as a means of supporting community management. I try to understand what role NGOs such as WaterAid can play in promoting pro-poor sustainable financing approaches for rural water services. Moving the debate beyond the water sector, I

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<sup>2</sup> The research was funded by the Economic and Social Research Council as a Collaborative Award in Science and Engineering (CASE), a scheme which promotes partnerships between universities and non-academic organisations through financing collaborative PhD studentships.

then place this research in the context of other work on the role of external organisations in influencing institutional change and the delivery of public services in developing countries. In the rest of this chapter I introduce these wider debates about politics and institutional change, explain why Mali and the work of WaterAid represent a relevant case study for this research, summarise the key research themes and questions, and set out the structure of the thesis.

## **1.2. Understanding politics and institutional change**

Throughout this thesis I argue that the issues of sustainability and financing of rural water services must be analysed within their wider political contexts, and particular attention must be paid to understanding the role of external organisations such as NGOs in influencing institutional change. As Lockwood and Smits (2011: 145) argue, it is essential to address “what can be termed the political economy of rural water ... a complex backdrop of powerful interests, competing agendas and dynamics, many of which are never formally captured in sector documentation or evaluations.” Academics have also concluded that there is a growing need for political economy perspectives which can help water sector policymakers and practitioners (Mollinga 2008; O’Meally 2009; Welle et al. 2009; Cleaver 2012).

Therefore in this research I develop an analytical framework which draws on two areas of work: forms of “political economy analysis” (PEA) used by international donors and think tanks, and academic literature on analysing institutional change for managing natural resources and delivering public services. The aim of this approach is to develop a framework which helps analyse the complexities of political economy and institutional change in a way which is both academically rigorous and can provide useful guidance for practitioners and policymakers.

My argument is that existing donor-supported political economy analysis approaches provide two useful starting points. Firstly, such forms of political economy analysis can provide a systematic approach to analysing the relationships between key actors, institutions (defined as formal and informal rules, norms and arrangements, which can also exist or be represented in the form of organisations) and structural factors (such as



historical processes, demographic trends and environmental issues) in a given country or sector context. Secondly, political economy analysis approaches also emphasise the roles of external organisations such as donors and NGOs themselves, and the need for these actors to adopt 'best fit' or 'good fit' approaches. This means working with existing institutions in a way that is sensitive to the realities of the particular country and sector rather than trying to import 'best practice' institutions which may not fit the context (Booth 2012).

However, I extend these political economy analysis frameworks using further work by academics which draws on a variety of fields including geography, anthropology, sociology, political science, economics and management. The areas of literature that I use share a concern with how different parts of academia, policy and practice understand institutions, institutional change and the influence of external actors. As Booth (2012: 92) comments on the approaches of international donors and NGOs: "rejection of one-size-fits-all remedies, and the will to replace 'best practice' with 'good fit' approaches to institutional design, is at least a decade old ... yet the new thinking still looks a lot like the old thinking." Therefore I combine the work by donors and think tanks on political economy analysis with more in-depth academic approaches to analysing institutional change which can help understand how such processes of change really happen.

In particular, I use three areas of literature concerned with the role of external actors in institutional change in developing countries (summarised in Cleaver 2012; Booth 2012; Andrews 2013), which focus in turn on community-based natural resource management, decentralised local governance and the delivery of public services, and national-level public sector reform. All three of these areas are crucial to the issue of rural water services, and provide theoretical insights which help explain how approaches to service delivery evolve at community, local government and national levels. By linking these different areas of literature I respond to Cleaver's (2012) suggestion to place detailed analysis of institutional change within a broader framework which helps bridge different scales.

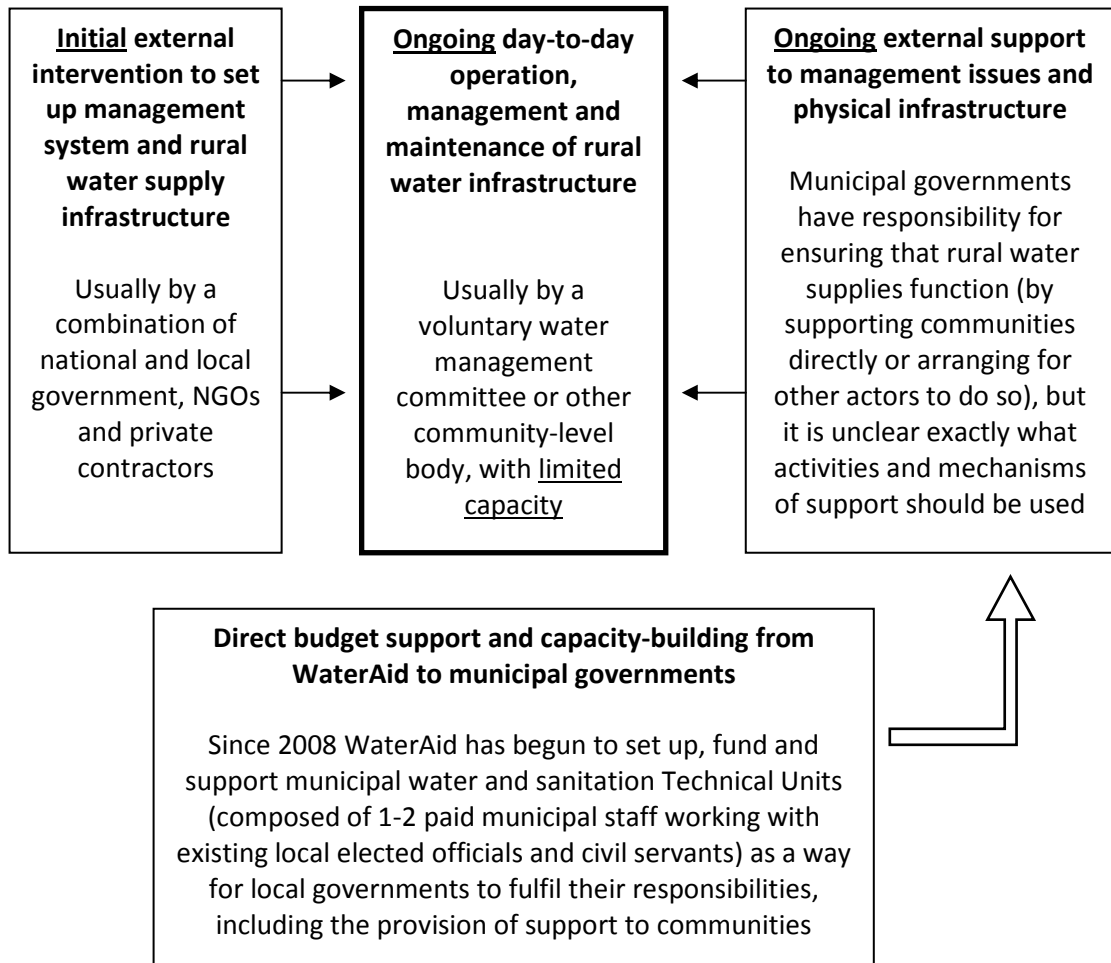
### **1.3. The Mali context and WaterAid's approach**

Mali is a useful case study for this research because it fits into the category of countries identified by Lockwood and Smits (2011) where access to rural water supply has reached

between 50% and 70% and is expanding, but where there is also a high risk of 'slippage' (Reddy et al. 2010) if the challenge of sustaining services is not adequately addressed. Mali's average coverage in rural areas is 71% according to figures from the national water directorate (DNH 2010), but 51% under JMP figures (WHO/UNICEF JMP 2012a), which are based on usage rather than coverage. Taking these figures as upper and lower bounds shows that Mali is in this challenging 'danger zone'. Estimates of the functionality of rural water points in Mali are that about 30% of handpumps (which represent the most common improved water source in rural areas) are non-functional (DNH 2008a; WaterAid Mali 2010), highlighting the challenge of sustainability. As Lockwood and Smits (2011: 148-9) argue, countries in this situation experience "an in-built tension between pursuing increased coverage (with inadequate budgets and growing populations), while at the same time addressing sustainability in a more structured way."

Mali is also one of many countries where community-based management of rural water supplies is a core element of national policy, accompanied by decentralisation reforms that emphasise the role of local governments in ensuring that communities are adequately supported. This scenario corresponds to that shown in Figure 1.1 (adapted from WaterAid 2011b: 7), which highlights the need for some form of ongoing external support to community management. One of the key issues in Mali is what this support entails and how it can be provided (World Bank 2008; USAID 2010), a question that WaterAid directly addresses through its work at municipal level.

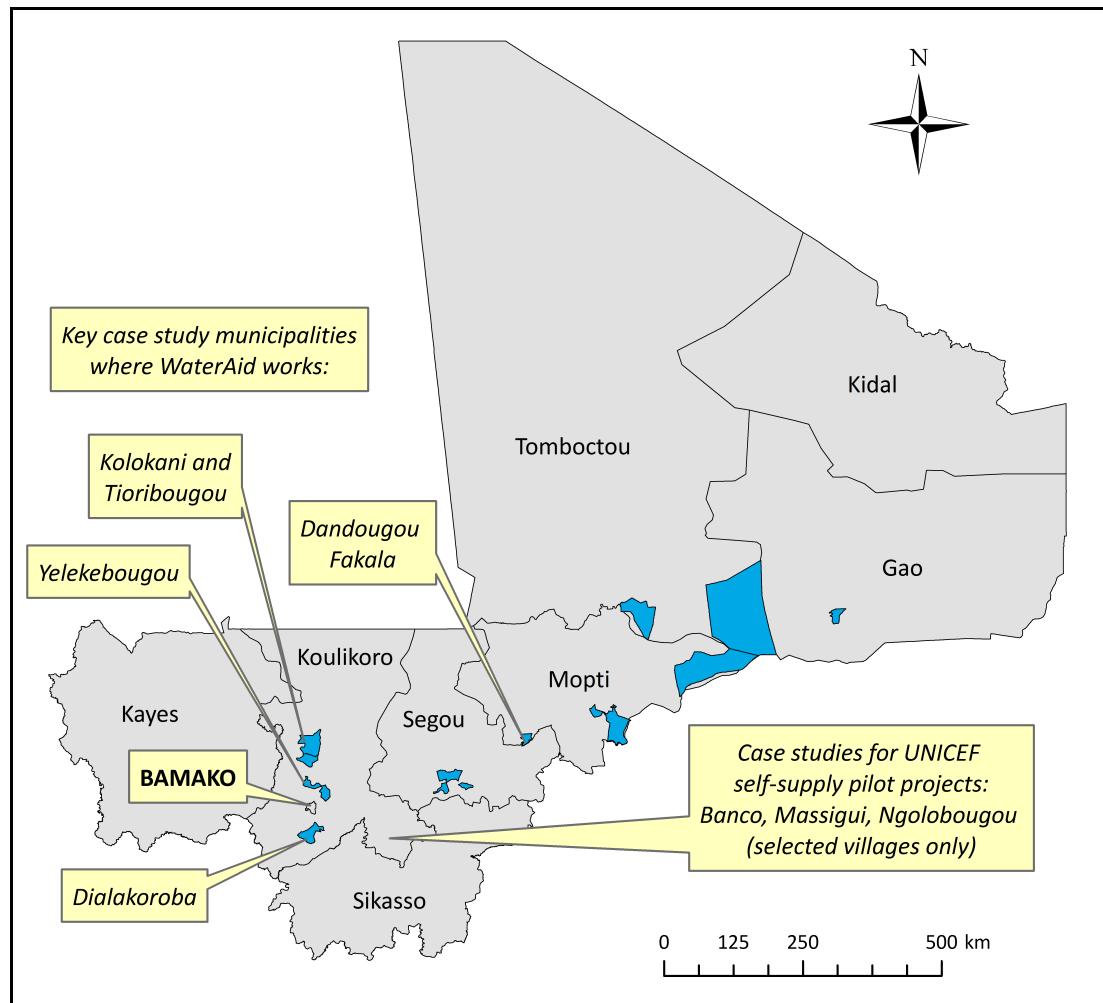
Figure 1.1. The need for external support to community management of rural water supply and WaterAid's approach to working with local governments in Mali to ensure this support (adapted from WaterAid 2011b: 7)



WaterAid has been active in Mali since 1999, and by 2012 had spread its work to a total of 23 urban and rural municipalities. During its second official country strategy from 2006 to 2011, the organisation developed its focus on decentralisation and local governance of water and sanitation (WaterAid Mali 2010). This included, from 2008, beginning to set up water and sanitation Technical Units within selected municipal governments as a means of helping expand coverage and provide external support to community management, a model that I analyse in detail in Chapter Six. This approach involved direct budget support from WaterAid to these municipalities to fund the staff and overheads of the Technical Units (with its other partner municipalities, WaterAid works with local NGOs and the municipalities in a 'tripartite' arrangement, where funding from WaterAid goes to the local NGO rather than the municipality).

Figure 1.2 shows Mali's nine regions, including the capital Bamako. WaterAid works with a total of 15 rural municipalities (highlighted in blue) in the regions of Koulikoro, Segou, Mopti, Tomboctou and Gao, as well as urban municipalities in Bamako.

Figure 1.2. WaterAid's areas of work in Mali and case study municipalities for this research<sup>3</sup>



As explained in detail in Chapter Four, this research focused predominantly on four municipalities in the Koulikoro region (Dialakoroba, Kolokani, Tioribougou and Yelekebougou) and one municipality in the region of Mopti (Dandougou Fakala). Three of the selected municipalities are the first three examples of WaterAid's direct partnership approach to working with local government, and all of the chosen municipalities have

<sup>3</sup> Map of Mali adapted from IOM (2013), *Mali Admin Level 1 Boundaries*, retrieved 25 June 2013, <[http://cod.humanitarianresponse.info/search/field\\_country\\_region/mali](http://cod.humanitarianresponse.info/search/field_country_region/mali)>.

relatively high levels of coverage compared to the Mali rural average, so may be at the stage where sustainability becomes an increased concern for local stakeholders in addition to expanding coverage to new users. As shown in Figure 1.2, additional research on pilot projects promoting water provision by households themselves ('self-supply') was conducted in some municipalities outside WaterAid's areas of intervention.

The research for this thesis was undertaken during 2010 and 2011, which included the period in mid-2011 when WaterAid introduced the organisation's new *Sustainability Framework* (WaterAid 2011). The framework is based on an expanded version of the upper three boxes of Figure 1.1 which specifies in more detail the key factors required for sustainability, in terms of real need and demand on the part of the users, the essential aspects of the programme design and implementation stage, the elements of the community-based management system itself, and the components of long-term external assistance. As can be seen from considering Figure 1.1 and the description of WaterAid's work above, the organisation's approach already emphasises the importance of external support to community management. The *Sustainability Framework* was therefore used by WaterAid and its partners as a tool to analyse in greater detail the strengths and weaknesses of their work at municipal levels against each element of the framework, in order to identify the aspects which posed the greatest challenges to sustainability. The arrangements for sharing recurrent costs were identified as one key challenge.

This research was set up from the start as a collaborative project, with WaterAid as the non-academic partner, and so the activities emerging from the introduction of the *Sustainability Framework* provided an opportunity to deepen this collaboration, which I discuss in Chapter Four. Throughout the partnership with WaterAid my aim has been to support action research which engages as closely as possible with those - such as communities, local governments and NGOs - who have key roles in learning about what works and acting upon this knowledge. In this approach I have tried to follow Carter's (2013) argument that research in water, sanitation and hygiene should focus less on the quantitative impacts of improved services (*why* WASH is important) and more on the practical challenges of *how* to deliver such services "more effectively, cost-effectively, and above all, sustainably" (Carter 2013: 4).

The evidence in this thesis is therefore based on data from the period of WaterAid's work

between the introduction of the direct partnership approach with some municipal governments in 2008 and the use of the *Sustainability Framework* to reflect on its approach in 2011. However, in 2012 Mali suffered a coup d'état and subsequent political and humanitarian crisis, forcing WaterAid to adjust its priorities and approach and preventing the completion of all the research planned as part of this project. At the time of writing in early 2013, I argue that the evidence presented still provides useful lessons for Mali and WaterAid which will become more relevant again in future provided the country is able to return to some level of peace and stability.

#### **1.4. Research themes and questions**

This thesis addresses questions under three key themes. The first theme concerns the empirical investigation of how the recurrent costs of rural water services are shared between different actors where WaterAid works in Mali and what levels of service are received by users. The second theme, building on the first, assesses the implications of these cost-sharing arrangements for current approaches to delivering rural water services. In particular, this theme concerns the ability of the model of community management supported by decentralised local government to deliver sustainable services. The third theme is the role played by NGOs such as WaterAid in promoting sustainable approaches to financing and service delivery. Underlying all these themes is the conceptual debate introduced in Section 1.2 about institutional change and the role of external actors. This literature is used to help explain the empirical findings under the first theme and to support the analysis in the second and third themes of the potential and limits of current service delivery approaches and the role of NGOs.

##### *Cost-sharing and service levels*

Firstly, how and why are the recurrent costs of rural water services at community and local government levels shared between different actors where WaterAid works in Mali? Secondly, what are the levels of services received by users which are associated with these cost-sharing arrangements? More specifically:

- What are the respective contributions of users, local government, WaterAid and other NGOs, and central government to the different components of the recurrent costs of

rural water services?

- How and why have these cost-sharing arrangements emerged? Following a political economy analysis framework, what are the influences of structural factors, institutions and actors at different scales? How have these institutions emerged?
- What are the levels of functionality of the infrastructures in question - do they work or not?
- What water points do people actually use? Are these improved or unimproved sources?

#### *Approaches to service delivery*

What are the implications of the cost-sharing arrangements and service levels observed for community-based management as a service delivery model for rural water supply and for decentralised local government as a means of supporting community management? More specifically:

- If there are gaps between the finances that community management bodies and local governments are intended to mobilise in policy and what they actually achieve in practice, what are the prospects for overcoming these gaps?
- What are the limits to what users are able and willing to pay?
- Should alternative models of service delivery be considered instead of community management?

#### *The role of NGOs*

How can NGOs such as WaterAid promote sustainable financing approaches? More specifically:

- What are the opportunities and constraints related to influencing national sector policy?
- What is the influence of WaterAid and its partners on institutional change at community and local government levels?
- Are the approaches promoted by WaterAid at community and local government levels feasible for wider scaling-up?

## **1.5. Thesis structure**

In this section I summarise how the remainder of the thesis is structured. Chapters Two, Three and Four review the literature to show how the research questions were developed and set out the analytical framework and research methodology adopted to answer the questions. Chapters Five, Six and Seven present the results, analysis and discussion in line with the research themes and framework. Chapter Eight concludes by summarising the evidence, highlighting the key findings and messages for theory, policy and practice, and proposing directions for future research. I now set out the key contribution of each chapter to the overall argument of the thesis.

Chapter Two reviews the literature to explain why the research questions are important and to place this study within the context of wider practical and theoretical debates about how to deliver sustainable and equitable rural water services in low-income countries. The chapter begins with a historical perspective on the challenges of sustainability and financing, and then examines in more detail the role of users in relation to the issues of tariffs, cost recovery, affordability and willingness to pay. I then widen the scope of the review to discuss the role of decentralised local governments in the delivery of rural water supply and other public services. The chapter ends by discussing the national enabling environment, the role of central governments, and the influence of NGOs and civil society. Throughout the literature review I highlight the key questions arising and the importance of analysing politics and institutional change.

The argument developed in the literature review - why politics and institutions matter for the sustainable financing of rural water services - leads into Chapter Three, which sets out an analytical framework for addressing these issues in relation to the research questions. I argue for an approach which is both sensitive to the complexities of the processes involved and can help develop practical guidance for practitioners and policymakers. The framework developed therefore draws both on political economy analysis approaches used by international donors and more theoretical academic work on analysing institutional change. I conclude this chapter by summarising the key conceptual questions of the research and showing how the analytical framework is used to link the results, analysis and discussion presented in Chapters Five, Six and Seven.



Chapter Four presents the research methodology and the partnership with WaterAid. In particular, I discuss the challenge of balancing the need for the research to contribute to policy and practice as well as academic knowledge, drawing on a framework developed by Cleaver and Franks (2008) for considering the tensions experienced by researchers in the water sector in responding to these different demands. This section includes a reflection on the influence of my own personal and professional motivations on how the research developed. In this chapter I also address the limitations of the research and the implications for the subsequent results. This includes a discussion of the effect on the research of the coup d'état that Mali suffered in 2012, which prevented my return to the country for the final periods of fieldwork that had been planned.

In Chapters Five, Six and Seven, I examine the evidence from the research in relation to the research questions and the analytical framework. Chapter Five focuses on the relevance of the national and sector-level context in Mali to policy and practice concerning sector financing. I discuss in particular the structural factors of aid dependency and the influence of donors, the history of decentralisation reforms and the state of civil society in Mali. I then focus on the historical evolution of the rural water supply sector itself and how the national policies and institutional framework concerning financing water services have emerged. I also discuss key actors in the sector and the particular role of WaterAid in national-level advocacy. This chapter begins to address the issue of how the financing policies that exist on paper actually work in practice, drawing on the work of Andrews (2013) concerning policy reform and institutional change at national and sector levels. This question is developed further with evidence from municipal and community levels in Chapters Six and Seven.

Chapter Six is where I address municipal-level issues in detail. Although this thesis focuses on the issues of sustainability and the financing of recurrent costs, in this chapter I also consider planning and capital investment for new infrastructure. These are key elements of the role of municipalities for rural water supply, and help highlight general challenges faced by municipal governments in obtaining financing, and the role of WaterAid in helping to address these. I then examine the role of decentralised local governments further through an analysis of how the recurrent costs of rural water services are shared. This includes a comparison of the approach promoted by WaterAid to another model proposed for supporting community management, which provides evidence for discussing different interpretations of the role of local government in ensuring support to communities. The

cost-sharing arrangements observed also act as a starting point for discussing how WaterAid's partners interpret national policies in their local contexts, a theme which is explored through further detailed case studies in Chapter Seven.

The focus of Chapter Seven is the role of users themselves in financing rural water services, using evidence from community and household levels. I examine the differences between policy and practice at these levels, and develop further the analysis of the role of WaterAid's partners in supporting different approaches to local financing. I draw on the idea of "institutional bricolage" (Cleaver 2012), set out in the analytical framework, for understanding how village-level institutions for financing water services emerge from a mixture of different influences, including traditional community practices and more formal or modern ideas from NGO and local government staff. I also place the evidence on how water services are financed within the context of wider issues of household and community expenditure, and present the levels of service received by water users associated with the approaches analysed. Finally, I consider evidence from initiatives for promoting 'self-supply' in Mali, where individual households or small groups of households are encouraged to develop or improve their own water supplies as an alternative or complement to community-based sources.

Chapter Eight concludes the thesis by drawing together the evidence in the analytical chapters related to each theme in order to answer the overall research questions, both practical and conceptual. I first summarise the quantitative and qualitative findings presented concerning how and why costs are shared between different actors. I then move from a position of using theory in order to help explain the evidence observed, to using the findings of this research as a way of extending existing theories of institutional change, highlighting the conceptual contributions that this thesis makes to the academic literature. I summarise the contributions of this research to practice and policy debates about how to deliver rural water services, and include recommendations for WaterAid and other organisations working on this issue in Mali and elsewhere. Finally, I identify possible directions for future research that could build on the work undertaken here, including the application of the extended political economy analysis framework to the post-coup context in Mali.

## **Chapter Two - Literature review**

### **2.1. Introduction**

In this chapter I review the literature to set out the background to the key research themes introduced in Chapter One. I highlight how the questions posed under each theme build on and contribute to existing knowledge and debates. I first provide further context to the issue of sustainability and financing of rural water services by reviewing key historical trends in the sector and the need to move towards approaches which include planning and financing for all life-cycle costs (Section 2.2). In Sections 2.3 and 2.4, I then discuss in more detail the respective roles of users and local governments in service delivery and financing. These sections demonstrate the relation between the research themes of cost-sharing arrangements and approaches to service delivery. I also review the importance of national policy environments and the roles of central governments and donors (Section 2.5). Finally, Section 2.6 addresses the role of NGOs and civil society in influencing these other actors in moving towards sustainable financing mechanisms and service delivery approaches.

In each section of the literature review I briefly explain the relevance of each topic to rural water supply in Mali, and why the country is a useful case study to contribute to these debates. However, I undertake the detailed analysis of the Mali context and the work of WaterAid as part of the empirical work in the later chapters of the thesis. Throughout this literature review, it becomes clear that it is essential to analyse how systems for delivering public services might change and to address issues of political economy beyond the water sector. However, I place the detailed discussion of how to approach such an analysis in Chapter Three, where I set out the overall analytical framework for the research.

### **2.2. The problem of the sustainability of rural water services**

#### **Sustainability and community management in historical perspective**

The difficulty of achieving sustainable water and sanitation services in developing countries, especially rural drinking water supplies, has been noted since at least the 1980s (for example Feachem 1980; Carter et al. 1993; Katz and Sara 1997; Davis and Iyer 2002; RWSN

2011). In this section I provide a historical perspective to this problem by summarising the key shifts in practice and policy in the rural water sector since the 1960s (i.e. since the end of colonialism and the move to independence in most countries in sub-Saharan Africa). I focus on those changes which have been closely linked to discussions on sustainability.

In the colonial era, prior to the 1960s, most formal water systems developed were designed to serve the colonisers rather than the indigenous populations and as a result there were few engineered water systems in rural areas (Mader 2012). There were some examples of initiatives by colonial administrators to promote and support community self-help to improve water access, which bore a resemblance to ideas of community participation that also emerged later (Page 2005), but otherwise rural communities were entirely self-reliant (Cleaver and Toner 2006). Post-independence, the general emphasis was on the development of piped urban infrastructure, implemented by central governments and managed by urban municipalities (e.g. in small towns). There were the beginnings of some implementation of new infrastructure for rural areas but otherwise rural communities typically continued to rely on self-provision (e.g. Thompson et al. 2001).

By the 1970s, there was a growing recognition that the vast majority of the poor, especially in rural areas, were unserved by existing approaches and there was a need for something different (Black 1998). At a similar time, an 'appropriate technology' movement was emerging, along with the development of lower-cost infrastructure options proposed for rural areas such as standardised handpumps (e.g. the India Mk II). In 1977, the first global-scale water conference was held in Mar del Plata, at which international public health experts had as their "behind-the-scenes" objective (Black 1998: 4) the aim of getting governments and donors (especially the World Bank) to move away from their focus on expensive conventional urban water schemes which did not reach the poor. The potential of lower-cost approaches using 'appropriate technology' and increased community involvement therefore seemed to provide an alternative proposal that donors might be willing to fund (ibid). The Mar del Plata conference led to the declaration of 'Water and Sanitation for All' and the 1980s as the UN International Drinking Water Supply and Sanitation Decade, with a target of universal access by 1990. Community participation was adopted as one of the principles of the Decade (Schouten and Moriarty 2003), despite scepticism at the time. For example, Feachem (1980: 15) concluded that community participation was a concept that "diverts attention away from the fundamental political and

administrative realities that primarily determine the success or failure of rural water and sanitation programmes."

During the 1980s, rural water services were still often supply-led in practice, both in terms of implementation and management (Black 1998; Nicol et al. 2012). However, centralised maintenance schemes for rural water infrastructure such as handpumps were often unable to cope, resulting in long downtimes and failed infrastructure (Black 1998; Colin 1999). Communities themselves were supposed to play an increasing role in delivering water services, partly in hope that this would improve the effectiveness of service delivery, but also for wider reasons related both to promoting community empowerment and replacing state capacity lost during the structural adjustment programmes of the time (Schouten and Moriarty 2003). The rise of community participation and then community-based management therefore reflected both pragmatic and ideological reasons (Harvey and Reed 2007). By the end of the 1980s the idea of community participation was well-established in practice, and community-based management was widespread by the mid-1990s (Lockwood and Smits 2011).

The early 1990s then saw a series of high-level international conferences reflecting on the International Drinking Water Supply and Sanitation Decade. Nicol et al. (2012: 5) argue that these meetings represented the rise of "a global high politics of water" which became increasingly disconnected from realities on the ground. The 1990 New Delhi statement (UNDP 1990) tried to emphasise "some for all, not all for some" to acknowledge the failures of the Decade, and suggested that demand-responsive approaches, community management and user fees should be further promoted to help address the problem of sustainability.

However, the New Delhi conference and statement were "eclipsed" (Nicol et al. 2012) by the 1992 International Conference on Water and the Environment in Dublin which placed an even stronger emphasis on viewing water as an economic good, in order to promote its efficient and sustainable use (WMO 1992). As Black (1998: 55) put it, the logic behind this consensus was that "only if people attached to [an engineered water supply] a quantifiable value which could be factored into costs would there be any kind of guarantee that an engineered service would be sustainable - and sustained." However, critics argue that this shift represented part of the international financial institutions' wider 'Washington

Consensus' of promoting the increased role of the market and the reduced role of the state in providing public services, rather than an approach based on empirical evidence of what worked for delivering services in different contexts (Budds and McGranahan 2003; Goldman 2007; Nicol et al. 2012).

By the 2000s there was increasing evidence of the limits to what communities were able to do by themselves or with limited support, and there were growing arguments in the sector for placing greater focus on what long-term support from other actors was needed by community management bodies and how this support could be provided. Terms such as "post-construction support", "community management plus", "direct and indirect support" and "external support" became common (Kleemeier 2000; Lockwood 2002; Baumann 2006; Lockwood and Smits 2011; WaterAid 2011b). However, there is not yet consensus on what support is needed and how important it is (see Whittington et al. 2009; Smits et al. 2011). I discuss this further in Section 2.4 in the context of the decentralisation of public services. It is also important to note a caveat to the sustainability and community management debate: although community management is now the dominant approach it is not the only management model for rural water supply (Harvey and Reed 2007; Lockwood and Smits 2011). I discuss an alternative model of self-supply in Section 2.3.

Whether rural water services are delivered through a form of community management or not, it is clear from the history of debates outlined above that attempting to analyse and understand the relation between the forms and outcomes of service provision and the relevant political economy context is crucial. The links between water, politics and power have long been of interest to academics, and have in recent years become more prominent in international policy debates (Mollinga 2008); the 2006 Human Development Report *Beyond Scarcity: Power, Poverty and the Global Water Crisis* (UNDP 2006) is perhaps the most high-profile example. Given the importance of addressing political economy, I dedicate Chapter Three to reviewing how these issues might be analysed and developing my own framework for doing so. In the rest of this chapter I review the specific literature relevant to the other key aspects of delivering rural water services that I introduced above.

## Matching life-cycle costs to sources of financing

For rural water services to be sustainable, the full costs of providing the services must be matched to sufficient sources of financing, indefinitely. This is not a new or surprising statement. However, most countries still lack adequate frameworks for financial planning which can cover all the long-run costs of rural water services (Lockwood and Smits 2011; WaterAid 2011b). Responsibilities are usually defined for financing capital expenditure for new infrastructure and basic operation and maintenance of existing infrastructure. However, there are further categories for which the actual costs involved are often poorly understood, and the responsibilities for financing these costs are poorly defined.

Different approaches exist to classify these costs (see for example Waughray and Moran 2003; Harvey and Reed 2004; Baumann 2006; Harvey 2007). This thesis uses the definitions for the different cost components of water services proposed by the WASHCost project from the IRC Water and Sanitation Centre, referred to as the “life-cycle costs approach” or LCCA.<sup>4</sup> These categories are summarised in Fonseca et al. (2011) and shown in Table 2.1. Fonseca et al. (2011) refer to these as the “life-cycle costs” of services, but in contrast to common usage of the term ‘life-cycle’ the phrase is not used in the sense of “cradle-to-grave”. Instead, Fonseca et al. use “life-cycle costs” to mean the overall costs required to maintain sustainable services rather than just the life-cycle of a particular asset.

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<sup>4</sup> This approach has become increasingly recognised as a useful framework for the sector to analyse costs (DFID 2013). For example, as I discuss in Chapter Three, six other WaterAid country programmes started research on the sustainable financing of WASH services during the course of this research project, based on the principles of the WASHCost life-cycle costs approach.

*Table 2.1. Component costs of water services (Fonseca et al. 2011)*

Capital expenditure – hardware and software (CapEx)	Expenditure on fixed assets such as physical infrastructure (for initial construction or system extension), and the accompanying ‘software’ such as capacity-building.
Operating and minor maintenance expenditure (OpEx)	Expenditure on labour and materials needed for routine maintenance which is needed to keep systems running, but does not include major repairs.
Capital maintenance expenditure (CapManEx)	Renewal, replacement and rehabilitation costs which go beyond routine maintenance.
Expenditure on direct support (ExpDS)	Costs of ongoing support to users and local stakeholders, for example on local government or district support staff.
Expenditure on indirect support (ExpIDS)	Costs of higher-level support, such as government planning, policymaking and regulation.
Cost of capital (CoC)	Costs of servicing capital such as repayment of loans.

It is important to note the distinction between financial costs - used here - and wider economic costs. Economic costs can be thought of as the wider opportunity and environmental costs to society (Cardone and Fonseca 2003). For example, over-extraction of groundwater via a borehole has an environmental cost to others even if the immediate financial costs of pumping are recovered (Waughray and Moran 2003). However, there may also be wider economic savings from a water and sanitation project, for example due to improved health and lower spending required on healthcare services (Cardone and Fonseca 2003). Although work has been done on economic cost-benefit analysis in the water and sanitation sector, in this research I focus on financial costs only.

The possible sources of financing for the life-cycle costs of rural water services are commonly referred to as “the 3Ts”: tariffs, taxes and transfers (OECD 2009, building on Winpenny 2003). ‘Tariffs’ is used in this sense to describe all contributions from the users themselves, including informal payments which might not usually be thought of in the strict



sense of tariffs. 'Taxes' refers to financing from domestic taxation in the country concerned, and highlights the importance of understanding the roles of local and central government. 'Transfers' represents financing from external donors, such as bilateral or multilateral organisations or NGOs.

In the subsequent sections of this chapter I examine the literature on the role of different actors and sources of financing. As I explained in Chapter One, this research focuses on the recurrent costs of rural water services that occur at community and local government levels, rather than the costs of indirect support and cost of capital at national levels. The WASHCost project itself found that:

Little data was available on indirect support costs [i.e.] the costs at national and regional level of developing a legal and policy framework for rural water services delivery and of relevant staff and training at those levels. The cost of capital remains an important concept as countries move towards financing water services themselves, but [in the research areas] there were virtually no loans to finance the services sampled, which were financed from government allocations or transfers from donors or by NGOs, and to some extent by user fees. (Burr et al. 2012: 5-6)

It is necessary to consider costs in relation to the actual level of service received by water users. The WASHCost project proposes a set of service levels and indicators for water supply to permit comparison of the costs involved in delivering a certain level of service in different contexts and through different approaches (Moriarty et al. 2010). The service levels are based on criteria of quantity, quality, accessibility (time taken to obtain water) and status of the source (improved or unimproved). For each criterion, the framework is designed to be adapted to national norms in the relevant country. For the purposes of international comparison, a "basic" level of service is defined as:

...when all the following criteria have been realised by the majority of the population in the service area: People access a minimum of 20 litres per person per day, of acceptable quality (judged by user perception and country standards) from an improved source which functions at least 350 days a year without a serious breakdown, spending no more than 30 minutes per person per day (including waiting time). (WASHCost 2012: 1)

This definition is roughly equivalent to the national standards for access to drinking water in Mali. These norms are based on 20 litres per person per day of acceptable quality within 500m (DNH 2007), although reliability is not defined.

### **2.3. Users and their role in financing and service provision**

#### **Tariffs and cost recovery**

As explained in Section 2.2, the term ‘tariffs’ in the 3Ts framework refers to all user contributions, whether these are through a formal system of payment (for example, per volume of water consumed or on a monthly or annual basis per user or per household) or more informal approaches (such as users collecting money for a repair in a more ad hoc fashion after a breakdown has already occurred). The term ‘cost recovery’ has sometimes been used to refer in general to the costs of water supply which are financed through tariffs (McDonald and Pape 2002). However, this definition is unhelpful if it is used just to refer to what is paid by users, without considering what costs this contribution actually covers and how it fits with other sources of financing (Cardone and Fonseca 2003). Therefore a distinction should be made between “full cost recovery” and “sustainable cost recovery” (Winpenny 2003; OECD 2009).

“Full cost recovery” occurs when all costs of water services are financed through user tariffs, i.e. the sector’s financing is ringfenced and does not receive subsidy from other sources of revenue such as taxes (McDonald and Pape 2002; Bayliss 2003). Full cost recovery does not preclude cross-subsidies between users within the sector itself (Cardone and Fonseca 2003; Waughray and Moran 2003). These typically take the form of increasing block tariffs, where the price per unit of water increases with increasing consumption levels. The price of the lowest ‘block’ will be below the marginal cost of supply (or even free – known as a ‘lifeline’ tariff) so that higher consumers effectively subsidise lower consumers. In theory, those who can afford to pay more do so, and are also discouraged from wasting water, while the poor are still able to access basic amounts of water at an affordable price. This approach is more common in urban areas where formal tariff systems with metering and billing are in place. However, similar ideas are sometimes adopted even for rural water points, for example by

setting different fees for different types of use, such as lower fees for water for drinking and higher fees for higher-consumption uses such as watering animals (Jones 2010).

Many of the controversies around the debate regarding water as an economic good centre on the issue of cost recovery from users, and the extent to which this clashes with the human right to water. Some have argued that the international policy debates since the 2000s have essentially been about people arguing from each of these two paradigms (Mader 2012). Those arguing from a rights perspective highlight the inequity in stating that “full cost recovery from users is the ideal long-term aim”, as the so-called Camdessus report - the Report of the World Panel on Financing Water Infrastructure (Winpenny 2003) - put it.

However, even those who have argued that full cost recovery is the ideal long-term aim recognise that there are many cases where this is not currently feasible or desirable (Winpenny 2003: 19). Instead, “sustainable cost recovery” is seen as more realistic “as a way of giving the water sector the financial assurance it needs, while acknowledging affordability problems and the case for subsidies in certain cases” (ibid). This means that a mix of the 3Ts is used to finance capital and recurrent costs (OECD 2009). In practice, the most common scenario is that users are responsible - whether in policy or by default - for the recurrent costs of operating and minor maintenance expenditure and capital maintenance expenditure (WaterAid 2011b). However, it is not always clear whether users should or can pay for capital maintenance expenditure as well as operating and minor maintenance expenditure, and where the distinction lies between these two types of costs (Harvey and Reed 2004). Therefore despite a widespread acknowledgement that “sustainable cost recovery” through a mix of the 3Ts is required in principle, it is often not agreed exactly what parts of these costs should be covered by user tariffs in practice.<sup>5</sup>

For example UN-Water’s 2010 GLAAS (Global Assessment of Sanitation and Drinking Water) report suggests that over the life-cycle of rural water services, recurrent costs are typically three times greater than the capital investment costs. WaterAid’s recent international policy report on targeting investments in the WASH sector (WaterAid 2011a: 47) emphasises the

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<sup>5</sup> An exception is where household self-supply (an alternative service delivery model explained later in this section) is adopted instead of community-based water services. In the self-supply approach, the owner of the supply is usually responsible for all capital expenditure and any interest on loans (unless there is external subsidy to hardware or promotional activities) and all the recurrent costs of operating and minor maintenance expenditure and capital maintenance expenditure (Smits and Sutton 2012).

implication of this in terms of typical cost-sharing practices: “the relatively small capital cost of providing an improved service is generally considered to be unaffordable by rural communities” and is therefore heavily subsidised by governments and donors, yet the even greater burden of recurrent costs is - in most policy at least - placed primarily on the users. In “the 3Ts” framework of taxes, transfers and tariffs, it means that taxes and transfers are used to pay about a quarter of the life-cycle costs, while tariffs are meant to cover the remaining three-quarters. This observation emphasises the importance of considering the affordability of what users are expected to pay, which I turn to in the next section.

### **Affordability and willingness to pay**

In the previous section I discussed what costs the literature suggests that user tariffs are intended to cover. I now examine the issue from the users’ point of view, by setting out the challenges in analysing the affordability of water services and users’ willingness to pay.<sup>6</sup> Affordability is defined as the “ability of particular consumer groups to pay for a minimum level of a certain service”, typically defined relative to household income or expenditure (Fankhauser and Tepic 2007). A rule of thumb for the “affordability level” of water and sanitation has commonly been considered 3-5% of annual household expenditure (McPhail 1993; Waughray and Mohan 2003; Biesinger and Richter 2007) i.e. if a household must spend more than 3-5% of its total annual outgoings on water and sanitation, this expenditure is considered to be unaffordable. However, this benchmark is recognised as arbitrary and often misleading (Reddy 1999; Calkins et al. 2002; Waughray and Mohan 2003). Yet the “5% level” persists in recent studies (e.g. Fankhauser and Tepic 2007; Nyarko et al. 2007) and donor guidelines (Gunatilake et al. 2007; AfDB 2010).

Instead, ‘willingness to pay’ (WTP) is used as a concept to investigate how much households will pay for water and sanitation services. WTP methods can be based on either stated preferences (expressed through surveys, focus groups or participatory research) or revealed preferences (based on observed behaviours). The methods chosen tend to differ according to whether they are being used for academic purposes or as part of programme

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<sup>6</sup> The literature dealing with these topics is focused mainly on user payments towards the recurrent costs of water services (sometimes considering willingness to pay the capital investment required for a household connection to a piped network), but later in this section I also consider the issue of users paying for some or all capital expenditure where self-supply is used as a service delivery model.

implementation. Null et al. (2012), specifically considering improvements in water quality, identify three key methods used in the academic literature to infer willingness to pay: contingent valuation (a stated preference method), discrete choice models and experimental methods (both based on revealed preferences). Other approaches based on stated preferences such as community meetings and focus groups employing participatory methods tend to be seen as insufficiently rigorous by academics but are more frequently used in project implementation (Davis and Whittington 1998; Parry-Jones 1999).

However, contingent valuation and stated preference methods are difficult to use in practice because of the problems for the questioner in describing a plausible scenario for the interviewee to respond to, and for the respondent in predicting their own future response (Calkins et al. 2002; Whittington 2002; Gunatilake et al. 2007). Discrete choice methods, usually involving the analysis of cross-sectional survey data on households' decisions about water access improvements, have difficulty establishing causation because of problems of unobserved variables and bias (Null et al. 2012). Therefore an option for investigating willingness to pay, without aiming to produce exact quantitative figures, is to try to learn something from observed expenditure and additional qualitative research for insights into why users make the choices that they do. This is the approach I adopt in this thesis, which I describe more fully in the methodology in Chapter Three.

### **Household- and community-level relations and gender roles**

In the previous section I showed that the literature on affordability and willingness to pay focuses on the household as the unit of analysis. However, wider literature suggests that understanding the role of users in paying for water services requires considering two further levels of analysis: relations between different members within the household itself, and community dynamics at a level above the household. Extending the analysis to these levels draws particular attention to the issue of gender.

Regmi (2005) argues that power over household finances, especially concerning the relative roles of men and women, is sometimes given insufficient consideration in water supply projects. In much of West Africa, control over resources in the household is determined by patriarchal hierarchies, and women tend to have less access to resources (Adams et al.

1998). In such cases, women may be at a disadvantage in their ability to access water if the tariff systems in place require payment on an individual basis (Harris 2009).<sup>7</sup> In Mali, men tend to make decisions on household expenditure (Simard and de Koninck 2001) but women (particularly in polygamous marriages) may have some finances or other resources of their own to control (Castle 2004; Harris 2006). In my previous research in three case study villages in one municipality in Mali, paying for water (either directly or via contributing to repair costs after a breakdown) was viewed as a male responsibility, and fees were collected per married man (Jones 2011a). However, it cannot be assumed that the same applies to other areas of the country (Gleitsmann et al. 2007). This literature and previous research raises the question of which household members contribute to the costs of rural water services in Mali and how much they contribute.

Willingness to pay can also be considered in a collective or community sense, rather than at the level of individuals or households. As previously explained, 'tariffs' in the 3Ts framework refers to all user contributions, not just tariffs in the typical sense of a levy per volume, per person or per household. Communities may also use collective methods for raising money for their contributions to the recurrent costs of rural water services, such as the profit from collective labour or community harvests (Agbenorhevi 2005; Jones 2011a). This demonstrates the importance of understanding existing collective community practices, especially community-level financial organisations: groups of people whose members manage some of their money together, for collective expenditure and other purposes.<sup>8</sup>

A variety of different types of local financial organisation exist in West Africa and Mali. These include traditional collective-work or age-group associations, known as *tons* (Jonckers 1994); traditional associations for saving and sometimes giving credit, known as *tontines*<sup>9</sup> (CARE 2011); and more formal savings or microfinance groups which are supported by or linked to external organisations such as NGOs, credit unions and banks (Chao-Beroff 1999; Ouattara et al. 1999; Seibel 2006). NGOs have been particularly active in promoting savings

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<sup>7</sup> However, O'Reilly (2006) suggests that external actors such as NGOs sometimes use ideas about gender roles specifically to encourage payment for water. She uses a case study from India to argue that an NGO aimed to promote a "modern" image of women and improved water supply, trying to create a logical link between women perceiving themselves as modern and increasing their willingness to pay for access to a more modern water supply.

<sup>8</sup> Other purposes for members can include providing savings mechanisms, using pooled deposits to give loans or grants and accessing credit from external sources.

<sup>9</sup> The Malian version of Rotating Savings and Credit Associations or Accumulated Savings and Credit Associations (ROSCAs/ASCAs).

groups in Mali: as of 2011, five international NGOs<sup>10</sup> had reached almost half a million members (CARE 2011). INGOs usually promote groups for women because women are least likely to have access to more formal means of saving and borrowing. Women are also considered to be more reliable at repayment than men and to spend the income they control on things that are more likely to benefit family welfare (Duffy-Tumas 2009). In addition to their financial objectives, these different organisations may also promote increased collective action by their members, for example investing in community development projects such as school construction or lobbying other actors such as NGOs to undertake larger projects beyond the means of the community (Ouattara et al. 1999; Allen and Panetta 2010; Edwards 2010; Mitlin et al. 2011).

The existence and activities of such organisations therefore suggest issues to address in relation to the role of communities in managing and financing rural water services. Given the possible role of financial organisations in supporting wider collective action by their members (especially in contributing to the provision of public goods or services), it is important to consider whether there are links between such financial organisations and community water supply management bodies. If there are no such links, then it may still be worth trying to understand if there are any lessons which could be learnt from how these financial organisations help individuals and communities manage their money, the relevance of gender relations on how such groups function, and the role of NGOs in supporting such organisations.

### **Alternative service delivery models: self-supply and private operators**

Although this thesis focuses on community-based management of rural water services, since this model remains the most common in Mali and other low-income countries, two other approaches to service delivery should be considered.

The first of these is 'self-supply', a concept which has been proposed as a possible complement or alternative to community-managed sources in rural areas. Self-supply refers to initiatives undertaken by individuals, households and communities to improve their own water provision (Carter 2006; Sutton 2009a). The term is also used to refer to approaches by

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<sup>10</sup> CARE, Oxfam, Freedom from Hunger, Plan International and Catholic Relief Services.

external organisations to promote and support these initiatives (WaterAid 2011b). Although this overall definition of self-supply includes community-led initiatives, the literature on self-supply commonly focuses on investments by households or small groups of households (Harvey 2011; Kumamaru 2011; Butterworth 2012; Smits and Sutton 2012). However, household-owned supplies are often shared with others nearby (Sutton 2009a). Examples of technology options for which self-supply might be considered include rainwater harvesting, the construction and upgrading of shallow wells, and household water treatment (Smits and Sutton 2012).

Arguments in favour of self-supply suggest that the approach can help extend coverage to those unserved and supplement water services from community-based supplies (by improving the overall service received in terms of quantity, reliability, ease of access or quality) (Carter 2006; Sutton 2009a; Smits and Sutton 2012). Therefore when the literature refers to self-supply as a 'complementary' approach to community management and other service delivery models, this can refer both to the use of different models within a country's water sector as a whole and to the complementary nature of different models within the same community. Self-supply may be particularly relevant to small communities, where collective funds may not be sufficient for maintaining an improved community supply; to geographically or socially divided communities, where community management and pooling funds may be difficult; and to poor households within other communities, if long-term tariffs for community sources are greater than the costs of self-supply (Sutton 2009a). In some cases, self-supply may in fact become a replacement for previous attempts to deliver services through community-based supplies (Smits and Sutton 2012).

Sutton (2009a: 3) proposes four 'building blocks' for an enabling environment in which self-supply might be able to succeed: technology options and advice, financial mechanisms to enable household investment, private sector capacity and enabling national policies. However, critics note that one of the incentives for national governments to promote self-supply may be as a way of increasing water coverage figures at low cost to the government but without paying sufficient attention to possible risks to users such as poor water quality (Arsano et al. 2010). Other possible concerns about self-supply include addressing the needs of the poorest (who may not have access to the capital required), long-term maintenance and environmental sustainability (Butterworth 2012; Smits and Sutton 2012).



Self-supply has apparently not been strongly considered in relation to the overall challenge of sustainable services in WaterAid's country programmes to date; little mention was made of the approach during the process of collecting experiences to contribute towards WaterAid's *Sustainability Framework* (WaterAid 2011b). However, there have been some initiatives to promote self-supply in Mali by WaterAid and others, since the country is seen as having high potential for the use of self-supply for upgrading existing hand-dug household wells, which are already used by over 5 million people (60% of the rural population) (Maiga et al. 2006). Therefore this research considers self-supply as a possible alternative or complement to community water supplies. I explain in Chapter Four how the research methodology explored the approaches to self-supply in Mali and present the results and analysis relating to self-supply in Chapter Seven.

The second possible alternative service delivery model is private sector management. Lockwood and Smits (2011) argue that although there has been a gradual trend to professionalise community management, for example in water committees being registered as legal entities and sub-contracting some functions (such as tariff collection) to paid workers, a distinction should still be made between these forms of sub-contracting and full delegation from the asset owner to a private operator. However, formal private sector management is relatively recent in rural areas in low-income countries and is still much less common than voluntary or partially-professionalised community management (Harvey and Reed 2007). Where private sector operators are used, this tends to be in larger communities with more complicated small piped systems rather than smaller communities using point sources such as boreholes fitted with handpumps (Lockwood and Smits 2011). Although the option of delegation to the private sector exists in Mali, it is still rare and there are as yet few examples in WaterAid's areas of intervention.

#### **2.4. Decentralised local governments and their role as service authorities**

As I explained at the start of this chapter, in recent years there has been increasing attention in the rural water sector to the support required by community management from higher levels, whether this is called "post-construction support", "community management plus", "direct and indirect support", or "external support" (Kleemeier 2000; Lockwood 2002;

Baumann 2006; Lockwood and Smits 2011; WaterAid 2011b). This means that support is needed from what Schouten and Moriarty (2003: 161) call “the vast fuzzy region that lies between national and local.” The widespread decentralisation reforms in developing countries mean that municipal or district governments should usually be the intermediate-level bodies who have overall responsibility for providing this support, with additional involvement from central government line ministries, NGOs and civil society, and the private sector (Schouten and Moriarty 2003; WaterAid 2011b). This local government responsibility for support can be considered part of a ‘service authority’ role for rural water supply, where the functions of a service authority include planning and coordination for implementing new services, as well as the ongoing functions of regulation, oversight and support to community management bodies and other service providers (Lockwood and Smits 2011).

Research which is concerned with how to provide and finance the support needed by community management of rural water supply requires engaging with wider debates about decentralisation and the role of local governments in public services delivery. Therefore in this section I explore the typical rationale and claims in the literature for linking decentralisation to the delivery of public services. I illustrate the key debates about decentralisation with particular reference to the history of decentralisation in West Africa. I then consider the critiques of decentralisation and the sceptical view of the ability of local governments to ensure the delivery of public services for their citizens. I conclude by arguing that the issue of rural water supply in Mali can provide a relevant example to inform the debate about both the role of local governments as service authorities for drinking water and for public services more widely.

### **Decentralisation and public services delivery**

Decentralisation can be understood in its broad sense as the transfer of political and administrative powers from higher levels to lower levels of government (Agrawal and Ribot 1999; World Bank 2008), although as I discuss in the next section there are important differences between types and elements of decentralisation within this overall idea. The improvement of public services has been one of the common ‘promises’ of decentralisation (Robinson 2007), based on the idea that decentralisation can improve the efficiency and

equity of government action (Johnson 2001; Smoke 2003; Crook 2003; Boone 2003; Conyers 2007). The logic underlying this idea is that decentralisation should bring the government closer to the people, both spatially and institutionally, making the government more knowledgeable and responsive regarding the people's needs (Crook 2003). This greater responsiveness should in theory lead to improved public services and poverty reduction (Conyers 2007; Robinson 2007).

However, Robinson (2007) argues that the conditions under which service delivery can be improved in a context of decentralisation are poorly understood. Conyers (2007) highlights that there is a particular lack of evidence in sub-Saharan Africa for any positive impact of decentralisation on service delivery, suggesting that the typical lack of power and finances available to local governments in practice limits the possibilities for serving the poor more effectively. Robinson (2007: 6) concludes that "there are fewer areas of development policy that are more in need of research than strengthening the evidence base to measure the impact of policies designed to deliver services to poor people through elected local governments." This observation demonstrates the relevance of understanding the role of local governments in Mali in the delivery of rural water services as one example of public services in the context of decentralisation in sub-Saharan Africa.

In addition to observing in practice the links between decentralisation and public services, it is also important to try to understand how and why the observed forms of decentralisation have developed. Ribot (2007) argues that the goals typically assigned to decentralisation are broad enough that decentralisation can appear to fit under a variety of approaches promoted in international development and appeal to many different groups. For example, the ideas of decentralisation may attract supporters of neoliberal economics seeking to reduce the power of central government, advocates of pluralist politics who want more open forms of governance, and autocratic leaders trying to acquire local support without full national democracy (Crook and Manor 1998). This argument highlights the need to pay attention to the actual form and history of decentralisation in each context of interest. Therefore in the next section I discuss different definitions of decentralisation and summarise the history of decentralisation in West Africa.

## **Types of decentralisation and its history in West Africa**

A distinction must be made between two key types of decentralisation. The first type, deconcentration, occurs when administrative responsibility is transferred to local levels, but these local bodies remain politically accountable to, and financially reliant on, central government (Johnson 2001). Deconcentration therefore usually refers to the implementation of local field offices of central government ministries and is sometimes referred to as 'administrative decentralisation' (Agrawal and Ribot 1999; Pinto 2004). The second type of decentralisation is devolution, where local levels of government are politically accountable to their population rather than central government, and usually have some fiscal authority, in addition to their administrative responsibilities (Johnson 2001). Devolution is therefore also sometimes called 'political decentralisation' (Agrawal and Ribot 1999).

Aspects of each of these two types are evident in the history of sub-Saharan Africa. The following simplified series of different stages gives a broad overview of how the different types of decentralisation have evolved over time in sub-Saharan Africa (Conyers 2007):

- 1) Pre-colonial: power was decentralised but personalised through chiefdoms.
- 2) Colonial: power was centralised through colonial authorities but there were some elements of decentralisation through systems of indirect rule.
- 3) Transition: some level of decentralisation was implemented by outgoing colonial powers as a way of introducing Western-style concepts of democracy.
- 4) Post-independence 1: centralisation occurred, to enable development planning by central governments.
- 5) Post-independence 2: deconcentration was implemented through local committees of central government ministries, with the aim of improving service delivery. Crook and Manor (1998) argue that this first post-independence wave of decentralisation failed because of interference and a lack of trust from central government, combined with a lack of capacity and resources at local levels.
- 6) Post-independence 3: devolution (or 'democratic decentralisation') emerged, ostensibly with the goal of helping promote democratisation discussed below.

The situation in West Africa has been broadly similar to the trends outlined above:

post-independence, deconcentration was the dominant policy until the 1990s, and its influences continue through local units of government ministries even in the more recent era of devolution (Ouedraogo 2003; Pinto 2004). As suggested in the post-independence description of decentralisation as ‘democratic decentralisation’, modern decentralisation reforms have usually been linked to ideas of democratisation, proposing to achieve “democratic local governance” as a combination of devolutionary decentralisation and local democracy (Blair 2000: 2). Democratic decentralisation is therefore defined as “meaningful authority devolved to local units of governance that are accessible and accountable to the local citizenry, who enjoy full political rights and liberty” (ibid). A more sceptical viewpoint suggests that most central states in sub-Saharan Africa, including West Africa, have historically wanted decentralisation to either create or consolidate dependent local elites (Boone 2003; Crook 2003). Much of the literature on decentralisation in West Africa and Mali therefore seeks to assess to what extent decentralisation reforms have been successful in achieving democratic decentralisation (Cold-Ravnkilde 2012).

However, as I have explained in the previous section, this thesis aims to use the example of rural water services as a means of contributing to the debate about decentralisation and service delivery, rather than the democratising potential of decentralisation.<sup>11</sup> The relevance of the history of decentralisation to this research is in understanding that current approaches to the delivery of rural water services typically involve aspects of both devolution and deconcentration, and are influenced by the politics and aims of central government (Boone 2003; Ribot 2007). I analyse the processes of decentralisation in Mali and their effect on approaches to service delivery and cost-sharing in the rural water sector in Chapter Five.

### **Decentralisation and support to rural water service providers**

The overview of the history and types of decentralisation in the previous section provides a background for understanding the different arrangements that exist in the rural water sector for providing ongoing support to service providers, especially to community management bodies. As I explained, decentralised local governments typically have overall responsibility for ensuring this support as part of a service authority role (Lockwood and

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<sup>11</sup> For a case study more focused on the links between decentralisation, water services and the promotion of participation and citizenship, see Jones (2011a).

Smits 2011), but other actors may also play a part, such as deconcentrated parts of central government ministries. In this section I briefly review the types of support provided before considering the arrangements in place for providing the support.

The key areas of support typically required by community management or other local service providers are technical advice; support to management processes, including both administrative issues (such as advice on accounting) and wider organisational challenges (such as mediation for conflict resolution); support to longer-term monitoring of services; contributions to costs, especially of capital maintenance (or help in seeking other financing sources for these costs); support to local supply chains; and support in the case of external shocks such as environmental change or conflict (Lockwood and Smits 2011; Smits et al. 2011; WaterAid 2011b). The extent to which these forms of support are actually provided in any given context is a key question for research.

Smits et al. (2011) also identify the most common arrangements in place for providing this support (even if not all the elements of support are actually provided). These arrangements involve different aspects of the types of decentralisation discussed in the previous section and are summarised in Table 2.2.

*Table 2.2. Arrangements for providing direct support to community management and other service providers (adapted from Smits et al. 2011)*

<b>Arrangement (Smits et al. 2011)</b>	<b>Relevant forms of decentralisation</b>
Local government provides direct support	Devolution
Local government provides support by sub-contracting a specialised agency or individuals	Devolution
Central government provides support, either through its deconcentrated offices or by sub-contracting a specialised agency	Deconcentration
Associations of community-based service providers collectively provide support to each other (sometimes by sub-contracting a specialised agency or individuals)	Suggests that decentralisation to community levels is stronger than devolution to local governments
NGOs provide support, usually in an ad hoc manner but sometimes through more structured programmes	Suggests that there is a lack of decentralised capacity in either devolved or deconcentrated forms

This overview shows the importance of understanding what support is actually provided to community management and how this is arranged. In Chapter Six I present in detail different types of support and arrangements where WaterAid works in Mali. This review of the literature also raises the question of the role of local government in financing the recurrent costs of rural water services, especially for direct support. I turn to this question in the next section. The discussion of how local governments can ensure support to service providers also shows the need for local governments themselves to receive support and capacity-building. I consider this question in Section 2.5 when discussing the role of the national enabling environment in supporting sustainable approaches to service delivery.

### **Fiscal aspects and critiques of decentralisation**

The fiscal aspects of decentralisation are crucial when considering the delivery of public services and the role of local governments in rural water supply, especially regarding how to finance the costs of the possible forms of direct support to service providers discussed in the

previous section. I briefly referred to fiscal issues previously in relation to the different types of decentralisation and consider this aspect of decentralisation in more detail in this section.

In principle, fiscal decentralisation provides ways for local governments to increase the resources available to them through taxes and tariffs (in the 3Ts framework) for providing public services (Conyers 2007). These opportunities may include new sources of local tax revenue, improving the collection of existing taxes and user fees, or reducing the costs of service delivery and so creating surpluses. However, Conyers concludes that the evidence available suggests that it is difficult for local governments to raise local taxes or tariffs because their citizens are poor and central government often wants to retain fiscal control over both the levels set and how they are collected. Furthermore, the success of administrative efficiencies is mixed and total overhead costs may actually increase with decentralisation because of having government employees at multiple administrative levels (Conyers 2007). This challenge of a lack of resources for local governments, even when fiscal decentralisation has in theory provided them with ways of increasing their resources, is a widespread problem. As Smoke (2003) puts it, local governments in developing countries have an “almost universal” lack of revenue in comparison to the expenditure required to fulfil their responsibilities.

These observations are one argument used by those critics who suggest that decentralisation is an aspect of the neoliberal ideology of “hollowing out” the state (Schuurman 1997). In the case of decentralisation, Craig and Porter (2006: 25) conclude that neoliberal ideas have resulted in “quasi-territorialisations” at local levels. According to Craig and Porter, these are “vague and ineffectual operationalisations” of territories intended to help address poverty such as ‘communities’, ‘areas’, ‘communes’ and ‘districts’. However, due to their lack of resources and authority in relation to the responsibilities assigned to them, these forms of decentralisation have not enabled any substantive practical approaches to service delivery and poverty reduction. Craig and Porter (2006) make a distinction between these “quasi-territorial” forms of decentralisation and “territorial” ways of addressing poverty, which involve some nationally-driven redistribution or support to areas which lack resources. This “territorial” approach contrasts, for example, with the neoliberal trend identified in South Africa by McDonald and Pape (2002) for municipalities to compete against each other for resources from private investors and tourists, with the redistributive role of the central state minimised.



These arguments are a reminder of more sceptical views on the ability of decentralised local governments to ensure the delivery of public services such as rural water supply. WaterAid's own research (WaterAid 2007; Mehta and Mehta 2008) has highlighted the gap between local governments' responsibility and resources for delivering water and sanitation services (although this research focused predominantly on capital investment rather than recurrent costs). These broad observations demonstrate the importance of two key topics to this thesis. The first is the role of central governments and NGOs, in terms of financing (for example, through national taxes which are transferred to local government or transfers of aid to local government), other forms of capacity support to local government, and their influence on national policies concerning service delivery approaches. In relation to Craig and Porter's idea of "quasi-territorialisation", the question is raised of whether aid and the work of NGOs can contribute to assisting increased autonomy of local government areas (what they call "re-territorialisation"). I review the literature on national policy environments and the role of NGOs in the Sections 2.5 and 2.6. The second key issue raised by the challenge of the lack of resources for local government is the need to examine in detail the actual forms of service delivery in place at local levels and how these are really financed, given the likelihood that these do not match the official approaches intended if resources are insufficient to do so.

## **2.5. The enabling environment and the role of central governments and donors**

The 'enabling environment' - national-level policies, institutional frameworks and implementation mechanisms - is recognised as crucial for the WASH sector, including its influence on the financing and sustainability of rural water services (Lockwood and Smits 2011; WaterAid 2011). Recent efforts to assess the state of the enabling environment and the ability of the sector to support sustainable service delivery include the Country Status Overviews of 32 countries in sub-Saharan Africa commissioned by the African Ministers' Council on Water (summarised in WSP 2011). As explained in Section 2.2, this thesis focuses on the recurrent costs of rural water supply that occur at community and local government levels, rather than the national-level recurrent costs of indirect support and cost of capital (in the framework of the WASHCost life-cycle costs approach). However, in this section I consider two national-level issues relevant to the cost-sharing arrangements and service

delivery approaches in place at local levels.

The first issue is aid effectiveness and the relations between national governments and international donors. Given the significance of aid financing to the rural water sector in many developing countries (UN-Water 2012), aid effectiveness issues are important in understanding the emergence of national-level policies and practices. Secondly, I discuss the role of central governments in providing indirect support in the rural water sector, which includes capacity support to local governments and other forms of sector learning (Lockwood and Smits 2011).

I use the term aid effectiveness here as set out in the five principles of the Paris Declaration (OECD 2008): ownership of development policies by partner countries; alignment by donors with partner countries' agenda and systems; harmonisation between donors; managing for results; and mutual accountability. In practice, for example, this means that key country strategies such as Poverty Reduction Strategy Papers (PRSPs) should be driven by recipient countries, not donors, and that donors should align their support behind such plans and use government implementation systems to do so. At sector level, this may mean the adoption of instruments such as Sector-Wide Approaches (SWAs) to help harmonisation and coordination.

De la Harpe (2012) argues that aid effectiveness approaches have a key role to play in helping enabling environments for water services to develop, and that, conversely, a lack of aid effectiveness leads to a vicious cycle of repeated project-based donor activities which lie outside country policies and systems and never support the development of sustainable service delivery approaches. However, Hyden (2008a) and Welle et al. (2009) caution that national politics and the power relations between governments and donors are more important in making progress on aid effectiveness than the actual specific mechanisms implemented for the purpose of improving aid effectiveness in any one sector, such as SWAs. Welle et al. (2009) therefore argue for using broader political economy analysis approaches to analyse water sector issues and the influence of government-donor relations. I discuss the development of one such approach and its application to this research in Chapter Three, where I consider in more detail how to analyse the relations between different actors and the emergence of particular cost-sharing arrangements.

The second issue is how actors at national level can provide capacity support to local governments. As introduced in Section 2.4, if local governments are to be able to act as service authorities and ensure support to community management and other service providers, they themselves require support and assistance from higher levels, for example from central government water ministries and their regional offices, the private sector, training or academic institutions, and NGOs (Lockwood and Smits 2011). This support can include training for local government staff, additional specialised technical assistance, administrative support such as help with financial planning and support to monitoring which might feed into national information systems. However, as Lockwood and Smits observe, there is usually a lack of capacity at all levels in a typical developing country's rural water sectors, not just at the local level, and similar challenges affect most public services. WaterAid's work with local governments in Mali, which is focused on developing approaches of direct support from municipalities to communities, is itself also a form of capacity support to municipalities. I analyse the capacity support elements of this approach in Chapters Five and Six.

## **2.6. The role of NGOs and civil society**

Before discussing the roles of NGOs and civil society, it is necessary to consider the understandings and definitions of civil society used in development practice, especially by international aid donors, and in the broader academic literature. Mohan (2002) argues that the dominant development discourse on civil society has emerged from the 'associational' school of thought. This viewpoint sees civil society predominantly as associational life and political participation which keep the state in check (Hyden 1997). According to Mohan (building on Hyden 1997), this viewpoint makes three key claims. The first is that civil society is distinct from and conflicts with the state. The second claim is that civil society is key to promoting democratisation, in a procedural sense of democracy where civil society helps channel public opinion into policymaking. However, Mohan also notes that the influence of what he calls the 'regime school' of civil society - which is more sceptical than the 'associational' school regarding the role of civil society in democratisation and sees greater need for state reform - means that most development aid aimed at promoting such linkages between civil society and the state has actually been directed to strengthening central governments. The third and final claim typical amongst donors is that NGOs are a key part of

civil society, sometimes to the extent that NGOs are conflated with civil society (Mercer 2002), a move that appeals to donors since it permits them to fund NGOs and then claim to be promoting civil society.

As I discuss in Chapter Five, assessments of the state of civil society in Mali have tended to evaluate it against the typical roles that the 'associational' school of thought suggests civil society might play. However, these observations in fact demonstrate the importance of Mohan's (2002) argument for examining "actually existing civil society" (following Mamdani 1996), especially concerning the overlap between state and civil society (Chabal and Daloz 1999), and the relative extent to which civil society consists of formal NGOs and less formal social movements. In considering the role of NGOs and their links to social movements, there is a growing set of work which conceptualises two meanings of the term 'development' (Hart 2001; Hickey and Mohan 2004; Mitlin et al. 2007; Banks and Hulme 2012). One is a historical process of social change, while the other refers to specific interventions, particularly those that fit broadly within the post-World War Two project of aid and development. Hart (2001) labels these as "little d development" and "big D Development" respectively. These classifications are not independent: NGOs are all acting in interventionist "big D Development", while also being part of "little d development" (Mitlin et al. 2007).

This literature has led to a framework developed by Banks and Hulme (2012) which considers NGO approaches in three categories: service provision, advocacy on behalf of the poor, and empowerment i.e. enabling the poor to become advocates for themselves. For Banks and Hulme, service provision activities and advocacy undertaken by NGOs on behalf of the poor remain within the domain of "Big D Development" and depoliticised approaches. In contrast, approaches where the poor act as advocates for themselves should be seen as part of "little d development" and a way for NGOs to engage with promoting alternatives to "Big D Development". There is a strong normative element - perhaps even a romanticisation of NGOs, social movements and civil society - in this literature, in the argument that NGOs should shift further towards radical, system-changing alternatives and be more aligned with social movements rather than merely seeking reforms within existing systems. A note of caution is sounded by Bano (2008), who argues from case studies in Pakistan that aid funding in fact damages local civil society organisations.

Overall, this literature on the role of NGOs and civil society highlights questions for this research which I return to in Chapter Five when I examine civil society in Mali, the role and approach of WaterAid, and how WaterAid works with civil society organisations. I analyse if NGOs can support improved rural water service delivery and pro-poor financing through reformist approaches, such as developing models of service provision and undertaking advocacy on behalf of the poor. I also consider the potential and limits of WaterAid's work with "actually existing civil society" in Mali.

## **2.7. Conclusions**

In this chapter I have assessed historical trends and the roles of different actors in relation to the sustainability and financing of rural water services in developing countries. This review has demonstrated the relevance of the key themes introduced in Chapter One and has highlighted where this research can contribute to these debates.

Firstly, in relation to how the recurrent costs of services are shared between different actors, there is a growing recognition that existing approaches to defining costs and responsibilities are often inadequate. Empirical evidence from a country such as Mali on who pays for what, what amounts of money are actually spent and what the results are in terms of the services that users receive could help contribute to the debate about how to build on and improve existing approaches. To enable international comparison, this research adopts a method for categorising costs based on the life-cycle costs approach set out by the WASHCost project.

The review of the literature relevant to the second research theme of approaches to service delivery shows that the ideas of community-based management and support from decentralised local government have emerged for a combination of pragmatic and ideological reasons. Given the challenges to delivering services through community management and local government support, alternative service delivery models such as self-supply by households themselves have been proposed for some situations. The difficulties highlight the importance of understanding what users and decentralised local governments are willing and able to pay and if there are ways of increasing the funds they can access.

Thirdly, this chapter has summarised the debate regarding NGOs, their role in supporting improved public services and their links to civil society. This has highlighted questions of how organisations such as WaterAid try to directly influence service delivery models for rural water supply, and how they engage in advocating for the wider adoption of particular models. A key issue regarding this possible broader advocacy is the part played by civil society organisations and the limits to the role of civil society in contexts where it may overlap with the state. The questions concerning NGOs and how they try to work with and influence other actors are a reminder of the importance of politics and the role of external organisations in public services and institutional change. In the next chapter I evaluate in more depth the literature on these issues and develop the analytical framework used in this research.

## **Chapter Three - Analytical framework**

### **3.1. Introduction**

In this chapter I set out the analytical framework used in the thesis. This framework relates the questions raised in Chapters One and Two to a structure for analysing these issues in relation to the evidence gathered. The framework links work on “political economy analysis” (PEA) by international donors and think tanks with academic literature on analysing institutional change for managing natural resources and delivering public services.

As I argued in Chapters One and Two, it is essential to address the political economy surrounding rural water services in a way which can help policymakers and practitioners (Mollinga 2008; O’Meally 2009; Welle et al. 2009; Lockwood and Smits 2011; Cleaver 2012). Recent efforts have been made, both by international donors themselves and also by think tanks such as the Overseas Development Institute, to develop approaches which can help donors or NGOs analyse the political economy context related to water and sanitation where they are working. In the first half of this chapter I assess these “political economy analysis” (PEA) approaches and argue that they provide two useful starting points. Firstly, such frameworks help in providing a systematic approach to analysing the key actors, institutions and structures involved. Secondly - in their aims at least - these approaches seek to emphasise the political roles of donors and NGOs themselves, and the need to adopt ‘best fit’ approaches which are sensitive to the particular country context rather than imported ‘best practices’ which may not apply.

However, I conclude that these forms of political economy analysis should be extended using further literature which includes work by scholars in fields such as geography, sociology, politics and management. This concerns a deeper debate about how different parts of academia, policy and practice conceptualise institutions and how external actors may be able to influence institutional change. As introduced in Chapter One, Booth (2012: 92) observes that international aid donors have sought to move past “one-size-fits-all remedies” in relation to institutional reform for over ten years, but with little success. He argues that despite more nuanced studies of each country context, the alternative remedies proposed “remain well within the terms of the good governance philosophy” (Booth 2012: 92), rather than more sensitive ideas of “good enough governance” (Grindle 2004, 2007). I

aim to address these concerns by combining the two areas of literature into an approach which is both academically rigorous and can help provide practical recommendations for NGOs, responding to Cleaver's (2012) suggestion to place detailed analysis of institutional change within a wider framework that helps link different scales. I also explain how this framework relates to the structure of the remainder of the thesis, in particular the three chapters which form the key analysis at national, local government and community levels.

### **3.2. Evaluating political economy analysis**

#### **The growth of political economy analysis as a framework**

In this section I describe the common historical uses of the general term 'political economy' and summarise the more specific recent approaches used in the international aid and development literature under the specific label "political economy analysis" (PEA). I then discuss how the evolution of different theories of political economy relates to the emergence and use of these methods of political economy analysis. This also involves assessing how the criticisms of donor-led PEA are related to the underlying theories used in the different approaches within the PEA trend.

Edelmann (2009) classifies three key periods of thought in political economy. Firstly, the classical political economy of the 18<sup>th</sup> and 19<sup>th</sup> centuries, whose most important scholars included Smith, Marx, Engels and Ricardo. Secondly, narrower neoclassical political economy of the 1860s to 1980s was concerned with rational agents interacting to allocate scarce resources. Thirdly, more recent institutional political economy from the 1990s focuses on the effect that institutions (defined in that case as both formal and informal 'rules of the game') have on economic behaviour, drawing in particular on the 'new institutional economics' (NIE) of Douglass North and others (see North 1990). When moving from definitions of political economy to the more recent uses of the term as part of political economy analysis by donors, Leftwich (2007) notes in reviewing these analyses that:

... there appears to be some ambiguity as to what 'political economy' actually refers. (i) Is it a method? (ii) Is it a theory and, if so, what is it? (iii) Is it simply an acknowledgement that it is difficult (and perhaps unwise) to detach economic issues



from political ones? (iv) Is it a description of a particular pattern of links or relationships in given countries between ‘economic’ and ‘political’ factors? If the latter, what is the significance of the links and what dynamics drive or shape those relations? (v) Or is it just a polite and economically respectable way to introduce ‘politics’ to the analysis? (Leftwich 2007: 19)

As I use the term “political economy analysis” (PEA) here, it refers to a variety of donor-led approaches that have been developed since 2000. These include: DFID’s *Drivers of Change* and *Politics of Development* (see Leftwich 2007), Sida’s *Institutional Analysis and Development* (Ostrom et al. 2002), and the World Bank’s *Problem-Driven Governance and Political Economy Analysis* (Fritz et al. 2009). In response to Leftwich’s question, I argue that PEA represents a range of methods, based broadly on some common elements and underlying ideas – although as I discuss later some of these theories may be simplistic and therefore require supplementing with other areas of literature. The following are the key elements for analysis found in most of the approaches (Landell-Mills et al. 2007; Duncan and Williams 2012):

- **Structures:** A consideration of structural factors such as historical processes, demographic trends and environmental issues.
- **Institutions:** The approaches all place a strong emphasis on institutions (defined as both formal and informal ‘rules of the game’), drawing heavily on the ‘new institutional economics’ (NIE) of Douglass North and others (see North 1990). I discuss the definitions of institutions in more detail later in this chapter.
- **Agents and their incentives:** In particular, there is a focus on whether these structures and institutions lead to incentives for pro-developmental behaviour (broadly defined) among key agents or groups on society (Duncan and Williams 2012), particularly political elites (DFID 2009).
- **“Going with the grain” or ‘best fit’ rather than ‘best practice’:** In contrast to previous governance assessments which have tended to compare a country against predefined indicators of “good governance” based upon idealised Western models, most of the PEA approaches try to reduce the normative nature of such assessments and focus instead on understanding the context that actually exists in order to suggest initial actions which are feasible within this (Harris, Kooy and Jones 2011). This is similar to Grindle’s (2007) idea of aiming for “good enough governance”. Kelsall (2011) calls this “going with the

grain”, in particular reference to working with - instead of trying to change - neopatrimonial systems in Africa. Others have called this ‘best fit’ rather than ‘best practice’ (Booth 2012).

- **Donors as political actors:** Some of the forms of PEA explicitly acknowledge the role of donors as political actors themselves, although this varies between the different approaches. I discuss this further below in relation to the criticisms of PEA.

How do the recent donor-led approaches of political economy analysis relate to the previous conceptualisations of political economy in social science? Edelman (2009) and Landell-Mills et al. (2007) argue that these PEA approaches draw both on the “institutions matter” idea of new institutional economics plus more traditional ideas of the importance of structure from previous political economy. Leftwich (2005) suggests that the literature building on new institutional economics to reemphasise the political comes close to what used to be called Marxist political economy in highlighting the link between political power and economic institutions.

However, it is important to consider to what extent these different approaches rely on the ability suggested by new institutional economics (NIE) for external interveners to influence institutions and the subsequent incentives on individuals and groups. For example, Chang (2002) makes a further distinction between theories of new institutional economics (NIE) and institutionalist (rather than institutional) political economy (IPE), where NIE focuses too much on using institutions and subsequent incentives to shape (boundedly rational) behaviour, whereas IPE acknowledges that institutions also shape underlying motivations. Leftwich (2006: 38) makes a similar distinction to Chang between approaches based on rational choice institutionalism and those which are more sensitive to structure-agent relationships and power.

In the next section I expand on this introduction to identify the three broad criticisms that are made of political economy analysis approaches so far. In the second half of this chapter I then explore how to use other areas of literature on institutions to address these concerns with PEA, especially concerning the influence of external organisations on institutional change.

## **Criticisms of political economy analysis**

Although the increased use of political economy analysis has helped bring some benefits to aid agencies in terms of greater realism and more systematic approaches to considering institutions and power (Copestake and Williams 2012), I still identify three broad levels of criticism of these forms of political economy analysis in the literature. The first level of criticism relates to the basic tension between donors attempting to engage in complex political analysis while at the same time responding to the typical pressures of their own taxpayers and governments to disburse large sums of money and achieve measurable results. The second area of criticism relates to the problems of definitions and theoretical underpinnings that I have already touched upon. This part of the literature argues that much PEA is flawed because it rests on oversimplified understandings of development and politics. The final criticism takes this idea further and suggests that PEA could be considered as part of wider trends to promote a particular type of “advanced” or “inclusive” liberalism (Craig and Porter 2006; Hickey 2009a). In this section I consider the three areas of criticism in turn and conclude by suggesting ways forward which respond to these challenges.

### *PEA and the basic constraints on donors*

The basic criticisms of the use of PEA by donors are openly acknowledged by some of those who have been most involved in developing and applying forms of PEA so far. The most prominent example is Sue Unsworth, who was the lead person responsible for developing the *Drivers of Change* approach in DFID (Unsworth 2009). Unsworth says that political analysis tended to be seen as an add-on rather than fundamental, and academic rather than practical. Furthermore, Unsworth and others highlight the inherent tensions between political analysis and the accountability of donors to Western taxpayers, which entails pressure to disburse money and demonstrate results, and to prioritise technical expertise rather than local political knowledge (de Haan and Everest-Philips 2007; Robison 2010b; Duncan and Williams 2012; Copestake and Williams 2012). PEA undertaken so far such as the DFID *Drivers of Change* studies has also been hard to operationalise in terms of leading to specific practical recommendations or entry points for action (Marquette and Scott 2005; Chhotray and Hulme 2009; Unsworth 2009).

Copestake and Williams (2012) suggest that PEA could become more reflexive to include

analysing the incentives of the agency concerned itself and considering the biases and limited knowledge of the analyst(s) conducting the PEA. This also reflects Marquette and Scott's (2005) concern that most PEA studies so far have been led by short-term external consultants and Unsworth's (2009) observation that international donor staff often fall into the intellectual trap of thinking they understand politics because they know their home country's political system. The challenge also remains about how open donors can be about their own motivations and potentially unflattering assessments of recipient country governments and other partners (see also Chhotray and Hulme 2009). These criticisms also apply to NGOs.

#### *PEA and simplified ideas of politics and development*

The second area of criticism relates to how the approaches of PEA used to date conceptualise development as a public good and use a simplified idea of "politics as a bargaining process rather than as a struggle aimed at reforming entrenched structures of power" (Hughes and Hutchison 2010: 54; see also de Haan and Everest-Phillips 2007; Leftwich 2007; Hyden 2008a and Robison 2010a).

Robison (2010a) argues that this problem exists because the current forms of PEA are based on a viewpoint of pluralist political economy, where politics is considered as a process of negotiation between competing interests which exist due to a division of labour rather than power structures. In contrast, critical or structural political economy understands that the competing forces exist in a particular state of power relations, not just functional specialised roles which allow simple negotiated settlements (Robison 2010a). Hughes and Hutchison (2010: 46) argue that development does not simply happen "when the right political incentives are created"<sup>12</sup> as suggested by Unsworth (2009) and the PEA approaches such as DFID's *Drivers of Change*, but needs to be understood as a process of struggle.

This debate around power and struggle raises two questions. Firstly, to what extent, or in what cases, are win-win outcomes actually possible from changes in power relations, as suggested by e.g. Chambers (2006)? Secondly, what role can donors or external interveners

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<sup>12</sup> Leftwich (2007) describes this tendency in the existing PEA work as the trap of falling into "incentive reductionism" and conceptualising incentives only in terms of narrow self-interest (see also Fine and Milonakis 2009). But the PEAs undertaken so far generally include little actual analysis of how incentives and related political processes really work (Landell-Mills et al. 2007; DFID 2009).

play in promoting what Adler et al. (2009) call “good struggles”, i.e. political processes which involve contestation but do lead to compromise?

Adler et al. (2009: 5) link these first two areas of criticism and the questions above by arguing that “those who overtly problematise power often find it difficult to engage with the operational dilemmas of development practice.” However, there are existing approaches which seek to conceptualise power in ways which can help suggest possibilities for action, and could be a way of helping PEA approaches. For example, Gaventa (2006), Chambers (2006) and Green (2010) all draw on Lukes (2005) to highlight different types, forms, levels and spaces of power. The types and forms of power are strongly related. ‘Types’ for these authors refers to at least four categories: power over (that one group holds over another), power to (the capability to act), power with (collective action) and power within (self-confidence and the influence of self-identity on what is considered possible). They argue that power can occur in forms which are visible, hidden (for example, what influences the topics available for political debate) or invisible (referring to the wider social norms that frame the debate).

These ideas of power are sometimes implicit in other work, even if they are labelled differently. For example, Webster and Engberg-Pedersen (2002) use the term “political space” to describe three areas which affect how much influence the poor are able to have on poverty reduction. The first of these three dimensions is the channels through which the poor can influence policy (or not), relating to how Gaventa describes power’s ‘visible’ form of observable decision-making. The second area is the political discourse around poverty, similar to the idea of how ‘hidden power’ determines the political agenda. The third and final ‘space’ described by Webster and Engberg-Pedersen refers to the social practices and beliefs about what the poor can do themselves, which seems to draw on a similar understanding to the Gaventa/Lukes idea of how ‘invisible power’ shapes meaning and what is acceptable. These examples show that there are ways of thinking about power which can provide useful understanding without “problematizing” the concept to such an extent that no feasible actions are identified, as Adler et al. (2009: 4) caution. However, these observations do also suggest that feasible first steps and win-win possibilities may lie where power and decision-making are ‘visible’, and the topics of interest are already on the political agenda.

There is also the problematic idea within some of the PEA work that donors or other interveners are rational actors themselves who are able to “stand separately from the phenomena they analyse” (Mowles 2010: 154) in order to effect change (although as I previously noted, Copestake and Williams (2012) observe that some PEAs are showing greater awareness and self-reflection on the part of donors too). There are related suggestions that PEA approaches should move further towards acknowledging ‘messiness’ and using ideas from complexity theory (Eyben et al. 2008; Mowles 2010; Copestake and Williams 2012).

Kelsall (2011) argues that the work on PEA also tends to show insufficient consideration of non-Western concepts and definitions, such as different forms of accountability that may place greater focus on family, community or religion. However, he encounters the same problems as some of the PEA studies themselves that identify neopatrimonialism and clientelism as widespread in the countries under consideration but struggle to propose tangible ideas for enabling donors to engage constructively with such factors (see also Cammack 2007 and Chhotray and Hulme 2009, who argue that neopatrimonialism is in fact over-emphasised by many PEA studies). Hyden (2008a) discusses different concepts of power to make a similar point: aid recipient country governments may understand power as predominantly informal and personal, whereas donors - despite attempts within PEA to better consider informality - tend to prioritise formal and organisational power.

However, this need to “go with the grain” (Hyden 2008b; Kelsall 2011) can also be interpreted as donors adapting to the status quo and in fact avoiding politics, if they trim their ambitions and modify what they can really expect to achieve (Hughes and Hutchison 2010). Depending on the context, this could be a reasonable response to local challenges by seeking to work within the given situation towards finding useful first steps. However, this possibility also leads to a further argument that I discuss below, that PEA approaches actually contribute to donors avoiding the realities of local politics and instead promote other forms of politics which are more in line with the previous ‘good governance’ agenda rather than the ideas of “good enough governance” that PEA tries to understand. I extend these arguments further in Section 3.3 through a more detailed examination of how to understand institutions and institutional change.

### *PEA and the promotion of particular forms of politics and development*

There is the possibility, suggested by parts of the literature, that despite claims that PEA enables donors to “go with the grain” (Kelsall 2011) of existing country contexts, these approaches are actually part of wider moves to promote particular forms of development and politics. I consider in particular the idea of “inclusive” or “advanced” liberalism used by Craig and Porter (2006) and Hickey (2009a) respectively. Craig and Porter do not explicitly discuss PEA themselves. Instead they address recent donor practices more generally as an evolution of ideas from new institutional economics. It is Hickey who links a discussion of PEA emerging from new institutional economics as part of “advanced” liberalism which privileges certain forms of politics over others, namely technocratic state sector reform coupled with an idealised version of local community and civil society action (Hickey 2009a). Craig and Porter argue that there is an overestimation of what can actually be achieved in terms of pro-poor outcomes through these two areas of focus. In a related argument, de Haan and Everest-Phillips (2007) and Fine (2009) caution that the use of PEA as a development of new institutional economics could also be seen as part of attempts to expand the dominance of economics in development agencies, and a sign of the failure of other social scientists to provide alternative analyses.

### **Political economy analysis in the water and sanitation sector and ways forward**

Examples of the use of political economy analysis in the water and sanitation sector exhibit some of these challenges but also provide lessons for how such frameworks might be extended. Plummer and Slaymaker’s (2007) paper *Rethinking governance in water services*, one of the background papers for DFID’s 2008 water policy, took existing work on DFID’s *Drivers of Change* and *Capability, Accountability, Responsiveness (CAR)* frameworks and outlined how these could be used in a form of political economy analysis for water. The use of these existing frameworks was partly a way to help those working on water speak the language of governance used in other parts of DFID (Cleaver 2012). This framework led to analysis of the water sector in Ethiopia (Arsano et al. 2010). Similar analysis using an alternative framework was undertaken in Kenya (Rampa 2011) and more recent work by the Overseas Development Institute has built on further PEA debates, feeding into studies on the political economy of scaling-up sanitation in Vietnam and water-pricing in Sierra Leone

(Harris, Kooy and Nam 2011; Harris, Kooy and Jalloh 2012).

Both the Ethiopia and Kenya analyses struggled for concrete recommendations, tending towards vague proposals on increasing support to civil society, a problem identified in other PEAs (Landell-Mills et al. 2007). The Vietnam example is most insightful in identifying potential new ways for donors to work, in this case by suggesting the possibility of collaborating with actors apart from the government which have influence at scale such as associations and unions. However, there was ultimately a lack of consideration of why donors had not done the things suggested already. The Vietnam case study identified a clear example where DFID had previously recognised the problem of budget allocations being biased more towards new investment than recurrent financing. The authors note that “this line of thinking appears to have been marginalised in current DFID programming” (Harris, Kooy and Nam 2011: 27) but do not interrogate further why this might have been neglected. This represents a wider problem with these studies that they require greater attention to the actual “room for manoeuvre” (Grindle 2007) in terms of both external policy debates and the internal incentives of donors themselves.

However, I argue that there is a productive way forward from the three areas of criticism and the applications of PEA to the water and sanitation sector so far. If we accept the first criticism (that international donors and NGOs are inherently constrained in the extent to which they act politically) then it makes sense to focus on specific problems where there may be some possibility of small positive steps. External organisations must still be aware of the second criticism: acknowledging issues of power and how they understand and engage with processes of institutional change, even if these are likely to be incremental rather than more extensive reforms. In Section 3.3 I set out how this analysis can be done to help suggest practical possibilities for action. I do acknowledge the final argument, that such approaches “merely put a social institutional mask on an otherwise persistent ‘neo-liberal’ (‘post Washington consensus’) agenda”, as Adler et al. (2009: 26) describe this criticism. However, I position this research from the perspective that using ideas from PEA with more nuanced views of institutional change is a useful starting point for donors and NGOs.



### **3.3. Extending political economy analysis**

In this section I address the question of why I use political economy analysis - a framework predominantly developed by and for international aid donors, with the associated limitations and criticisms that I discuss above - as part of a guiding framework for an academic research project. I argue that the nature of this research project, a collaborative undertaking in partnership with a non-academic organisation, demands an approach that seeks to understand how non-academic organisations address similar research questions, yet also draws on the academic literature to inform, extend and improve these forms of analysis. Furthermore, the political economy analysis framework employed here is flexible enough to allow the use of different bodies of theory from the academic literature within the framework to explain or extend the research topics as required, as suggested by Harris (2013).

However, I do acknowledge and address the criticisms of PEA discussed so far. I do this by developing closer links to academic literature on institutions, institutional change and the influence of outsiders, starting from the observation that many attempts by outsiders to influence institutional change in low-income countries have failed to produce the intended outcomes. The approach developed involves a more detailed and realistic examination of the ability of external actors to effect change, including insights from literature which discusses the agency of individual development workers themselves. In this way I respond to the first two criticisms of PEA previously identified, which suggest a need for a more realistic appreciation of the constraints on international aid agencies and a more nuanced approach to institutional change.

To do this, I draw on areas of literature concerned with institutional change in relation to community-based natural resource management, district-level governance for delivering public goods, and national public sector reform, since rural water services delivery and WaterAid's work in Mali involves elements of all three themes. Each area of literature starts from the observation that many attempts by outsiders to influence institutional change in low-income countries have failed to produce the intended outcomes. However, there are differences between the areas of work, particularly in terms of the types of institutions and scales they focus on, and their relative optimism or pessimism about the role of external actors. This seems partially related to the backgrounds of the authors involved: all are

academics, but with differing levels of engagement with think tanks (such the Overseas Development Institute) or development agencies (such as the World Bank). I summarise the key areas of work and discuss each in turn to explore their strengths and weaknesses in more detail and how they can contribute to an extended PEA framework for the purposes of this thesis. However, I first briefly clarify the philosophical background to the research, and (given the different definitions of the term ‘institutions’ used in the literature) explain the understanding of the term that I adopt in this research.

### **Philosophical background to the research**

A brief discussion of the philosophical background to the research is helpful at this point to clarify certain key issues. Firstly, regarding how I conceive the nature of causality, understanding, explanation and prediction in this study.<sup>13</sup> Secondly, in how I understand individual agency, social structure and their interactions.<sup>14</sup> Thirdly, whether there is compatibility or tension between the understandings of causality and these other philosophical issues in the different literature that I draw upon, especially between the work by economists and political scientists (which comes generally from a more quantitative and policy-oriented background), and the literature from more qualitative social scientists such as geographers, anthropologists and sociologists.

My overall argument is that the framework I develop fits within the philosophy of critical realism, even though the literature I bring together involves both work that explicitly identifies its own critical realist roots (e.g. Cleaver 2012) and other work which has a background in new institutional economics (e.g. Andrews 2013) and for which there is debate about the extent of its crossover with critical realism (Lawson 1997; Pratten 1997; Downward et al. 2002; Hodgson 2007; House 2010). Critical realism is a philosophy which attempts to place itself between the ontological positions of objectivism and constructivism, and the epistemological stances of positivism and interpretivism. In this way, critical realism combines ontological realism and epistemological constructivism (Forsyth 2003; Maxwell

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<sup>13</sup> In referring to “understanding” and “explanation” I follow Manicas (2006) in noting that the two terms are frequently used interchangeably, but that “understanding” implies making something intelligible through the description of a mechanism, while “explanation” suggests being able to show how a combination of mechanisms produce a certain outcome.

<sup>14</sup> I consider “institutions”, the definition of which I discuss in greater detail in the next section, as social structures in the sense that the agency-structure debates use the term structure.

2009). This means that a critical realist approach to social science accepts the existence of 'real' social structures, but argues that these cannot always be observed empirically. Instead, theory must be used to explain the structures and causal mechanisms which give rise to 'actual' events and the empirical experiences of these events (Yeung 1997; Smith 1998; Grix 2004; Bryman 2008). Critical realism also emphasises the interplay of social structure (such as institutions) and human agency rather than prioritising the importance and therefore the analysis of one over the other.

However, some are pessimistic about the potential for overlap between work based on new institutional economics (NIE) and that drawing from critical realism. Pratten (1997) argues that the emphasis in new institutional economics on operationalising its findings (a link that I introduced in Section 3.2 when discussing the emergence of PEA from NIE) results in a search for a level of predictability which is not possible in practice, and so retains the weaknesses of the overly deductive approach of neoclassical economics. Yet critical realism itself uses the label 'critical' at least partly for the reason that it too sees the possibility of contributing to real-life change (Lawson 1997; Cleaver 2012). The key differences are that critical realism argues that exact prediction (in the form of 'if X, then Y, under conditions Z') is rarely, if ever, possible in social science, and that individual agency influences institutions as well as vice versa.

However, as I show in the rest of this chapter, although one of the areas of work that I draw on (Andrews and his collaborators) starts from the new institutional economics literature, it is in fact sensitive to the relation between actors and social structures such as institutions. It does not fall into either of the criticisms identified by critical realists of methodological individualism or unrealistic prediction. Booth, whose work I also discuss below, likewise seeks a position which takes into account both sides, arguing that rational-choice perspectives can have some use in debates about the formation of institutions, but do not validate the "bold posturing [by some economists] on topics about which they should consider themselves rank amateurs" (Booth 2011b: 11). Overall I too adopt a pragmatic position, arguing (in line with Downward et al. 2002) that critical realism should acknowledge that some level of observed regularity and forms of prediction are possible, if not in the quantitative forms suggested by deductivism.

The final question is therefore how the background of critical realism is reflected in the

analytical framework that I use. As I make clear throughout the rest of this chapter, my focus is on understanding how institutions concerning the financing and delivery of rural water services change, considering the interactions between actors and institutions and how each influences the other. This is an example of critical realism's key concern of examining the interplay between individual agency and social structure. In terms of the 'depth ontology' of critical realism (Sayer 1984; Smith 1998), this means that in this study I research the observable 'empirical' level (e.g. perceptions of relevant actors recorded through interviews, data collected on the functionality of water points and participant observation at workshops) to try to understand 'actual' events and states of affairs (e.g. how water management committees function, water usage practices and arrangements for sharing costs). However, in a critical realist approach the underlying level of social structure and causal mechanisms, although 'real', cannot be observed directly and must instead be interpreted through theory. This step in the research is therefore the point where I use the concepts within the analytical framework, such as "institutional bricolage" (Cleaver 2012), to attempt to explain the practices observed through the empirical work.

### **Defining institutions**

Having discussed the philosophical background to the research, it is also important to clarify the definition I use of the term 'institutions'. The definitions of institutions in the areas of literature under discussion essentially differ according to whether:

*a) Institutions are understood as rules, norms and arrangements ('rules of the game'), and organisations are understood as actors ('players of the game').* As discussed above, the political economy analysis approaches that I refer to broadly define institutions and organisations in this way. For example, Leftwich (2011: 323) describes organisations as "the formally or informally co-ordinated vehicles for the promotion or protection of a mix of individual and shared interests and ideas ... they are players of the game." The work by Andrews (2013) and collaborators that I explore later in this chapter also uses this definition, although Andrews (drawing on Scott 2008) helpfully sets out three different elements which combine to form institutions as 'rules of the game': regulative mechanisms, normative mechanisms and cultural-cognitive mechanisms. Regulative mechanisms, such as laws and formal rules, often involve sanctions from external third parties. Normative mechanisms,

including norms and values, relate to what is considered socially acceptable and therefore typically create incentives to comply through internal feelings of shame rather than external third party actions. The idea of cultural-cognitive mechanisms refers to beliefs and ideologies which frame the way actors interpret the world and what is possible, and therefore inherently limit their actions.

*b) Institutions are understood as rules, norms and arrangements, which can exist or be represented in the form of organisations.* I argue that Cleaver (2012) and the 'critical' institutionalist literature which she draws upon, discussed later in this chapter, base their work on this definition. For these authors, institutions are "arrangements between people which are reproduced and regularized across time and space and which are subject to constant processes of evolution and change" (Cleaver 2008: 8) or "social arrangements that shape and regulate human behaviour and have some degree of permanency and purpose transcending individual human lives and intentions" (Merrey et al. 2007: 196).

*c) Institutions are understood as organisations, which are held together by and produce rules, norms and arrangements.* This definition appears less common in the literature, but it is nevertheless important to note that it is used by some authors who otherwise are undertaking similar work to those discussed here on aspects of informality, hybridity and bricolage, such as Lund (2006) and Cold-Ravnkilde (2012).

By setting out these three different interpretations, I suggest that the key issue is actually one of labelling; in all cases, the scholars concerned are actually interested in rules, norms and arrangements and their formation and interplay with different actors, regardless of which combination of these are called 'institutions'. Therefore I argue that the definitions are compatible, provided what comes under the different labels is made clear. I adopt an understanding based on (b) for the purposes of this thesis; while I acknowledge that organisations are indeed actors or 'players of the game', in the case of bodies such as water management committees they are also representations of the relevant institutions, i.e. both the formal rules and informal local norms surrounding water management. The crucial point to examine is the similarities and differences in understandings in these sets of literature regarding how the processes of evolution and change of institutions occur, so it is this idea that I focus on next as I consider the three areas of literature in greater depth.

## Natural resource management, critical institutionalism and institutional bricolage

The first area of literature I discuss is that set out by Cleaver (2012),<sup>15</sup> concerned predominantly with community-based natural resource management and the problems of approaches which focus too much on formal institutions and the search for and application of general ‘design principles’. Cleaver (2012: 16) sets out the differences between two schools of thought on institutions by terming these schools “mainstream institutionalism” and “critical institutionalism”. Although in this thesis I refer predominantly to the work of Cleaver when considering critical institutionalism (and, as introduced below, the idea of “institutional bricolage”), I recognise as she does that this approach also shares many ideas with and draws upon the work of others who also aim to distinguish themselves from mainstream thinking on institutions for natural resource management, even if they use different terminology to Cleaver.<sup>16</sup> However, I draw most strongly on Cleaver’s work due to its strengths, which I explain below, in analysing the details of institutional change, agency and bricolage at the micro-level.

The key features of the two approaches are shown in Table 3.1 below (taken from Cleaver 2012: 16). To summarise, critical institutionalism refers to the body of literature which understands institutions as context-specific, dynamic and evolving, blurring across scales, and shaped by local history and politics. In contrast, Cleaver argues that mainstream institutionalism, which includes the literature on common property resources inspired by the work of Elinor Ostrom and the ideas of new institutional economics of Douglass North and others, seeks to identify common ‘design principles’ which can be applied across contexts and places too much emphasis on the local level without considering wider structures.

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<sup>15</sup> Cleaver’s (2012) book *Development through Bricolage: Rethinking Institutions for Natural Resource Management* also draws on her previous work including Cleaver (2000, 2002), Cleaver and Toner (2005, 2006), and Franks and Cleaver (2007).

<sup>16</sup> These include Mosse (1997) on sociological-historical institutionalism and Mehta et al. (2001) on post-institutionalist thinking.

Table 3.1. Key features of institutional thinking (Cleaver 2012: 16)

<b>Features</b>	<b>Mainstream institutionalism</b>	<b>Critical institutionalism</b>
Nature of institutions	Formal/public institutions in nested layers with horizontal and vertical linkages.	Blurring of boundaries and of scales, blending of institutional logics and forms (e.g. formal/informal).
Formation of institutions	Institutions formed through crafting; design principles characterise robust institutions.	Institutions pieced together through practice, improvisation, adaptation of previous arrangements.
Nature of decision-making	Decision-making and negotiations mainly conducted in public fora.	Decision-making and negotiations embedded in everyday life, shaped by history and politics.
Models of agency	'Bounded rationality' models of agency as strategic and purposeful – individuals as resource appropriators.	Agency as relational, exercised consciously and non-consciously – individuals with complex social identities and emotions.
Factors shaping human behaviour in institutions	Information, incentives, rules, sanctions and repeated interactions.	Social structures and power dynamics, relationships, norms, individual creativity.
Outcomes	Institutions can be crafted to produce efficient resource management outcomes.	Institutions evolve to 'socially fit': functioning may result in access to <i>or</i> exclusion from resources.

A key point to note is that Cleaver (2012) and other authors in the critical institutionalist school (e.g. Merrey 2013) acknowledge that at times they slightly caricature the work of Ostrom and other proponents of mainstream institutionalism. They argue that they do so in order to emphasise the differences between the two approaches and ensure that attention is drawn to key areas which are somewhat neglected by mainstream institutionalism. A further argument could be made (following Booth 2012) that even if the literature by Ostrom is more nuanced and context-sensitive than sometimes presented by Cleaver, the application of this work to common property problems in practice has often failed to demonstrate this sensitivity and has tried to apply 'design principles' in an overly mechanical way.

I do not argue for completely replacing mainstream institutionalism with critical institutionalism as part of a PEA framework. Instead I assess if it is possible to shift more towards an appreciation of critical institutionalism in both understanding and action, focusing on how institutions emerge rather than strict principles of what they should be. While parts of the work on PEA approaches so far do draw strongly on mainstream institutionalism, I argue that examples of PEA in the water and sanitation sector do also emphasise the importance of different scales and understanding how institutions evolve in particular contexts (e.g. Arsano et al. 2010; Harris, Kooy and Nam 2011; Rampa 2011). Therefore I suggest using PEA in such a way as to enable productive overlap between ideas of critical institutionalism and mainstream institutionalism. I agree with Cleaver (2012: 24) when she argues that the challenges for scholars aiming to better understand institutions are to develop analyses of complex processes which are also “legible” to policymaking, and to understand community-level issues of natural resource management within their wider geographical contexts. By comparing the features of the two schools of thought on institutions described in Table 3.1 I argue that it should be possible to develop political economy analysis approaches which bridge these.

Firstly, Cleaver’s observations on how each school of thought sees the nature and formation of institutions are a useful reminder that these issues must be considered when analysing institutions as part of a political economy analysis framework. This is the reason why I carefully examine the different definitions of institutions in the literature and why I draw on further work in subsequent sections which covers a range of scales and issues, all of which accept how institutions blend across levels and forms and focus on institutional change. Most recent PEA approaches already suggest that development interventions “work with the grain” (Kelsall 2011) regarding the formation of institutions, acknowledging that institutions are adaptations of previous arrangements. It is inherent in the process of donors and NGOs using PEA for guidance that there is a belief in the possibility of external actors having some influence on institutions which might support moves towards “good enough governance” (Grindle 2007). But this does not mean that they subscribe to strict design principles for doing so.

The second key lesson from Cleaver’s comparison of mainstream and critical institutionalism relates to the areas of decision-making, agency and the influences on actors’ behaviour. As I



explained in Section 3.2, PEA approaches have been criticised in relation to the nature of decision-making for containing little actual analysis of how incentives and related political processes really work (Landell-Mills et al. 2007; DFID 2009). PEA approaches have also shown weaknesses in terms of their models of agency and factors shaping human behaviour for sometimes lapsing into “incentive reductionism” and conceptualising incentives only in terms of narrow self-interest (Leftwich 2007; Fine and Milonakis 2009). These are areas where I argue that political economy analysis approaches should adopt insights from critical institutionalism regarding the agency and behaviour of different actors. In particular, I agree with Copestake and Williams (2012) that PEA can benefit from engagement with what they refer to as the “aidnography” literature<sup>17</sup> (Mosse 2004; Mosse and Lewis 2006; Eyben 2010) that aims to understand the agency and actions of development workers themselves, and their ability to influence institutional change. I discuss in Chapter Four how my close relationship with WaterAid in Mali helped me to address this issue and I analyse in more detail the roles of the staff of WaterAid’s partners in Chapters Six and Seven.

Drawing together these observations from a critical institutionalist perspective, Cleaver proposes “institutional bricolage” as a concept to describe the way that institutions actually tend to emerge as a mixture of socially embedded (based on particular social and cultural practices) and bureaucratic (based on more formalised ideas and structures) (Cleaver 2002, 2012). The idea of institutional bricolage seeks to avoid the false distinction of portraying institutions as either clearly formal or informal, and emphasises that local participants themselves, as well as intervening individuals and organisations, have some ability to shape institutions for managing resources such as water. Cleaver (2012) identifies a series of key features of institutional bricolage, two of which are particularly relevant to this study. Firstly, bricolage involves improvising on existing practices with new ideas, and adapting innovations from elsewhere to fit a particular context, such as taking formal state-endorsed ideas of water tariffs but then changing the rules on tariffs to suit local traditions. Secondly, the organisational forms of institutions (such as water management committees) often exist for multiple purposes rather than the single-purpose institutions imagined by mainstream institutionalism. In Chapter Seven I discuss how these ideas apply to the case study villages in this research.

Finally, perhaps the most important element of comparison between mainstream

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<sup>17</sup> “Aidnography” refers to undertaking ethnography of aid workers.

institutionalism and critical institutionalism, and a strength of how Cleaver conceptualises institutional bricolage, lies in what outcomes they see as possible. Critical institutionalism emphasises the possible unequal outcomes of institutional evolution rather than assuming that win-win solutions can be found. As I discuss in the following sections, the other areas of literature that I draw upon tend to be more optimistic about the ability of local actors and bricolaged processes of institutional change to deliver positive outcomes for the poor. In the next section I discuss work which focuses on wider issues of institutions for local governance and the delivery of public goods.

### **Local governance of public goods and practical hybridity**

The second area of literature that I bring to the discussion on institutional change is summarised in Booth (2012) and draws strongly on the Africa Power and Politics Programme (APPP) research project led by the Overseas Development Institute (ODI).<sup>18</sup> The key question of APPP was “which institutional patterns and governance arrangements seem to work relatively well and which work relatively badly in providing public goods, merit goods and other intermediate conditions for successful development?” (Booth 2012: vii). Local governance and the provision of public goods, including water and sanitation, were key research areas.

I argue that this work is relevant to linking political economy analysis with better understandings of institutional change for a series of reasons. Firstly, the APPP work addresses a similar set of problems to the critical institutionalist literature described by Cleaver, but helps widen the debate beyond natural resource management to the delivery of public and merit goods and local governance at levels beyond the community. Indeed, Booth (2012) explicitly acknowledges strong affinities between the concept of institutional bricolage used by Cleaver and the idea of practical hybridity used by APPP (discussed further below), although Booth does not explore in detail the similarities and differences between the two terms.

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<sup>18</sup> Booth’s (2012) report *Development as collective action problem: Addressing the real challenges of African governance* is the key synthesis paper which brings together the Africa Power and Politics Programme’s research in order to develop an overall theoretical framework. Other key literature of interest related to the programme includes Booth (2011a, 2011b), Kelsall (2009, 2011) and Olivier de Sardan (2011).

Secondly, this area of literature is interesting because of its links to and frustration with previous PEA work, and its desire to propose further practical possibilities for action by external organisations. Booth himself has acted as a trainer for DFID staff on conducting PEA, but like the PEA critics discussed in Section 3.2 expresses disappointment with progress made by aid agencies in actually changing their approaches: "even the best donor governance advisers and most reflective country activists have real trouble imagining what to do differently" (Booth 2012: 7).

This observation leads to the third key element of interest in the APPP work: its suggestion that part of the problem with previous governance approaches (even those based on ideas of "good enough governance" and PEA rather than 'good governance') is an over-focus on principal-agent thinking. By this they mean that donor-funded efforts to improve governance have tended to be either 'supply-side' (measures intended to improve governments' ability to deliver public services, such as civil service reforms) or 'demand-side' (ways of empowering citizens to claim their rights, such as community monitoring). However, Booth argues that both approaches are based on the principal-agent problem of one set of actors getting another to perform better, whereas the delivery of many forms of public goods actually involves more challenging collective action problems.<sup>19</sup>

The APPP's objective then became the search for theory beyond simply the idea that context matters, as "a meeting point between researchers' recognition of complexity and practitioners' hunger for guidance" (Booth 2012: 71). They call the concept developed "practical hybridity", arguing that this is what is required for successful delivery of some public goods. Practical hybridity involves two elements. Firstly, the institutions that emerge address collective action problems in the particular context, rather than being externally-proposed solutions transferred from elsewhere. This is the basic argument of 'best fit' rather than 'best practice' already common in most of the PEA literature. Secondly, such institutions will draw on "local cultural repertoires" (Booth 2012: 88), because this is less costly in terms of social disruption than creating new institutions from scratch. This argument is similar (but elaborated in less depth) to Cleaver (2012: 48) observing how institutions that socially fit "minimise cognitive energy" or (in economics terms) minimise

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<sup>19</sup> Booth (2012: 11) defines collective action problems as existing "where a group or category of actors fail to cooperate to achieve an objective they agree on because the first-movers would incur costs or risks and they have no assurance that the other beneficiaries will compensate them, rather than 'free riding'. The problem is more likely to arise when the group in question is large and the potential benefits are widely shared ('non-excludable')."

transaction costs.

A further strength that the idea of practical hybridity shares with institutional bricolage is the focus on the actual outcomes that result in terms of access to public services (or natural resources). Booth (2012: 81) argues that practical hybridity refers to the formation of institutions that are not "merely palliative adaptations to the inadequacy of state provision." This is a crucial distinction that I explore further in Chapters Six and Seven in relation to the potential and limits of community financing of rural water services. The Mali case study suggests that the optimism regarding the benefits of practical hybridity evident in the APPP work may not apply in other contexts where the capacity of local actors is limited by the resources available.

However, a weakness of the concept of practical hybridity is that the APPP literature provides less detailed theorisation around issues of agency and the role of particular individuals than the critical institutionalist approach and Cleaver's idea of institutional bricolage, or the work of Andrews (2013) on institutional entrepreneurs discussed below. This is why I bring into the discussion the literature on the roles of development workers themselves (referred to as "aidnography" by Copestake and Williams 2012).

Finally, despite its policy- and practice-oriented motivations, the APPP work is pessimistic about the role of external organisations in promoting practical hybridity, principally for the same reasons as those that I discussed under the criticisms of PEA which focus on donor constraints. Booth has "serious doubts about whether official development agencies will ever achieve the quality of understanding and the management flexibility" required, since "even if it were possible to reduce the perverse effects of aid pressure, there would remain a set of issues to do with the accountability requirements which are intrinsic to aid as a transfer funded by Northern taxpayers" (Booth 2012: 95-96).

## **Public sector reform, bricolage and muddling through**

The third area of literature on institutional change that I draw on focuses on externally-influenced public sector institutional reform, mostly at a macro level, such as reforms to public financial management systems. The key arguments are set out in Andrews (2013) and Andrews, Pritchett and Woolcock (2012).<sup>20</sup> Their key argument is that the response to many intended public sector reforms in low-income countries, especially those reforms driven by external aid agencies, is that “governments and organisations pretend to reform by changing what policies or organisations *look like* rather than what they actually *do*” (Andrews, Pritchett and Woolcock 2012: i). The authors call this phenomenon “reforms as signals” (Andrews 2013): governments prioritise form over function in order to satisfy donors and maintain aid flows. As I discuss in Chapter Five, this is particularly relevant to the discussion of donor influence on national policymaking in Mali.

Instead, these authors argue that some form of “purposive muddling through” is required, suggesting that “incremental reforms focused on addressing problems frequently result in hybrid combinations of elements that work together to get the job done” (Andrews, Pritchett and Woolcock 2012: 14). They then propose a structured approach which external organisations can adopt in order to promote these processes, which they call Problem-Driven Iterative Adaptation, or PDIA (Andrews, Pritchett and Woolcock 2012). This involves supporting an environment for decision-making which encourages local experimentation and the engagement of wide sets of actors so that proposed reforms are feasible and implementable.

I argue that this literature is of particular interest in linking political economy analysis, mainstream institutionalism and critical institutionalism because of the way it takes ideas from new institutional economics as its starting point but then, like Cleaver and the critical institutionalist school of thought, uses concepts from other areas of social science such as bricolage. As I already discussed in relation to the definition of institutions, Andrews (2013) is also sensitive to the role of norms and beliefs in influencing agents, in addition to formal rules. Like Booth (2012), Andrews is critical of international agencies such as the World Bank for acknowledging that institutional forms cannot simply be transferred across countries,

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<sup>20</sup> These most recent publications also draw on previous work by the authors and other collaborators, principally Adler, Sage and Woolcock (2009); Pritchett, Woolcock and Andrews (2012); Pritchett and Woolcock (2004); and Woolcock, Szepter and Rao (2011).

yet commonly failing to move beyond this in practice.

Examination of this literature is also useful to show how ideas which are similar to those of Cleaver and the critical institutionalist school can be applied to national-level institutional changes. Like Cleaver, Andrews (2013) uses the idea of “bricolage” to refer to the process of recombining existing practices with new ideas to result in institutional change, and pays close attention to the role of different agents in these processes. This body of work also demonstrates a useful focus on the agency of development workers themselves, which provides an opportunity to link it with the “aidnography” literature that I introduced above. Andrews (2013) refers to “institutional entrepreneurs”, those agents who break with existing institutional arrangements and create alternative rules and practices. I bring these discussions together in relation to the role of the staff of WaterAid’s partners in Chapters Six and Seven.

However, there are also some differences between this area of work and critical institutionalism. As emphasised by the second area of criticism of PEA approaches and by critical institutionalism, it is important to consider conflict as a possible part of the processes and results of institutional change. The consideration of conflict represents both a strength and weakness in the work of Andrews and his collaborators. Pritchett and Woolcock (2004) remind us that institutions often emerge precisely for the reason of resolving social conflicts, but that during this process the memory of the original conflict is frequently lost or obscured, leaving behind only a “creation myth”. They use this observation as a further argument against attempts to transplant institutions from one context to another without understanding the underlying issues at stake.

Adler et al. (2009) even more directly address issues of power and conflict in their examination of institutional change. They are perhaps over-optimistic regarding the ability of externally-supported change to help ‘manage’ conflict, hoping that “interim institutions” can emerge as mechanisms to address conflict during longer-term processes of institutional change. However, there is also a sense of realism in this work in the way that Adler et al. (2009) respond to an argument similar to the third area of criticism of PEA that I identified in Section 3.2. As they put the question: "are arguments for incrementalism and hybrid forms of engagement between formal and informal systems a conservative (‘neoliberal’) strategy of institutional reform?" (Adler et al. 2009: 26). They argue that while some would prefer

more radical action, it is more realistic for external interveners to look to support gradual change based on adapting existing institutions towards possible win-win situations. I sympathise with this point of view and agree that it provides a useful way for considering the approaches of organisations such as WaterAid to institutional change. However, as Cleaver reminds us, it is also important to understand where outcomes are unequal and power relations mean that the poor are unlikely to be ‘winners’.

### **Summary of analysing institutional change**

In Table 3.2 I summarise the three sets of literature discussed in the previous sections in terms of the key concepts used, their guidance for policy and practice, and their strengths and weaknesses.

Table 3.2. Summary of three areas of literature on institutional change

Key reference(s) and application	What problem does this work respond to?	Key concepts	Guidance for policy and practice	Strengths	Weaknesses
Cleaver (2012) Community-based natural resource management	“Mainstream institutionalism”: work on common pool resources and natural resource management which over-focuses on formal institutions and generally applicable ‘design principles’.	“Institutional bricolage”: institutions form through improvisation and adaptation of ideas from different sources.	Build on the local institutions that exist where possible, while recognising that these may promote inequality.	Detailed focus on local-level mechanisms and different aspects of the idea of bricolage.  Emphasises the possibility of unequal outcomes.	Sometimes slightly caricatures the literature it argues against (such as the work of Ostrom).  Struggles to balance the desire to inform policymakers with its scepticism.
Booth (2012) Local governance of public goods, especially at district levels (i.e. beyond the community level)	The good governance agenda, and the fact that even attempts to go beyond this (such as the use of PEA) have usually failed, since they have focused just on principal-agent problems (whether supply-side or demand-side) rather than collective action.	“Practical hybridity”: solutions to locally-identified collective action problems which drawn on existing cultural practices.	Move past principal-agent thinking to support local reformers in solving collective action problems; outsiders act as “convenors and brokers”.  Longer-term, work out how aid agencies can move away from short-term pressures of disbursing money and immediate results.	Framing the local government level as a form of collective-action problem, in addition to the community level.  Explicit attempts to provide guidance for interveners while acknowledging the constraints on aid agencies.	Sometimes over-optimistic on the ability of local actors to solve problems, without paying sufficient attention to limits on resources and capacity.  Lack of detail on the processes of practical hybridity.



Key reference(s) and application	What problem does this work respond to?	Key concepts	Guidance for policy and practice	Strengths	Weaknesses
Andrews (2013) Andrews, Pritchett and Woolcock (2012) Adler, Sage and Woolcock (2009) National public sector reforms	“Reforms as signals” or “isomorphic mimicry”: the processes by which externally-driven public sector reforms are adopted on paper but without the intended functionality.	Bricolage through “purposive muddling through”: “Incremental reforms focused on addressing problems [which] result in hybrid combinations of elements that work together to get the job done.”	“Problem-Driven Iterative Adaptation”: encouraging local experimentation and “engaging broad sets of agents to ensure that reforms are ... politically supportable and practically implementable.”	Highlights the overall policy reform level and the role of “institutional entrepreneurs” within this.  Proposes different practical ways of working for outsiders.  Some discussion of power, and suggests first step should be to look for potential win-win situations...	... but perhaps not as engaged with issues of conflict as it should be (acknowledges that processes of change may be contentious but does not explore in detail).

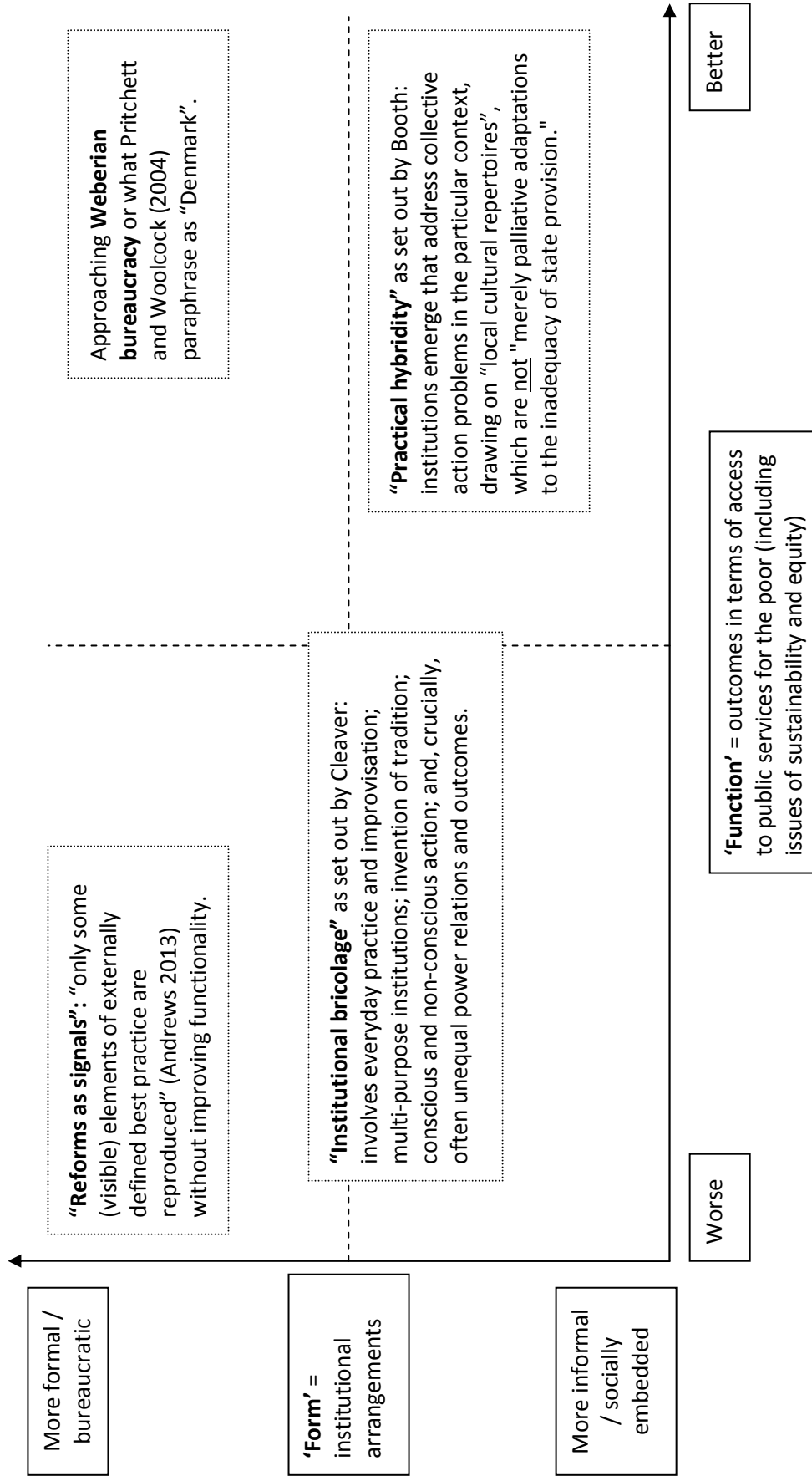
Examining the strengths and weaknesses of these areas of literature provides a reminder of three key issues. The first is to ensure that concepts such as bricolage and hybridity are analytically useful in understanding how and why institutional arrangements for public services have emerged in particular forms, and to avoid their use as terms which become too generalised.<sup>21</sup> Secondly, we must pay close attention to the outcomes of institutional arrangements (as Cleaver emphasises), distinguishing between what Booth (2012: 81) refers to as “merely palliative” responses to a lack of state-delivered public services and “constructive” hybrid alternatives (Meagher 2012: 1074).

I address these first two issues by providing in Figure 3.1 a simplified representation of how the different areas of literature on the formation of institutions relate to each other, and how the concepts they refer to typically lead to differences of ‘form’ (in terms of how institutional arrangements are mixed between the formal/bureaucratic and informal/socially embedded) and ‘function’ (in terms of access to public services for the poor). The diagram demonstrates the key difference between “practical hybridity” as described by Booth (2012) and “institutional bricolage” as set out by Cleaver (2012) in terms of the typical outcomes emerging from each process.

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<sup>21</sup> Goodfellow (2013) makes this point in relation to recent literature on conflict, governance and the analysis of institutions for security and public authority, which uses the terms ‘hybrid’ and ‘hybridity’ extensively but sometimes vaguely.

Figure 3.1. Conceptualising institutional arrangements and outcomes for public services



Thirdly, the literature highlights the distinction between analysing how institutional change at different levels actually happens (for example, through processes of bricolage) and assessing whether the approaches of WaterAid and other actors actively support bricolage and ‘best fit’ or attempt to promote more rigid ideas of ‘best practice’. It is important to note that actors such as WaterAid may publicly claim to promote ‘good governance’ and ‘best practice’ while being more sensitive to ideas of ‘best fit’ in their actual activities. The literature on the agency of development workers themselves is helpful in understanding these possible differences (Mosse 2004; Mosse and Lewis 2006; Eyben 2010). In the next and final section of this chapter I summarise the overall conceptual questions that emerge from these issues, how they fit into the wider political economy framework and how they relate to the structure of the analysis in the remainder of thesis.

### **3.4. Conclusions and structure of the analysis**

In this chapter I have shown a way of combining different areas of literature to create an extended political economy analysis framework which provides a systematic approach to the analysis of institutional change related to the financing of rural water services. This approach demonstrates how a political economy analysis framework can draw on further theoretical concepts relevant to the particular problem, as suggested by Harris (2013).

The framework also highlights the overall conceptual questions that arise from this discussion. These questions overlap the different elements of a political economy analysis approach (structural factors, institutions and agents) and the different geographical scales of interest in Mali (national, municipal and community). In Figure 3.2 I show how these key conceptual questions relate to the analytical framework and the different scales. The text boxes represent schematically the overlap of each question with the different PEA elements and scales.<sup>22</sup> I also use the framework to provide a structure for the key analysis part of this thesis, Chapters Five, Six and Seven. This is represented in Figure 3.3, which shows how the issues that were found to be important during the research are addressed at each different geographic level: the national sector context, the decentralised local government level, and community and household levels.

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<sup>22</sup> Note that as I have discussed in relation to the definitions of institutions and agents, institutions can take the form of organisations, but organisations are also actors, as are individuals within those organisations - these overlaps are represented on the left of the diagram.

Figure 3.2. Simplified schematic of the key conceptual questions developed in the analytical framework and how they apply across different scales

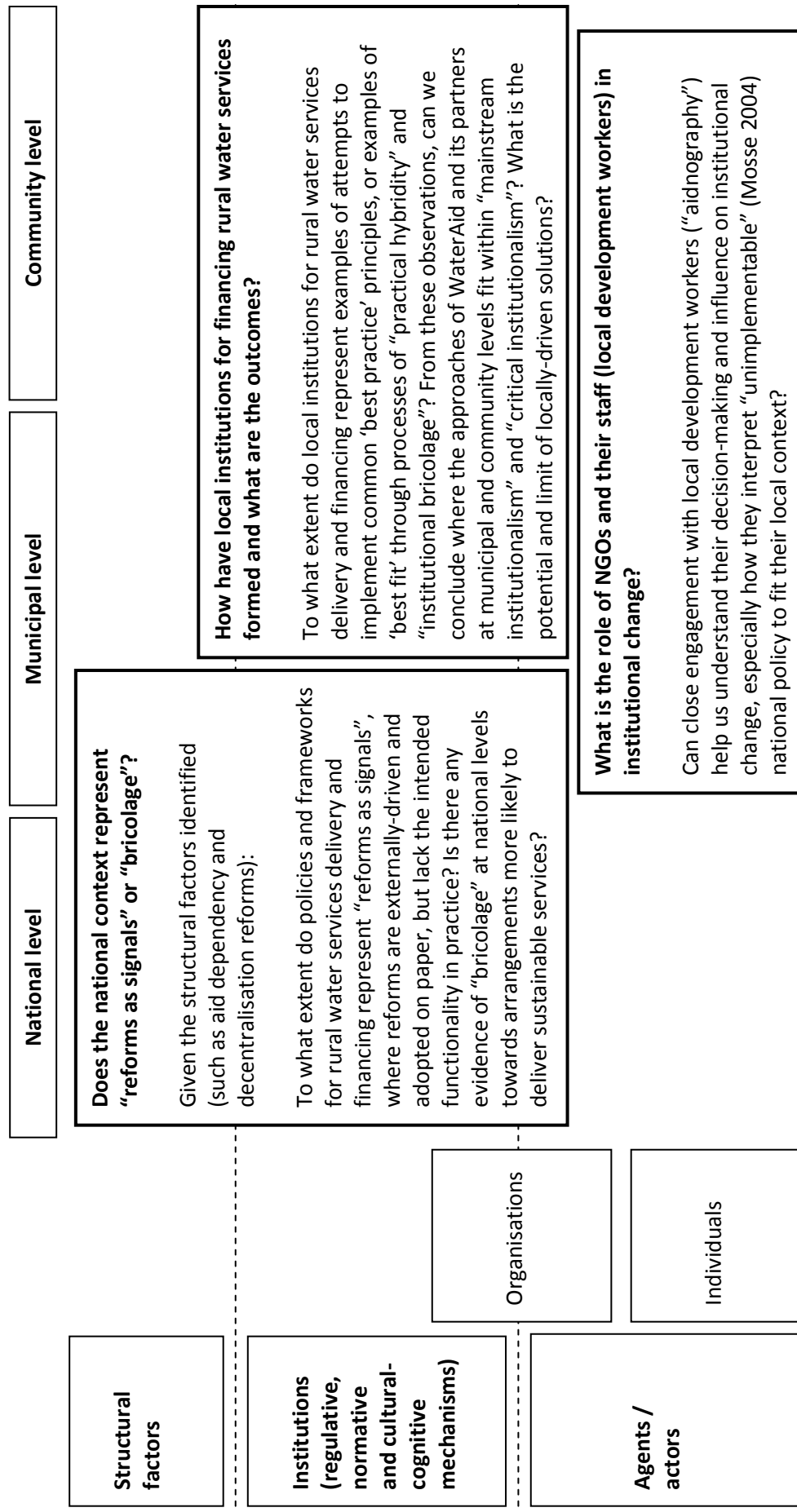
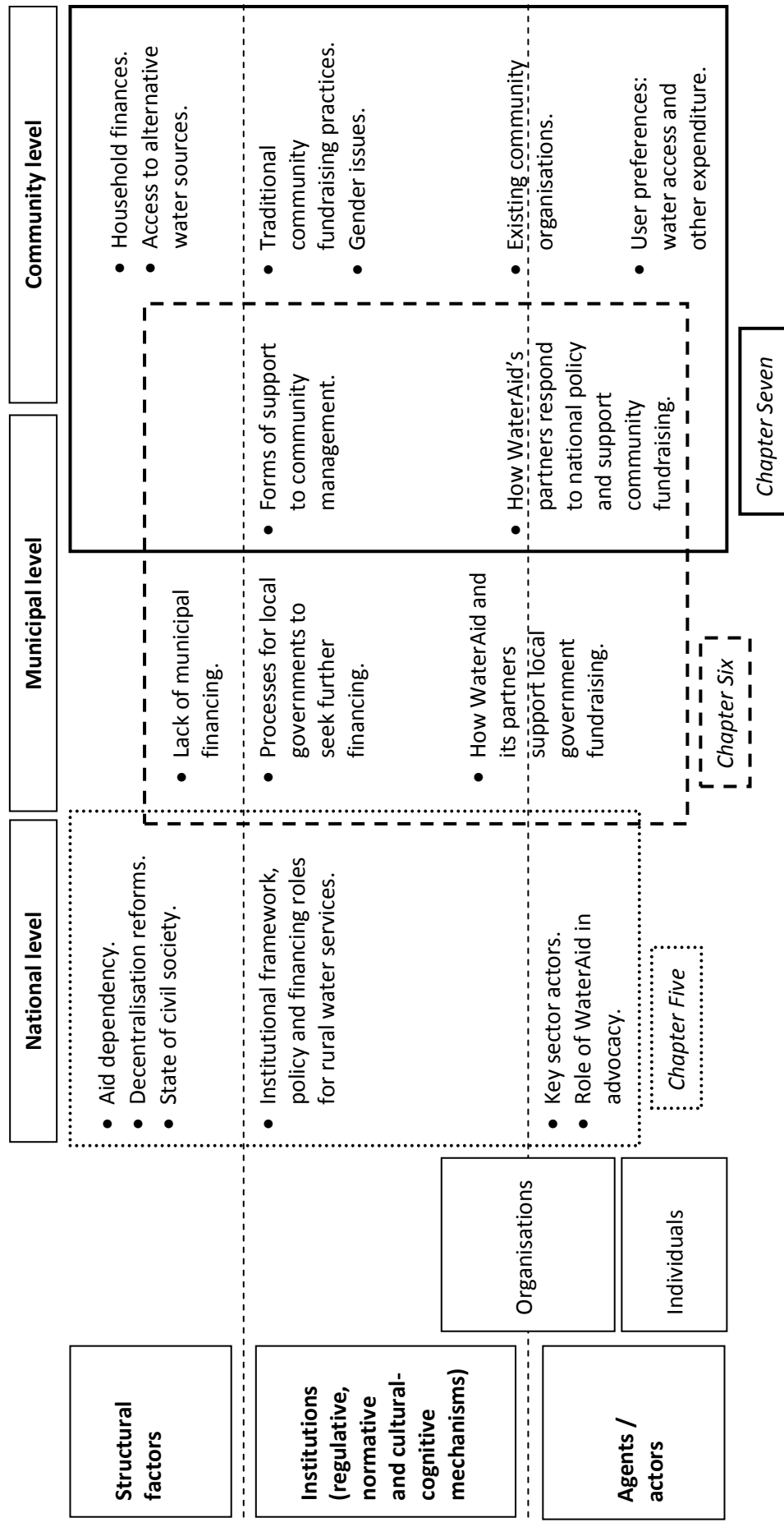


Figure 3.3. Simplified schematic of how the analytical framework is used to link different scales and key issues with the scope of each analysis chapter



As Figure 3.2 and Figure 3.3 both show, there is considerable overlap between the municipal and community levels and Chapters Six and Seven concerning the forms of support to community management and the role of WaterAid's partners in influencing local financing arrangements. I also place greater or lesser emphasis on each element of the extended PEA framework depending on its importance in analysing the key question of the chapter. For example, in Chapter Five, I stress the importance of understanding the key structural issues of the historical evolution of the sector and the influence of donors on national policies. In Chapters Six and Seven, there is greater emphasis on the discussion of institutions and the role of WaterAid and its partners in institutional change. Chapter Seven's focus on the community level also requires a strong appreciation of the agency of representatives of WaterAid's partners, and of water users themselves, as well as the structural factors of household finances and access to alternative water sources.

Before proceeding with the analysis, in the next chapter I set out the research methodology. In particular, I explain how I addressed the challenge of making the research relevant to academia, policy and practice and how close engagement with the staff of WaterAid and its partners helped me understand their agency and influence.

## Chapter Four - Research methodology and partnership with WaterAid

### 4.1. Introduction

In this chapter I describe how the methodology used for the research and the collaborative partnership with WaterAid developed. The research was funded by the Economic and Social Research Council as a Collaborative Award in Science and Engineering<sup>23</sup> (CASE) studentship, with Royal Holloway as the host institution and WaterAid as the non-academic partner. This partnership provided an opportunity for engaging closely, through elements of action research, with actors directly involved in trying to develop sustainable approaches to rural water supply, following Carter's (2013) argument for researchers to focus on *how* to improve WASH services. However, this commitment to action required balancing with the academic requirements of the research, and was further affected by the coup d'état in Mali in March 2012.

I therefore describe the evolution of the research process as a whole, from the beginning of the fieldwork period in 2010 to the subsequent analysis and follow-up in 2012, discussing the three key influences on how the process unfolded. The first influence was how the emphasis of the research topic evolved over time as my own understanding of the problems developed. Although the key research themes and questions remained the same as I set out in Chapter One, the focus shifted in the early periods of the fieldwork between the sustainability and financing of community water points, and the use of household wells through the promotion of self-supply approaches. I discuss these changes in Section 4.2, and summarise the methods used.

The emphasis changed again in the later part of the fieldwork as I worked more closely with WaterAid and its partners. The evolving partnership with WaterAid highlights the second major influence on the process: how I addressed the need for the research to respond to the three potentially competing demands of "generating knowledge, informing policy or guiding practice" (Cleaver and Franks 2008: 165). Given the importance of finding a balance between these three elements, I dedicate Section 4.3 to discussing this part of the process.

I also discuss the implications for the research of the coup d'état and subsequent

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<sup>23</sup> Despite the name, CASE studentships are for research in the social sciences.



deteriorating political and humanitarian situation from March 2012 onwards. The crisis in Mali had the direct impact of preventing the final planned fieldwork visits and the indirect - and understandable - effect of shifting the focus of WaterAid, its partners and the sector in general towards more immediate humanitarian concerns rather than long-term discussions of sustainability. I finish this chapter with an 'honesty box' for the limitations and trade-offs involved in the methodology and research process, and an assessment of how these issues affect the research results.

## **4.2. Research timetable, methods and case study selection**

### **Overview of timetable**

In this section I describe the key research timetable and activities. I summarise the 17-month period I spent in Mali to undertake language learning and fieldwork (August 2010 to December 2011), including the different forms of involvement with WaterAid and its partners. I explain how the focus of the village-level research activities shifted between financing for the recurrent costs of community water points and the promotion of self-supply approaches. I go into more depth about the methods used and the relationship with WaterAid in subsequent sections.

The first period of fieldwork, from August 2010 to January 2011, had two key aims: following up research I had undertaken for my Masters dissertation in 2009 and doing the preparatory work for the main PhD fieldwork. This follow-up to the Masters included visits to the same areas where I did research in 2009 to check on progress and update reports based on this work (to support WaterAid's policy work, as I discuss in Section 4.3). The preparatory work for the PhD included language learning, piloting possible new research methods and tools, and discussing the selection of case study areas with WaterAid and its partners. This initial period was also an opportunity to build up relationships, develop further ideas with WaterAid staff and learn more about the organisation's general approach by participating in relevant workshops and events (a full list of which is included in Appendix 1).

A key question at this stage of the fieldwork was the extent to which the research focused on alternative service delivery models to the approach of community-based management of

water points which were originally installed by an external organisation. As I explained in Chapter Two, self-supply (initiatives undertaken by individuals, households or communities to improve their own water provision) is one such possibility in Mali. During my initial interviews with staff of WaterAid's partners, they suggested that collective fundraising for the recurrent costs of community water points was so challenging that I should also strongly consider initiatives to promote alternatives. Therefore from February to April 2011 the fieldwork focused on two self-supply pilot projects, one by WaterAid's partners and one which was a collaboration between UNICEF and the health services, that had tried to encourage households to make improvements to their own hand-dug wells to provide greater protection from contamination. However, as I discuss in Chapter Seven, the scope and results of these pilot projects were limited to small geographic areas. Therefore during the same period I also started research on collective fundraising for community-managed water supplies, and once I had completed fieldwork in the self-supply project areas, the research focus shifted further towards community-based systems.

This shift, from May 2011, was helped by the opportunity to link the research more closely to WaterAid's own initiatives using its new *Sustainability Framework* (WaterAid 2011b). I explain my involvement in this process in more detail in Section 4.3.<sup>24</sup> In brief, it meant that from May to August 2011 I helped support the start of WaterAid's discussions about how to use the *Sustainability Framework* to analyse its own work, while also continuing my own research on community fundraising and finishing some remaining parts of the fieldwork on self-supply projects. From September to December 2011, I was then more closely involved in supporting fieldwork by WaterAid's partners at local government and community levels on sustainability and financing. During the same period I completed my own research in different villages and participated in a number of key WaterAid events related to different aspects of WASH financing. All four key stages of fieldwork that I describe above are summarised in Table 4.1. In the next section I set out in more detail the key methods used for each part of the research.

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<sup>24</sup> I also include in Appendix 3 a copy of a short paper written for WaterAid summarising the process of using the *Sustainability Framework* in Mali (Jones 2012).

Table 4.1. Summary of research activities in different periods during fieldwork

Period	Key activities	Additional activities
August 2010 - January 2011	<ul style="list-style-type: none"> <li>• Language learning.</li> <li>• Following up Masters fieldwork with additional visits and developing subsequent briefing notes, a conference paper and a journal article.</li> <li>• Piloting new elements of the methodology.</li> <li>• Discussing case study village selection with WaterAid and its partners.</li> </ul>	<ul style="list-style-type: none"> <li>• Taking part in WaterAid's evaluations of CLTS pilot projects.</li> <li>• Upgrading from MPhil to PhD.</li> <li>• Attending and presenting at the IRC Symposium in the Netherlands on <i>Costs, finances and accountability for sustainable WASH services</i>.</li> </ul>
February - April 2011	<ul style="list-style-type: none"> <li>• Fieldwork on self-supply pilot projects and community fundraising.</li> </ul>	<ul style="list-style-type: none"> <li>• Participating in key WaterAid events: the WaterAid West Africa LMDGI conference in Burkina Faso, a CLTS review workshop, and the Annual Review with partners.</li> </ul>
May - August 2011	<ul style="list-style-type: none"> <li>• Continuing fieldwork on community fundraising and finishing fieldwork on self-supply.</li> </ul>	<ul style="list-style-type: none"> <li>• Participating in the WaterAid West Africa sustainability workshop in Liberia and starting discussions about the <i>Sustainability Framework</i> in Mali.</li> </ul>
September - December 2011	<ul style="list-style-type: none"> <li>• Supporting WaterAid's fieldwork on financing and sustainability.</li> <li>• Fieldwork on municipal financing.</li> <li>• Finalising fieldwork on community fundraising.</li> </ul>	<ul style="list-style-type: none"> <li>• Participating in key WaterAid events related to financing issues: workshops on sanitation marketing, 'marketing' sector development plans, and the Forum of Mayors.</li> <li>• Attending and presenting a paper with one of WaterAid's partners at the Rural Water Supply Network Forum in Uganda.</li> </ul>

## **Methods and development of research tools**

In Table 4.2 I give an overview of the research methods used in relation to the key empirical questions. For ease of reference, I present the methods in the order in which the evidence is used in the analytical chapters of this thesis (Chapters Five, Six and Seven) and categorise the methods according to the questions they contributed most towards, noting in brackets where methods also contributed to a second key question. I also include the key dates for each activity to help place these within the chronological timetable described above. I include a full list of research activities in Appendix 1 and copies of research tools in Appendix 2.

Table 4.2. Summary of key methods and scope within different research areas

Research questions	Methods and scope	Used in	Key dates
<ul style="list-style-type: none"> <li>• What are the influences at national level on rural water sector policy and practice concerning service delivery approaches and cost-sharing arrangements?</li> <li>• What is WaterAid's role in influencing the national sector?</li> </ul>	<ul style="list-style-type: none"> <li>• 17 semi-structured interviews with WaterAid partners and other key informants in the water sector.</li> <li>• Participation and observation in nine WaterAid events and workshops.</li> <li>• Support to organising a further three workshops as part of WaterAid's research using the <i>Sustainability Framework</i>.</li> </ul>	Chapter Five	Sept 2010 - Dec 2011 & Nov 2012 (remotely)
<ul style="list-style-type: none"> <li>• What are the contributions of different actors to recurrent costs at local levels?</li> <li>• How and why have these cost-sharing arrangements emerged?</li> <li>• What models of service delivery and direct support are used?</li> <li>• What is the influence of WaterAid and its partners on institutional change at municipal levels?</li> </ul>	<ul style="list-style-type: none"> <li>• 14 semi-structured interviews with WaterAid staff, partners, local government officials and area mechanics across five municipalities (a total of 22 interviewees, since some were joint interviews).</li> <li>• Quantitative expenditure data was collected from the key informants in four of the municipalities.</li> </ul>	Chapter Six	Jul - Nov 2011
<ul style="list-style-type: none"> <li>• What is the functionality of water points associated with these cost-sharing arrangements?</li> </ul>	<ul style="list-style-type: none"> <li>• Survey by WaterAid's partners and local consultants of all 1342 water points in the 15 rural municipalities where WaterAid works (I supported the development of the survey tool and performed the data analysis myself).</li> </ul>	Chapter Six	Nov 2011

<b>Research questions</b>	<b>Methods and scope</b>	<b>Used in</b>	<b>Key dates</b>
<ul style="list-style-type: none"> <li>• What are the community contributions to recurrent costs and how do communities raise this money?</li> <li>• How and why have these arrangements emerged?</li> </ul>	<ul style="list-style-type: none"> <li>• (Key informant interviews and budget analysis in four municipalities and the water point survey in 15 municipalities as described above.)</li> <li>• 15 key informant interviews and six focus groups and participatory exercises across two communities.</li> <li>• Eight focus group discussions (by WaterAid's partners) across eight communities considered examples of successful fundraising, and eight follow-up group interviews with water management committees and women's groups in four of these communities (by me).</li> </ul>	Chapter Seven	Mar - May 2011 & Aug - Nov 2011
<ul style="list-style-type: none"> <li>• How does household expenditure on water services compare to expenditure on other services and assets?</li> <li>• What are the limits to what users are able and willing to pay?</li> </ul>	<ul style="list-style-type: none"> <li>• Four focus groups and participatory exercises across two communities.</li> <li>• Structured interviews and accompanying quantitative financial questionnaire in 11 households across two communities. Two interviews were conducted with each male household head, one interview with each female.</li> <li>• 375 rapid household surveys (by WaterAid's partners) across 16 communities in four municipalities.</li> </ul>	Chapter Seven	March - Nov 2011

<b>Research questions</b>	<b>Methods and scope</b>	<b>Used in</b>	<b>Key dates</b>
<ul style="list-style-type: none"> <li>• What water sources do people actually use? Are these improved or unimproved points?</li> </ul>	<ul style="list-style-type: none"> <li>• (375 rapid household surveys as described above.)</li> <li>• Focus group discussions (by WaterAid's partners) in 16 communities in four municipalities.</li> </ul>	Chapter Seven	Sept - Oct 2011
<ul style="list-style-type: none"> <li>• What alternative service delivery models to community management have been promoted and what are the results?</li> </ul>	<ul style="list-style-type: none"> <li>• 12 semi-structured interviews with key informants at national and regional levels on approaches to the promotion of self-supply.</li> <li>• 25 semi-structured interviews with implementers and users in three municipalities (UNICEF pilot project) and two villages (for WaterAid project) where self-supply pilot projects were undertaken.</li> </ul>	Chapter Seven	Jan - Mar 2011 & June 2011

As explained, one of the aims of the first period of fieldwork was the piloting and testing of tools. This was done for the participatory methods, focus group discussions and household surveys undertaken at community level. The tools were piloted in two communities where I had undertaken research for my Masters dissertation in 2009, because my translator and I were already known in those communities and our 'gatekeepers' (representatives of the water management committee in each village) were happy for us to spend more time there for the purposes of testing different methods. Data from these communities was only used for piloting and does not form part of the main research. Although during the research undertaken with WaterAid's partners all tools were developed as collaboratively as possible, one of the weaknesses in this part of the research was the lack of time to pilot these tools in the field. I discuss this relation to the limitations and trade-offs of the research methodology in Section 4.5.

For the semi-structured key informant interviews at national and municipal levels, broad interview outlines were developed to ensure key themes were covered. However these

were intentionally left open-ended to allow conversations to be as natural as possible and were adapted as the research progressed (Flick 2006). Analysis of the qualitative data was undertaken through manual coding and summarising of key findings from different discussions and interviews. I considered using qualitative analysis software to assist the coding and analysis process. However, based on my experience using qualitative analysis software in my Masters dissertation (for a set of over fifty semi-structured interviews on one key theme) I decided that the smaller number of interviews on each different question in this research did not justify the time investment required to set up computer-assisted analysis.

Overall, testing the tools and analysis proved particularly important in relation to two of the methods used. At the start of the research, I wanted to test potential ways of assessing the relative poverty or wealth of different households and communities (if needed, by aggregating household data). Although I never planned to undertake inferential quantitative analysis using wealth indicators, I hoped that this data would still be useful for the purposes of sampling households with different wealth characteristics, understanding local perceptions of wealth and poverty, and enabling comparisons between the study area and other parts of Mali. I had some previous experience of the challenges of using participatory wealth ranking methods (Cleaver and Toner 2005, 2006; Hargreaves et al. 2007). During my previous fieldwork in Mali I attended a meeting of members of different water management committees, at which an outreach worker from the local NGO tried to facilitate a poverty ranking exercise. However, this proved almost impossible: most participants said that everyone in the area was poor, with no distinction between different possible levels of poverty (Jones 2009). Similar difficulties of attempting to conduct participatory poverty ranking in Mali were observed by Khan (2011).

However, piloting different methods during this fieldwork showed that two useful and complementary approaches might be possible. The first was developing rapid household surveys which included the ten simple indicators used by the *Progress out of Poverty Index* or “poverty scorecard” for Mali (Schreiner 2008, 2010) and additional questions about water and sanitation access. The ten indicators assess the likelihood that a particular household



falls within the different poverty definitions that are used in Mali.<sup>25</sup> In this research the poverty scorecard was intended to be used for two purposes. Firstly, it was used for identifying and sampling a mix of relatively poor and relatively wealthy households in the two villages where detailed interviews on household finances were conducted (equivalent to the use of the scorecard for targeting). Secondly, it had been planned to provide an estimate of the overall poverty rates in the case study villages, in order to compare these to national and regional figures. However, it was not possible to use the scorecard for this second purpose because of the poor quality of available secondary data in Mali. National estimates of poverty rates are based either on data from the 2001 Mali Poverty Evaluation Survey (EMEP) or more recent smaller and more specific surveys. However, the definitions used and rates estimated are inconsistent, so it was not possible to undertake a useful comparison.

The second approach developed during piloting was closer to the idea of a participatory wealth ranking exercise and was designed to provide insights into the views of research participants on wealth and poverty in addition to the indicators based on national statistics. I developed exercises which involved participants categorising those household goods and assets that were considered essential (such as food and some farm equipment) and those considered desirable (such as a bicycle or a radio). The desirable goods were ranked in order of typical preference, and the essential assets were further divided into those which all households in the village possessed, and those which not all households possessed. In this way three broad categories of wealth or poverty were developed: the poorest households, which did not have all the essentials; households in the middle which had the assets considered essential but few of the desirable assets; and richer households that possessed many of the desirable assets. As I discuss in Chapter Seven, this exercise was helpful in gaining some understanding of typical household expenditure priorities.

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<sup>25</sup> The scorecard is based on data from the 2001 Mali Poverty Evaluation Survey (EMEP) and extracts the indicators which correlate strongly with income poverty and are relatively easy to assess (e.g. number of children under 12 years old, occupation of adult members, construction material of house and ownership of assets such as a radio). Use of the tool by other organisations in Mali has shown that it provides very similar estimates for the percentages of households that are poor to those produced by much more detailed and resource-intensive surveys (BARA and IPA 2010). The tool is primarily designed to allow organisations who serve large numbers of poor people (such as microfinance organisations) to monitor the poverty rates of groups of their clients over time and to target services to particular groups if desired.

## **Case study selection and sampling**

In this section I explain how the key case study municipalities and villages were chosen for this research, as well as the households surveyed and key informants interviewed.

### *Key informants at national level*

A combination of purposive sampling (seeking representatives of different actors in the water sector such as local NGOs, international NGOs, civil society coalitions, government and donors) and snowball sampling was used to find key informants. As I explain in Section 4.4, fewer interviews were carried out at national level than originally intended because of the cancellation of the planned fieldwork in Mali in 2012 due to the coup d'état.

### *Municipalities for analysis of cost-sharing arrangements and service delivery*

The municipalities selected for detailed studies of cost-sharing arrangements, service delivery approaches and direct support were chosen because each represented one or both of two particular characteristics. Firstly, three of the municipalities are the first three examples of WaterAid's direct partnership approach to working with local government, as introduced in Chapter One. Adopted in 2008, this is the model of capacity support to local government and direct support to community management which WaterAid intends to expand to its other areas of intervention and promotes to other actors in the sector. In the two other rural municipalities chosen, WaterAid works with local NGOs and municipalities through a 'tripartite' arrangement, where funding goes to the local NGO rather than directly to the municipality. Secondly, four of the municipalities are examples of areas where the fundraising process that WaterAid refers to as 'marketing' Sector Development Plans has been used to seek further municipal funding, discussed in Chapter Six.

These municipalities were also selected because they have relatively high levels of coverage compared to the Mali rural average, so they may have been at the stage where more attention might turn to sustainability as well as the issue of expanding coverage to new users. The municipalities are also in areas of Mali where it is common for people to have access to shallow hand-dug wells as alternative (unimproved) sources of water, which can reduce demand for water from improved sources and therefore create further challenges to

sustaining safe drinking water services. Table 4.3 below summarises the municipalities and their relevant characteristics. I was not able to undertake interviews with staff in Dandougou Fakala because security reasons meant I could not travel there personally. In the municipality of Yelekebougou, local government staff were unable to produce the relevant costs data in time. Therefore qualitative data from interviews in this municipality is used in relation to the process of fundraising through ‘marketing’ Sector Development Plans, but not quantitative data on cost-sharing (analysed in Chapter Six).

*Table 4.3. Case study municipalities for detailed analysis of recurrent costs*

	<b>Municipality’s partnership arrangement with WaterAid</b>	<b>Municipality received support to ‘marketing’ its Sector Development Plan</b>	<b>Quantitative data used for detailed recurrent costs analysis</b>	<b>Qualitative data used from interviews with municipality staff</b>
<b>Dandougou Fakala</b>	Direct partnership	No	Yes	No – not able to travel to region because of security restrictions
<b>Dialakoroba</b>	‘Tripartite’ arrangement through partner NGO	Yes	Yes	Yes
<b>Kolokani</b>	Direct partnership	Yes	Yes	Yes
<b>Tioribougou</b>	Direct partnership	Yes	Yes	Yes
<b>Yelekebougou</b>	‘Tripartite’ arrangement through partner NGO	Yes	No – staff were unable to produce the information	Yes

In each municipality, I interviewed as many as possible of the key informants concerned

with financing arrangements for the recurrent costs of rural water services. This included the staff of the water and sanitation Technical Unit (or WaterAid's local partner NGO which performed the equivalent role in two municipalities); elected officials (usually the mayor and the deputy mayor with designated responsibility for water and sanitation); civil servants (responsible for the administration of municipal expenditure); and handpump mechanics.

*Communities and households for analysis of collective fundraising, household finances and water point usage*

Two villages in the municipality of Dialakoroba (Bogola and Kola) were initially selected for examining collective fundraising and household-level financial issues because WaterAid's partner NGO suggested that these communities were relatively dynamic in terms of collective action and could therefore represent useful case studies of village fundraising. Owing to this perceived dynamism, these communities had also previously been selected for the piloting of self-supply promotion (through demonstrations of improved traditional wells) and Community-Led Total Sanitation (a similar idea to self-supply for sanitation). Therefore the two communities could also be used as case studies of the self-supply approach as implemented by WaterAid's partners, and the insights I gained into community fundraising in these villages helped feed into the development of the research in eight further villages. I discuss both these below.

As set out in Table 4.2, key informant interviews, focus group discussions and participatory exercises on topics such as financing water supply and household expenditure were undertaken in these two villages (a full list is included in Appendix 1). Selection of key informants was by snowball sampling, starting with members of the water management committees. Key representatives from the water management committees also acted as 'gatekeepers' to help arrange the other research activities in the villages. With their assistance, all of the group exercises were arranged to ensure as far as possible that there was a mix of male and female participants (unless it was a specific discussion about women's associations, for example), from different parts of the village (to avoid members of one particular extended family dominating the exercise), and of different ages.

Six households in each of the two communities were also chosen for detailed structured interviews and a financial questionnaire. A rapid survey of all households in the two villages

was undertaken beforehand using the poverty scorecard. This allowed the three households at either end of the poverty ranking to be selected, ensuring that a range of levels of wealth were included. The survey could not be completed with one household due to the absence of key household members on repeat visits, so 11 households remained in the sample across the two villages. As explained when discussing the results from these exercises and interviews in Bogola and Kola in Chapter Seven, these methods were not designed to be statistically significant but were intended to generate qualitative data on how people managed money and examples of typical expenses.

The eight further communities where focus groups and interviews with water management committees and women's groups were undertaken were selected by WaterAid's partners as case studies that they thought represented examples of successful community fundraising for the costs of water services. Two villages were selected in each of the key municipalities discussed above. The data collected by WaterAid's partner in the municipality of Yelekebougou was insufficiently detailed, so data is used from eight communities across four municipalities rather than ten communities across all five municipalities. I discuss further the challenge of developing in-depth qualitative research with WaterAid's partners, given the limited time they had available to dedicate to this work, in Section 4.5.

WaterAid's partners also selected two communities in each municipality which they considered particularly problematic in terms of encouraging community fundraising. Data from these communities is not used in relation to financing issues (because there was little evidence of collective fundraising in these villages), but is used from the focus group discussions and rapid household surveys on water point usage. The selection of these communities aimed to ensure that evidence on the usage of improved and unimproved water sources was drawn from villages which are more likely to represent the range of levels of success of managing community water supplies across a wider area.

#### *Municipalities and communities for self-supply approaches*

The selection of case study locations for examining two approaches to the promotion of self-supply (by UNICEF and WaterAid) was based on suggestions by key informants involved in the two pilot projects. The areas were recommended as good examples of the potential for such approaches where the implementers were thought to be committed and the target

populations receptive. For the UNICEF project, the location chosen for case study research was the health district of Dioila, where three municipalities piloted self-supply (Banco, Massigui, Ngolobougou), because the health services at district and municipality levels in Dioila were considered proactive and a good example by a previous study soon after the initial piloting (Sutton 2009b; 2010). For analysing WaterAid's approach, the villages of Bogola and Kola in the municipality of Dialakoroba were selected, as explained above, because these villages were considered dynamic and had been chosen for piloting the promotion of self-supply. The interviewees in Dioila (key representatives of health services and other key informants such as masons trained during the project in each of the three municipalities) were chosen through snowball sampling. Key informant interviews and focus groups were also held in the two villages in the municipality of Dialakoroba in relation to the WaterAid work.

### **4.3. Research for knowledge, policy and practice**

Here I discuss in more detail the process of balancing the aims of “generating knowledge, informing policy or guiding practice” (Clever and Franks 2008: 165) throughout the partnership with WaterAid.<sup>26</sup> I focus in particular on how my relationship with WaterAid changed with the introduction of the organisation’s new *Sustainability Framework* (WaterAid 2011b) and relate this to both my own previous background as a practitioner and the academic literature on researchers engaging with development workers.

#### **Planning research to meet three demands**

The three categories of research for knowledge, policy and practice are proposed by Cleaver and Franks (2008) based on their own experiences in the water sector. They aim to help explore the possible tensions within the range of academic activities which are termed ‘research’, and to suggest how these might differ in terms of scope, focus, timescale, type of data and presentation of results, and audience. Although acknowledging that the boundaries between research for knowledge, research for policy, and research for practice can sometimes be unclear, I still think it is useful to consider which parts of a doctoral research project might respond to each objective. Therefore by adapting the work of Cleaver and Franks, I set out these different demands in the context of my research in terms of scope, focus, and the type of data and results, as shown in Table 4.4.

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<sup>26</sup> A version of this section appears as a chapter (Jones 2013b, forthcoming) in an edited book addressing the ethical challenges that research students typically face when conducting fieldwork in developing countries. The book emerged from discussions at workshops and conference sessions in 2010 that I was involved in organising in my role as a postgraduate representative of the Developing Areas Research Group of the Royal Geographic Society – Institute of British Geographers. I am grateful to Jenny Lunn, the book’s editor, for comments on a previous draft.

Table 4.4. Research for knowledge, policy and practice (adapted from Cleaver and Franks 2008: 165)

<b>Research for:</b>	<b>Knowledge</b>	<b>Policy</b>	<b>Practice</b>
<b>Definition of scope:</b>			
<i>Cleaver &amp; Franks:</i>	By researchers	By policy makers	By users
<i>In this research:</i>	Broadly defined by the supervisory team, and later refined by me as the researcher.	By me, WaterAid's policy and advocacy team (trying to influence policy makers) and programmes team (trying to improve interventions).	
<b>Focus:</b>			
<i>Cleaver &amp; Franks:</i>	Improved understanding of the world around us	Evidence of outcomes	Guidance for interventions
<i>In this research:</i>	Improved understanding of how and why the costs of water provision are shared between different actors.	Evidence of the costs (inputs) and effectiveness (outputs) of WaterAid's approach to working with local governments.	Guidance to improve the effectiveness of the work of WaterAid's partners with communities and local governments.
<b>Type of data and presentation of results:</b>			
<i>Cleaver &amp; Franks:</i>	Intensive or extensive empirical research with findings generalised to theoretical propositions and to raising further questions. Uncertainty accommodated.	Generalised, focus on 'success stories', 'best practices' with lessons for 'scaling up' and 'scaling out'. Certainty of linkages (inputs and outputs) required.	Specific and localised, often presented as tools or checklists.
<i>In this research:</i>	Extensive qualitative and quantitative research, relating the findings to academic theory on the delivery of public services, institutional change and the role of NGOs.	Lessons which could promote the adoption of WaterAid's approach ('scaling up') by other actors. Some demand for 'success stories' of 'best practice' for WaterAid's partners.	Tools for monitoring the costs of water provision and analysing users' willingness and ability to pay which could be used by WaterAid's partners.



Before beginning my fieldwork, I had recognised the need to consider how my research could respond to these three areas, but had agreed with WaterAid that the forms of the contributions to policy and practice could be discussed and clarified as the fieldwork progressed. In fact, I had already undertaken fieldwork on a related topic with WaterAid for my Masters dissertation, and I was able to use time at the start of the doctoral research fieldwork to finalise two case study reports based on this previous research. This acted as a way of presenting some research for policy purposes, as additional evidence for staff of WaterAid in the UK (as part of moves in the organisation overall to focus more on the sustainability of its interventions) and Mali (to help demonstrate the work of WaterAid's Regional Learning Centre in promoting research and learning for decentralised water and sanitation services in West Africa). This work also helped me demonstrate to WaterAid staff in Mali my commitment to the policy relevance of the ongoing doctoral research. These reports served as examples of the types of outputs that could be produced, even if I later felt that the collaborative process itself was as important as the tangible 'products' that emerged.

The start of the actual fieldwork in Mali was then perhaps a fairly typical experience of a geography student doing doctoral research in the Global South. As I explained in Section 4.1, I engaged my own translator and travelled with him to different villages where I began qualitative research on how payments for access to drinking water were organised in different communities. This was a little removed from the day-to-day practical activities and immediate policy requirements of WaterAid and its partners as at this stage I was looking for examples of what might be thought of as 'interesting practice' at community levels rather than 'best practices' to be replicated.

During this stage of the fieldwork, I tried to follow the advice of Mercer (2006) on working with NGOs by attempting to establish and maintain an independent identity for myself so that I was not seen by research participants (water users and other stakeholders such as local government staff) as a representative of WaterAid or its partners. I had a related concern of avoiding raising the expectations of research participants that direct action might be taken as a result of the research outcomes. On reflection, these two challenges were difficult to address; despite trying to explain my position as a researcher, I think there were some research participants (especially community members, as opposed to local government staff) who did not make the distinction between this role and that of others

who actually work for WaterAid.

This is perhaps unsurprising when even community members who were very active in their village water committees were at times unsure about which of the different NGO representatives who came to their village worked for which organisation, on occasion confusing staff from another organisation with those who worked for WaterAid's partners. Therefore it is possible that some research participants might have thought I was acting on behalf of WaterAid or had more influence than I did, and therefore said what they thought I wanted to hear. However, I tried to minimise this influence by probing and checking within interviews and focus groups, and further triangulation of sources of data where possible. For example, when investigating how different villages undertake collective fundraising, I drew on focus groups undertaken by WaterAid's partners as well as follow-up group interviews with water committees and women's groups that I conducted myself.

### **Supporting research for policy and practice**

Having spent the early period attempting to establish my position as an independent researcher, my relationship with WaterAid changed just over halfway through the fieldwork. As part of broader moves in WaterAid internationally to address the challenge of the sustainability of water and sanitation interventions, WaterAid organised a regional workshop in Liberia for representatives of its different country programmes in West Africa to discuss the implementation of its new *Sustainability Framework* (WaterAid 2011b) in relation to rural water services. I was invited to attend since my research was addressing a key aspect of sustainability. Because of this, I became - as one of the organisers put it - a "*de facto* member of the WaterAid Mali team" for the discussions about how to use the framework to address the challenge of sustainability in Mali. The results of the workshop included each country programme drafting an action plan for the research required to guide WaterAid's practice and inform national policy regarding sustainability in their country of work.

In hindsight, I realise that I had been practising what Eyben (2010) calls "planned opportunism"; I had known that there was a growing movement within WaterAid internationally to more explicitly address the problem of sustainability in the sector, and the

launch of the *Sustainability Framework* in the West Africa region was a moment when I saw that my support could potentially contribute to some of these changes in the context of WaterAid's work in Mali. Owing to my presence at the workshop, the relevance and flexibility of my ongoing fieldwork, and the temporarily reduced capacity of WaterAid's programmes and policy teams in Mali at the time<sup>27</sup> (due to changes in staffing structure including secondments and ongoing recruitment), I became the joint lead for the proposed research on sustainability in Mali. My role was therefore somewhere between technical consultant and research manager. At the same time, I was still hoping from my perspective as a doctoral student that this research could contribute data which I would use for the academic knowledge required by my thesis as well.

Although I thought that this role could help fulfil part of how I saw my commitment to WaterAid, I was wary at the time that there were potential challenges involved as well. I certainly wanted to avoid influencing the research direction too much so that it became a vehicle for gathering additional data which would serve only my academic work and not the requirements of WaterAid. Related to this concern was the possibility that my involvement would reduce ownership of the process by WaterAid and its partners so that any potential changes to policy or practice suggested by the research would be less likely to be adopted. A final possibility was that the research went too far in the other direction to become a practice-oriented project with insufficient methodological rigour to be used as part of my doctorate. Bell and Read (1998) specifically caution against falling into this trap as part of their advice to students working on collaborative projects.

I tried to mitigate these risks by working with WaterAid staff to develop an iterative process for the research on sustainability, where the exact themes, questions and approaches were developed through a series of workshops with representatives of WaterAid's partner organisations. The fieldwork was carried out between the workshops by WaterAid's partners using tools that I had drafted but which had been discussed and validated in the workshops. I also took the lead on the initial data analysis, but these results were discussed together as much as possible so that the partners could draw out the implications for their own activities. I conducted short follow-up visits to some areas where the teams had identified potentially interesting findings in order to do further qualitative research which

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<sup>27</sup> As Carr writes in his contribution to Simon et al. (2011), "in understaffed agencies, as most are, it is startling the number of events and outcomes that are influenced by the simple issue of who has time to look over the documents or attend the meeting in question" (Simon et al. 2011: 2797).

could contribute to my thesis. In this way the research that was done primarily for policy and practice could be extended into research for academic knowledge as well.

Although at some points during the research activities I felt over-involved in the details of the process (rather than simply being an adviser on research methods), I agree with Edward Carr (writing in Simon et al. 2011) that there are wider benefits to academic development geographers (and others doing research on international development) of working *in* a development organisation. Carr argues that:

... without an understanding of mundane bureaucratic moments such as budgeting, contracting, and monitoring and evaluation it is simply impossible to understand why agencies do what they do, or reliably to identify points of intervention that might change practice in the world. (Carr, in Simon et al. 2011: 2797)

In my case, the benefits came from working closely enough with WaterAid's partners to understand how the possible practical lessons for WaterAid emerging from the research might be enabled or constrained by the organisation's existing annual cycle of planning, budgeting, monitoring and reporting. For example, the partners agreed as part of the actions resulting from the analysis to develop approaches for more closely monitoring the functionality of all the water points in their areas of intervention. However, the figures they had to report to WaterAid were the numbers of new water points constructed (or old water points fully rehabilitated) in the relevant reporting period. Therefore given limited time and resources there was less incentive for them to undertake the more detailed monitoring of functionality. This reporting process started to change across all WaterAid's country programmes in 2012, to include consideration of the actual operation of water points up to 10 years after their installation, which will address this issue.

From the partners' perspective, they saw two ways in which contributions from an academic perspective could benefit their own work. The first of these was in relating their practice to wider academic and sector debates, through raising questions and suggesting ideas. The second was in the support to developing data collection and analysis tools. Both of these possibilities had been identified as potential benefits at the start of the collaboration, but thinking more in terms of the outputs or products (such as policy reports and tools) rather than the actual process involved. On reflection, I argue that the process was just as

important as a means for everyone involved to learn from each other in ways that might provoke further critical reflection about these ideas in future work.

### **Acknowledging personal and professional motivations**

As well as the benefits that I have argued for so far, I also have to acknowledge that my willingness to work with WaterAid in this more direct research management role was related to my own background as more of a practitioner than researcher. Before starting my postgraduate studies, I had been working as a water and sanitation engineer in the implementation of infrastructure projects for an NGO in Kyrgyzstan, and had previously managed a small NGO in the UK. I enjoyed the hands-on management aspects of these roles, and was eager to take the opportunity to include more of this type of role within the PhD when the chance arose, for both my own personal satisfaction and professional development.

However, I was also conscious of the need to remain reflective in this “development manager” part of my overall role. As Abbott et al. (2007) and Wilson (2006) argue, development practitioners should be aware of the criticism of them as ‘technocrats’ legitimising a particular form of Western development (see Kothari (2005) for an example of this critique), and should seek ways of promoting learning together with those they are hoping to benefit. This was what I tried to support in the research process with WaterAid and those working for its partner organisations (although our focus was on learning within this group of NGO and local government staff, with less involvement of the actual water users themselves).

The period immediately after returning from fieldwork in early 2012 was important to me for further reflection and additional feedback on how I had tried to balance these issues. I gave a presentation at WaterAid’s London office on how my academic fieldwork and the other research activities had developed in Mali, which allowed me to discuss these issues of balancing objectives and ownership with others who were experienced in research with both academia and NGOs. Following this, I was also invited to present at a larger learning event for organisations working in the rural water sector, which fed in to a wider debate about how different groups (academics, practitioners and donors) can contribute to learning

in the sector. Both these occasions were useful opportunities to reflect on my engagement with WaterAid during fieldwork, and highlighted the importance of discussing these sorts of issues with others.

Later in 2012 and in early 2013, when my continued engagement with WaterAid in Mali on the issues of sustainability and financing was limited (as I explain when I discuss the implications of the coup d'état in Section 4.4), I still tried to support WaterAid in other ways. In the second half of 2012, six other WaterAid country programmes undertook research on the financial sustainability of WASH services. I was able to help this process by providing an example of how the WASHCost life-cycle costs approach had been adapted into the context of one WaterAid country programme's work, advising on proposed research methodologies and plans, reviewing draft reports and supporting the facilitation of the final workshop. This benefited both WaterAid and me: the other country programmes were able to draw on my experiences in Mali, and I learnt more about similar methods and issues in other contexts.

*Figure 4.1. With members of the WaterAid team at my leaving presentation*



#### 4.4. Implications of the military coup

After leaving Mali in December 2011 after the main period of fieldwork, I planned to return in May and June 2012 for follow-up work. This would allow me a few months at the start of 2012 to undertake further analysis of the data gathered (beyond the initial steps taken while still in Mali), including on the key themes which also formed part of WaterAid's research using its *Sustainability Framework*. I hoped to return to Mali to discuss the results with WaterAid and its partners, and to undertake further research in the sector to understand the views of other organisations on the issue of sharing recurrent costs. Although I had carried out some interviews with other sector actors while in Mali in 2012, I had decided that it would be most productive if I did most interviews at a point where I had some results to share with them, rather than being solely extractive. This seemed particularly relevant for a potentially sensitive issue such as costs and financing; if I was asking for details of other organisations' budgets and approaches, it seemed appropriate if WaterAid and I could share our own findings to demonstrate our willingness to help open up this debate in the sector. In principle, this would also be a suitable time for me to offer some brief follow-up support to WaterAid's partners if they were beginning to implement new approaches to monitoring costs from the start of their new financial year in April 2012.

However, in March 2012 Mali suffered a coup d'état, leading to a political and humanitarian crisis as different parts of the army and political class struggled for power in Bamako, while a combination of rebel groups seized major towns and took control of the northern half of the country. Official warnings from Western embassies, including the UK, USA and France, advised their citizens to leave and most expatriates evacuated. Understandably, priorities for the water sector shifted towards immediate humanitarian action for displaced populations, rather than questions of longer-term sustainability. Most donors halted their aid to the sector: the national water directorate lost 90% of its funding (WaterAid 2012). Based on UK government advice (concerning the uncertain security situation) and discussions with WaterAid (about the appropriate time to continue research activities given the changed context), I postponed the planned visit, agreeing to wait until later in 2012 to see if the situation stabilised.

In the meantime, I drafted short papers on the results of the costs analysis at local government levels (presented here in Chapter Six) for discussion and validation remotely

with WaterAid staff, even if the situation was not conducive to using these for wider dissemination and debate in the sector. This work was also shared as an example for the other WaterAid country programmes that were beginning research on the costs and sustainability of WASH services. Back in Mali, the two key members of WaterAid staff who had been leading the work on the *Sustainability Framework*, including my WaterAid supervisor, left the team to take up posts in other organisations. This posed an additional challenge to the organisation's progress in using the *Sustainability Framework*, and to the depth of my ongoing engagement with WaterAid in Mali.

By September 2012, Mali's political situation was still uncertain and it looked unlikely that I would be able to gain permission from the university to return given that the official advice from the UK Foreign and Commonwealth Office was not to travel to the country. However, as an alternative measure I had developed with WaterAid a list of other contacts in the sector who might be willing to take part in phone interviews. I was able to do this with key representatives in other organisations who I had met already at events or meetings while I was in Mali in 2011, who remembered me and were happy to help the research. However it proved much harder to establish and engage with new contacts remotely, so the resulting data from these interviews was less extensive and in-depth than I had hoped for if I had been able to conduct them in person. Therefore the analysis of the national context and sector policy presented in Chapter Five relies more heavily on secondary data. In early 2013, as the French military intervention to combat the rebel advance further south began, I agreed with WaterAid and the university that a return to Mali within the scope of the PhD would no longer be possible and I should concentrate on finishing the thesis with the data I did have, even if this was less than I had originally planned.

#### **4.5. 'Honesty box': limitations and trade-offs**

This section represents the 'honesty box' for the methodology: a place to record the 'warts' in the data and the things that did not quite go as hoped or planned during fieldwork (Hamilton and Kessler 2004; Pisani 2009). What is important, however, is to honestly assess the effect of such challenges on the results obtained, and to suggest lessons which might help future researchers. I have already discussed the effect of the coup d'état. In this section I describe two further challenges, discuss the trade-offs involved in attempting to overcome



them, and identify the limitations which remained. The first key challenge was in undertaking research involving two different languages, French and Bambara. The second concerns working with assistants to undertake qualitative research.

### **Languages: French and Bambara**

The original proposal for this PhD studentship stated that candidates required at least intermediate-level French skills (the official language in Mali) and should be willing to develop some skills in Bambara (the country's main indigenous language). In reality, even organising the basic logistics of my fieldwork would have been extremely difficult without a high level of French. I also appreciated early on that learning some Bambara was likely to be important for day-to-day relations with colleagues and research participants. Therefore in this section I describe my efforts to improve my abilities in the two languages to the appropriate levels and discuss the trade-offs involved in decisions about how and when to learn the languages. I was in the extremely fortunate position of having the option to extend my PhD length and funding to spend time dedicated to language study, thanks to my Economic and Social Research Council studentship. The potential benefits to my research, personal life and professional development were clear, so I requested and received an extension of seven months, allowing language training of three months in French and four months in Bambara.<sup>28</sup> I undertook the language training just before and during the period of PhD fieldwork, between July 2010 and December 2011.

Although I never became completely fluent in French, I was able to work confidently with WaterAid, conduct all interviews,<sup>29</sup> and write research tools and reports in French.<sup>30</sup> I did encounter some challenges in asking or writing precise questions on topics that were

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<sup>28</sup> These periods corresponded to the ESRC guidelines (ESRC 2011) which allocate different lengths of extension depending on the difficulty of the relevant language. All European languages qualify for three months' study. Bambara is tonal and is therefore classed as a language which "presents intrinsic difficulties for speakers of English" (ESRC 2011: 53). However the guidelines also consider the availability of learning resources for each language. Study materials do exist for Bambara (developed for Peace Corps volunteers in Mali) so it does not qualify for the maximum six months possible for this category. Instead I requested and was awarded four months.

<sup>29</sup> The only exceptions were two key informant interviews with expatriate technical advisors in donor organisations which were held in English.

<sup>30</sup> However, I would describe my oral French as near-fluent: while in Mali I passed Level C1 of the DALF exam (Advanced Diploma in the French Language) organised by the French Ministry of Education, certifying a level of fluency sufficient to undertake a Masters-level course in a French university. After some persuasion from friends, I also took part in an improv theatre group in French.

already somewhat ambiguous amongst participants, for example in relation to the definitions of different types of maintenance of water points (discussed in detail in Chapter Seven). This challenge of being precise in French slowed research progress slightly because of the additional time needed for discussion, clarification and validation of key terms and results. For example, when WaterAid's partners completed an initial survey I developed on local cost-sharing, it was clear that different respondents had interpreted certain terms in different ways, even though I had checked the French terms in advance with WaterAid staff. Therefore we spent time on more detailed discussions and clarification in subsequent workshops.

For Bambara, I combined a homestay, private tuition, self-study and immersion in addition to my fieldwork. My homestay was for one month in Bamako before beginning fieldwork. Throughout the remainder of the fieldwork period I took private lessons and dedicated time during field visits to further learning and practice with research participants and others, which took up the additional three months allowed. In hindsight, it might have been helpful to organise an additional immersive homestay outside Bamako for a few weeks at the start of the fieldwork. This would have enabled me to solely focus on learning Bambara, whereas in Bamako I was also trying to attend WaterAid events and begin planning fieldwork activities. This illustrates the trade-off I had to address between dedicating time to language learning and spending time to better understand WaterAid's activities and to develop relationships with staff and partners. As previously discussed, I think this time building relationships was hugely beneficial in terms of how the research partnership with WaterAid developed, but it slowed my attempts to make progress in Bambara.

Despite these limitations, I did develop sufficient Bambara skills to understand responses to simple survey questions. As expected, however, I still required a translator (between Bambara and French) for more detailed interviews. My knowledge of Bambara was also useful in checking that my translator had covered all elements of a participant's response, especially in group interviews and focus groups. Perhaps more importantly, my Bambara was very helpful for chatting informally with participants outside formal interviews, particularly regarding Mali's system of kinship joking (exchanging jokes with others according to the relation between your family names). I was given the Malian name "Chaka Diallo" by WaterAid colleagues, on the basis that it was the closest-sounding to my English name. The Diallos are traditionally herders in Mali, so jokes regarding my name tended to

revolve around “my cows” (that all Diallos would have). I became very used to responding to the teasing exclamation “Ah, Diallo! Where are your cows?” with a joking reply such as “My cows are in England, they wouldn’t go in the aeroplane!” This demonstrated to research participants - and others I met in daily life - my willingness to learn about and engage with their culture, at least to the limited extent which I could. WaterAid staff and partners also appreciated my attempts, and I was often introduced to visitors to the office with “... and he speaks Bambara too!”

### **Working with assistants for qualitative research**

Even given my progress in French and Bambara, I found attempting to undertake in-depth qualitative research through the medium of two different languages very challenging. This issue relates to my own ability as a qualitative researcher and my use of research assistants. I had an extremely good working relationship and personal friendship with my main research assistant (whose other strengths included his calm in the face of logistical challenges, such as those posed by the rainy season shown in Figure 4.2). However, he was not trained as a social scientist or in qualitative research methods, and at one point during the fieldwork I considered the possibility of engaging a wider team, ideally of Malian students or researchers with more experience in field research such as conducting interviews and facilitating focus group discussions. I felt that this would help the depth and quality of the community-level research, especially on topics such as village fundraising.

However I eventually decided against this approach for two reasons. Firstly, feedback from my academic supervisors was that such people were hard to find and additional formal training was not a guarantee of ability. Secondly, as the research progressed and I worked more closely with WaterAid and its partners, I agreed in discussions with my WaterAid Mali supervisor that it was preferable that the field agents of the partners undertook these roles where possible, for the dual reason that they would have important insights to contribute and would be more invested in the results. However, since they were already busy with their usual activities, it was hard for them to dedicate time for the preparatory workshops where we discussed the research methods and approaches, or to allow time for testing the tools in the field. It was also difficult for us all to reach the same levels of understanding of concepts such as the life-cycle costs approach in the time available.

The result was that some of the initial community-level data from research activities undertaken by WaterAid's partners was less detailed than originally planned. This was part of the reason why I undertook follow-up visits to some areas where possible, as explained in Section 4.3. This process of follow-up helped validate and deepen the qualitative data obtained, but demonstrates the challenges in achieving breadth, depth and relevance in qualitative research. In hindsight, I think I could have discussed with WaterAid and its partners how the research activities could be split between their own staff and additional teams engaged specifically for that purpose who had more time available for training, piloting and the fieldwork itself. Seeking a compromise of this form would be my recommendation to other researchers facing similar challenges.

*Figure 4.2. The challenges of travel in the wet season*



#### 4.6. Conclusions

I draw out key lessons from this chapter reflecting on the research methodology and partnership with WaterAid which are important both for this research project and others. Firstly, my experience shows that collaborative studentships such as this can be an effective way for doctoral researchers to help bridge the demands of research for knowledge, policy and practice. However, meeting these three objectives may require closer engagement with the partner organisation than simply adopting the basic “characteristics of a good employee” (such as meeting deadlines and respecting the partner organisation’s interests) proposed in guidelines for students undertaking collaborative research projects (Bell and Read 1998: 27). I argue that it was important for me to go further than this and at times act more like an actual employee of WaterAid - albeit temporarily - for the benefit of both parties.

This conclusion is linked to my view that thinking about *process* is as important as the eventual *products* of collaborative doctoral research, especially for the parts of the research seeking to improve practice. This observation was reflected in my own learning about the approaches and internal workings of WaterAid and its partners, which was crucial in understanding their decision-making processes and feeds into the analysis presented in Chapters Six and Seven concerning how WaterAid’s partners work with local governments and communities. I also hope that the experience for WaterAid’s partners of developing a collaborative investigation with a research student was a process which could help inform analysis that they undertake in their future work.

However, I also acknowledge key limitations in the research process. Two of these were related to my own abilities: my command of the two languages used for the research and my ability to undertake qualitative research with assistants. A third factor, outside my control, was the military coup in Mali in 2012. I have explained that I made deliberate trade-offs regarding the first two issues. I prioritised building up relationships and working closely with the staff of WaterAid and its partners in undertaking the field research, in preference to spending additional time dedicated to learning Bambara, and working more with other researchers trained in qualitative methods. Therefore the limitations concerning the depth of some of the research at community and household levels are countered by advantages in how I was able to engage closely with WaterAid’s partners in their work

across community and municipal levels, discussed in Chapters Six and Seven.

Finally, although the coup d'état meant that I was not able to complete all the research I had planned with other actors in the wider water sector, I am still able to draw on some primary research, as well as secondary evidence, concerning key national-level factors affecting the sustainability and financing of rural water services. I turn to this issue next, in Chapter Five, before focusing the analysis on the work of WaterAid and its partners at municipal and community levels in Chapters Six and Seven. In Chapter Eight I then draw the different strands of analysis together in relation to the research themes, and propose directions for future work that could build on this research.

## Chapter Five - National context and the enabling environment in Mali

### 5.1. Introduction

In this chapter I use the extended political economy approach developed in Chapter Three to guide an analysis of key issues at a national level that affect the sustainability and financing of services in the Mali rural water sector.<sup>31</sup> To do this involves firstly looking beyond the water sector in order to understand these issues within broader structural factors: Mali's historical context, especially in regard to aid dependency and the influence of international donors on policymaking; ongoing processes of decentralisation; and the state of civil society. Given these structural factors, the analytical framework then poses the question of to what extent policies and frameworks for rural water services delivery and financing represent "reforms as signals" (Andrews 2013), where reforms are externally-driven and adopted on paper, but lack the intended functionality in practice. Is there evidence of processes of "bricolage" (Cleaver 2012; Andrews 2013) in sector reform at national levels towards arrangements which are more likely to deliver sustainable services? This also involves examining "policy space" (Hickey 2009b) and "room for manoeuvre" (Grindle 2007) in what reforms are actually up for discussion, and the ability and approaches of different actors to influence these, especially WaterAid and its civil society partners.

As explained in the last chapter, the coup d'état in Mali reduced the amount of research possible at national levels from what was originally planned. Therefore this chapter draws on secondary data in addition to the primary research carried out. I use predominantly secondary data in the first part of the chapter to explain the context of government-donor relations and decentralisation in Mali, and their overall relevance to the water sector. As the analysis focuses in more detail on the water sector itself later in the chapter, I continue to use secondary data but also draw on observations from attendance at meetings and workshops in the sector, and interviews with representatives of different organisations working on rural water supply.

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<sup>31</sup> Parts of this chapter, especially Section 5.3, draw on a forthcoming peer-reviewed journal article (Jones 2013d, forthcoming [accepted pending revisions]). I thank three anonymous reviewers for their comments.

## **5.2. Historical context: donors, decentralisation and civil society**

In this section I focus on key structural and contextual issues at the national level in Mali which influence the ability of the rural water sector to develop sustainable financing mechanisms. Firstly, I discuss Mali's dependence on aid and the historically important role of international donors in influencing national policymaking. Secondly, I explain the history and national-level drivers behind the country's decentralisation reforms since the early 1990s. Thirdly, I assess the state of civil society, especially in relation to the ability of civil society organisations to influence policymaking and act as a 'watchdog' on government.

### **Aid dependency and the influence of donors**

Since the early 2000s, aid received by Mali has consistently represented 10-15% of GNI (OECD-DAC 2012; van de Walle 2012) and up to 50% of the government budget, passing US\$1 billion for the first time in 2007 and remaining about US\$ 900 million per year since 2008. From 2006-2009, average annual aid represented US\$ 75 per Malian (van de Walle 2012). Interviews undertaken with both donor and government representatives by van de Walle (2012) in 2011 suggested a common belief in Mali having received a 'democracy dividend' in terms of increased aid in the early 1990s after democratisation. However van de Walle argues that this view is not supported by the available figures, which show aid varying between about US\$ 400 and US\$ 600 million per year during the 1990s, until a sharp increase after 2000 which was likely driven more by international trends than particular government-donor relations in Mali.

A series of analysts argue that this aid dependency has resulted in policymaking processes dominated by donors, with little national ownership of plans for development and poverty reduction (Dante et al. 2003; Magassa and Meyer 2008; Bergamaschi 2009; van de Walle 2012). For example, before the elaboration of Mali's first Poverty Reduction Strategy Paper (PRSP) in 2002, the country already had a poverty reduction plan in the form of the *Stratégie Nationale de Lutte contre la Pauvreté* (SNLP), which had itself been created with the support of the UNDP. However, the World Bank and the IMF argued that this plan was insufficient as the core basis for the PRSP because of weaknesses in its macro-level analysis and overall coherence (Dante et al. 2003; Bergamaschi 2008). Although a compromise was eventually



reached between the government and the international institutions, allowing the SNLP to be one of the main sources used to develop the PRSP, this example demonstrates the difficulties faced when national planning capacities are weak in comparison to what is needed to satisfy donor demands - or when donors overlook this issue. Van de Walle (2012) notes that donor reports do often moderate their criticisms with comments that national capacities for policymaking and public administration are improving, but that this is not cause for optimism because similar observations have been made in reports going as far back as the 1960s. This suggests that Mali is a case - in the words of Andrews (2013) - where history repeats itself through a series of attempted reforms where donors blame contextual factors (such as lack of capacity) which they overlooked. Failing to properly consider the context for possible reforms is one element of what Andrews calls "reforms as signals".

Some observers extend the argument of compliance by suggesting that government agreement with most donor demands, especially under Amadou Toumani Touré (President from 2002 until the coup d'état in 2012) has been due to a deliberate strategy for ensuring the continuation of aid flows rather than solely a lack of administrative capacity (Bergamaschi 2008; Magassa and Meyer 2008; Whitehouse 2012). From this perspective, national leaders want "assistance, not ownership" (interviewee cited in Bergamaschi 2008: 6) because ownership implies responsibility and accountability. Magassa and Meyer (2008: 16) call this the "theatre" of presidential discourse; President Touré gave "performances" for both donors and the population in order to increase aid flows and his personal popularity. Whitehouse (2012) describes the ability of Touré and the political class to maintain a superficial appearance of progress in order to keep aid flows going. Therefore rather than demonstrating a lack of government leadership, this approach in fact serves a political function.

The second PRSP, adopted in December 2006, is given as an example of how President Touré's government tried to satisfy donors while pleasing the electorate. The elaboration of the second PRSP was undertaken in 2006, before the review and evaluation of the first PRSP was complete, and soon before the presidential elections of 2007. Magassa and Meyer (2008) argue that this meant the second PRSP was poorly sequenced both technically and politically; Bergamaschi (2008) suggests this was because it suited both the President and the donors to avoid a gap between the two PRSPs just before the elections. Furthermore, President Touré then created and promoted his own development plan for the 2007

election campaign, the *Programme pour le Développement Economique et Social 2007-2012* (PDES).

In effect, this plan competed with the more donor-driven PRSP, suggesting that the government was using the PRSP to ensure aid flows while simultaneously developing its own national programme which would be more appealing to the electorate (Bergamaschi 2008; Magassa and Meyer 2008). After Touré's election victory, the government tried to reassure donors that the PDES was still compatible with the PRSP and simply represented the need of African leaders to have a more nationally-owned programme than the PRSP for electoral purposes (Bergamaschi 2008). Van de Walle (2012) suggests that the process of designing the third PRSP, scheduled to be released before the planned elections in spring 2012 (which were subsequently cancelled following the coup d'état), was proceeding along similar lines: strong donor involvement with a small group of public officials, but little wider political and public interest.

This process seems to be an example of the emphasis on PRSPs as a condition for donor funding leading to "reforms as signals" (Andrews 2013). Andrews quotes Schick (1998: 128) in saying that in developing countries it is typical that "the government has two budgets: the public one that is presented to the parliament and the real one that determines which bills are paid and how much is actually spent." The process also reflects the way that "reforms as signals" result when there is reliance on narrow sets of high-level agents to implement over-specified reforms, rather than engagement with the wide set of actors which would actually be needed to implement institutional change in practice. Harvey (2008) argues that the way water policy is treated in Mali's PRSP is one example of this over-specification, where the insistence on community management constrains local experimentation. These observations raise the question of what actually occurs behind the visible reforms and if there is any evidence of local experimentation under the surface. I argue that a key issue for understanding this possibility is decentralisation, which I turn to in the next section.

### **Decentralisation reforms**

A key policy that observers suggest has been nationally-led rather than donor-driven is the process of decentralisation reforms since the 1990s (Ouedraogo 2003; Baudais and Chauzal

2006; Bergamaschi 2008). Decentralisation has even been described as Mali's "best example" of a public policy that was government-owned but donor-assisted (Magassa and Meyer 2008: 16). Decentralisation began after pro-democracy movements in 1991 culminated in the overthrow of Moussa Traoré's military government by a coup. The transitional government led by Amadou Toumani Touré (who later became the second President after democratisation, in 2002) prepared for democratic elections and made initial plans for the role of decentralisation in Mali's new democracy (Rawson 2000). The National Conference of 1991 argued that forms of decentralisation under the previous regime were only a form of neo-colonial administration, and that the intervention of central government in rural areas was reinforcing the power of the central state (ibid).

The process of decentralisation resulted in the creation of 703 *communes* (municipalities) in Mali, the lowest level of constitutional government (Doumbia 2009), each composed of villages or small urban neighbourhoods. Municipalities are led by democratically elected councils, who elect a mayor from among the councillors. Above the communes, there are 49 *cercles* and 8 *régions*, each headed by members elected from the councils in the level of government below (Le Bay and Loquai 2008). I set out the responsibilities of different levels in relation to water services delivery in Section 5.3.

Three key motivations for the newly-elected government of Alpha Oumar Konaré in 1992 to pursue decentralisation are identified in the literature. Firstly, to respond to the demands of the National Conference of 1991 that decentralisation was a necessary part of democratisation, fitting both traditional ideas of bringing power back to the people and more modern arguments for the economic and social benefits of local governance (Rawson 2000; Pringle 2006). The issue was not new in Mali: forms of decentralisation had been promoted in both the First Republic (with ideas of state-led 'rural socialism' under Modibo Keita) and the Second Republic (the creation of official village associations under the military regime of Moussa Traoré) (Bingen 2000; Rawson 2000; Pringle 2006). However these had ultimately failed to serve the interests of either the governments of the time or the citizens, leading to a genuine desire amongst the population for democratic decentralisation by the 1990s (Seely 2001; Ouedraogo 2003; Pringle 2006).

Secondly, the need for the central government to maintain its own political power and legitimacy was an important driver for decentralisation (Seely 2001; Smith 2001; Ouedraogo

2003). A related third reason was that decentralisation was also used as one way of responding to the Tuareg rebellion in northern Mali in the 1990s. However observers differ as to whether this approach of co-opting the Tuareg threat by extending autonomy to their region was one of the primary reasons for decentralisation (Seely 2001; OECD-DAC 2012) or a secondary benefit from a longer historical process of shifts towards democracy, as suggested above (Pringle 2006).

These reasons suggest an extension to Andrews' idea of governments undertaking "reforms as signals" to satisfy external donors. In the case of decentralisation, it appears that the 'signalling' by central government was at least as much towards the population as to donors. Yet the result is apparently similar: a process which privileges form over function, where municipalities exist but have little capacity to fulfil their roles, similar to Craig and Porter's (2006) idea of "quasi-territorialisation" introduced in Chapter Two. For example, one of the key challenges identified for decentralisation in Mali is the slow transfer of financial and technical resources from central to local government (Djiré 2004; DANIDA 2006; Le Bay and Loquai 2008; Doumbia 2009), highlighting the lack of financial authority that restricts decentralised governments (Johnson 2001; Smoke 2003; Conyers 2007). As Coulibaly et al. (2010) note, in addition to the political class there is also little incentive for civil servants within the state administration to devolve further powers and resources to local governments because this would reduce their own authority. I discuss in greater depth the limited funds available to municipalities and the possibilities for seeking further financing in Chapter Six, in direct reference to the rural water sector.

### **The state of civil society**

In this section I argue that the somewhat positive assessments of Mali's "quite vibrant" civil society (van de Walle 2012: 11) must be tempered by observations that much of civil society has been co-opted into the ruling class and is therefore weak in its ability to act as a 'watchdog' holding government to account (Roy 2005; Sears 2007; Magassa and Meyer 2008). This demonstrates the challenge of international donors assuming an 'associational' view of civil society, as described in Chapter Two, which relies on a separation of state and civil society and the ability of civil society organisations (including NGOs) to help represent public opinion in policymaking processes. Therefore I also consider the other roles that civil

society can play, the different types of civil society organisation that exist, and draw out issues relevant to a more detailed discussion of civil society and the water sector later in the chapter when I consider the role of WaterAid.

I first consider the four key roles of civil society in Mali identified by Togola and Gerber (2007), who base their observations predominantly on the 'associational' school of thought on civil society (Hyden 1997; Mohan 2002) introduced in Chapter Two. Firstly, civil society organisations can act as advocates for their constituencies, such as trade unions, student groups and women's associations, and making associated contributions to policy debates. Secondly, civil society organisations commonly play a significant role in delivering services, such as community-based organisations supported by NGOs (Magassa and Meyer 2008). (I consider community-based water management committees in-depth in Chapter Seven, and focus in this section on the role of civil society at national levels.) Thirdly, civil society can act as a government partner in development planning (predominantly in promoting decentralisation). Finally, civil society has a role as a 'watchdog' over government, from national to local levels.

These categories are not mutually exclusive. For example, health centre committees may have a role in both service delivery (such as helping to manage rural clinics) and advocacy (on behalf of patients, towards other local actors such as the municipal council). NGOs are considered here as one element of civil society, along with many other actors ("community-based organisations, traditional leaders, unions, business associations, religious organisations, independent media, student groups, cooperatives") within the 'associational' school of thought (Togola and Gerber 2007: 1). As I discussed in Chapter Two, it is important to distinguish between the roles of formal NGOs and more informal social movements or community-based organisations, so I examine this issue in more detail in relation to the water sector and the work of WaterAid in Section 5.4.

Roy (2005) argues that international donors see civil society's 'watchdog' role as its most important, in order to help combat clientelism, in line with the 'associational' school of thought on civil society (Hyden 1997; Mohan 2002). Yet most of the civil society organisations that were key in calling for democracy in the early 1990s then became political parties and were co-opted into the ruling class (Magassa and Meyer 2008; Roy 2005), highlighting the problem with assuming that a civil society distinctly separate from the state

could emerge. Analysts suggest that this challenge worsened under the regime of President Amadou Toumani Touré since 2002 (Sears 2007; Magassa and Meyer 2008; van de Walle 2012; Whitehouse 2012), as the 'rule by consensus' approach reduced opposition to the government. The "entire political class was in government" (van de Walle 2012: 11), and civil society was unable to provide an alternative due to a combination of co-optation and suffering the same urban elite bias as the political class. This reinforces the argument made relating to sub-Saharan Africa in general by authors such as Chabal and Daloz (1999) and regarding Mali in particular by Roy (2005) and Sears (2007) that it is not possible to conceptualise civil society as independent from the state.

Even observers such as Togola and Gerber (2007) agree that civil society is weakest in its 'watchdog' role of holding government accountable, although they do not extend the discussion to consider if this is due in part to the inherent blurring between state and civil society in Mali. They argue instead that civil society organisations acting as advocates for particular interest groups represent the strongest form of civil society in Mali. The definition of interest groups used by Togola and Gerber includes both those groups with primarily economic interests (such as producer groups and trade unions) and those considered part of broader associational life (such as women's associations or religious organisations), following the distinction made by Hyden (1997).

However, other observers argue that the proliferation of civil society groups in Mali - a "spectacular eruption" according to Magassa and Meyer (2008: 11) - has not made a significant contribution to policymaking. For example, although there was wide participation of civil society in the consultation processes for the second PRSP, this contributed to the development of a long 'shopping list' of desired policies with little coherence or prioritisation (Bergamaschi 2008), and a low chance of being implemented because of the lack of connection between the planning process and subsequent budgeting (Magassa and Meyer 2008). Furthermore, much of what is labelled Malian civil society is actually dependent on international NGOs and their donors. At a basic level, these are likely to suffer some bias due to their usually urban elite staff and possible donor influence (Roy 2005; van de Walle 2012). Stronger criticisms are of deeper co-optation of such organisations into the corrupt ruling class, as already suggested (Sears 2007).

Weak opposition to the political class has led to weak political participation by the majority

of the population (Roy 2005; Magassa and Meyer 2008); electoral turnout in the decade leading up to the coup in 2012 was the lowest in West Africa (Whitehouse 2012). Van de Walle (2012) suggests that international donors should bear some responsibility for focusing aid on direct budget support to the executive branch of government, without sufficiently considering the lack of a functioning opposition as a form of horizontal accountability, nor the limited ability of civil society to articulate the views of ordinary citizens instead of just urban elites. However, Whitehouse (2012: para. 17) returns to the question of the pervasiveness of clientelism: “[Maliens] condemn their *classe politique* [political class], but by explaining away corruption as a matter of individual greed, they obscure the social and structural factors that allow their leaders to abuse their authority and circumvent the law.” This is what Magassa and Meyer (2008) call the paradox of Mali’s citizens: permitting government by consensus and corruption, yet abstaining at the ballot box.

In Section 5.4, I return to these debates when I consider the role of civil society organisations and NGOs in the water sector, and their potential for influencing policy debates towards more sustainable financing mechanisms for rural water services.

### **5.3. The national water sector**

#### **The evolution of the sector**

In this section I examine more closely the history of the rural water sector itself, linking this to the structural context of government-donor relations and decentralisation reforms described so far in this chapter. I suggest that there are four key periods of interest in understanding the historical evolution and current state of the drinking water sector (including rural water supply) in Mali since initial moves towards decentralisation in the 1990s. The first of these was from the first democratic presidential elections in 1992 to the first local government elections in 1999. This was a key period in preparing the legal framework for decentralisation and identifying the relevant administrative areas which would later be passed responsibility for water supply within their boundaries (Lemelle 2008). (At the time of these first elections in 1999, the only powers transferred to local governments were those of general administration, such as registering births, marriages and deaths, rather than responsibility for any more extensive public services.) The national

water directorate (DNH) was also created in 1999.

The following phase of development, from about 2000 to 2004, was the period when the first key policies and laws bringing together decentralisation and water were introduced, through the adoption of the first National Drinking Water Strategy and the Water Code (law 02-006). This law defined the operational framework for drinking water supply and the accompanying financing policy. In rural areas, this gave local governments ultimate responsibility for ensuring drinking water services but required them to delegate actual day-to-day operation to private operators or users' associations. (The French term for this form of local government role is "*maître d'ouvrage*"). Likewise, municipalities became responsible for oversight and monitoring of the operators, although this could also be delegated to another private body (Diarra et al. 2004). A further decree was passed in 2002 to officially hand over these powers and responsibilities for drinking water (as well as health and education) to local governments.

The Water Code recognised the continued role of the state (through the national water directorate and its deconcentrated regional offices) in helping municipalities fulfil their own roles, and in providing some support to the management of rural water supplies. However, the details of this support were not specified. In regard to the responsibility for financing water services, the law specified that there should be full recovery of operating costs and partial recovery of investment costs from users in rural areas (République du Mali 2002). (The more detailed cost-sharing policies based on this law are elaborated in the 2007 National Drinking Water Strategy [DNH 2007]).

From 2004 to 2012, the focus for the water sector was then on trying to put these policies into practice, in particular through strengthening local governments and the water sector as a whole through gradual moves towards a sectoral approach of coordination between international donors (who provide about 80% of sector financing), the national water directorate and its regional bodies, and the newly decentralised levels of government. The 2004 National Plan for Access to Drinking Water (PNAEP) was adopted to identify the investment required to increase access to water from an overall national coverage level of 62% in 2004 to 82% in 2015, and in the same year a system of roundtable meetings of donors began in order to accompany this investment plan and improve coordination (AMCOW 2010). Yet despite this recognition of the need for increased financing, one of the



elements of water policy emphasised in Mali's 2nd generation PRSP, for 2007-2011, is to "reduce the burden of the water sector on public finance through sharing of expenses between government authorities, local authorities and users" (République du Mali 2006: 54).

Further moves towards a more coordinated approach were made in 2006 and 2007 through the creation of the Sectoral Programme for Water and Sanitation (PROSEA), a revision of the National Drinking Water Strategy (DNH 2007) to take into account the Water Code and decentralisation (World Bank 2008), and the first Joint Sector Review with the state and donors. PROSEA is an attempt - at least in theory - to link planning and budgeting at all levels into a national financing plan in the form of a Medium Term Expenditure Framework (DNH 2008b), even if the full implementation of the desired Sector-Wide Approach (SWAp) and direct budget support to the sector had not been achieved by 2011 (AMCOW 2010). PROSEA has also been criticised for insufficient connections to the local development plans elaborated by municipalities (CAEPHA 2009; DANIDA 2010). I discuss the difficulties in developing and using such plans in Chapter Six, which reflect the challenges of "reforms as signals" described by Andrews (2013) and colleagues.

The challenge to overall sector coordination is illustrated by the fact that in recent years levels of disbursement by the water directorate have been only about 60-70% of allocated budgets because of a lack of alignment between national and donor requirements for budget procedures (World Bank 2008; WaterAid Mali 2009). A programme of joint Danish-Swedish support planned for 2011-2014 was due to be the first funding fully in line with PROSEA and the Paris Declaration on aid effectiveness and was intended both to support the water directorate in preparing for future direct budget support and to act as an example to other donors of how to support a sectoral approach.

Unfortunately, the coup d'état and subsequent political crisis in Mali in 2012 stalled this progress. Priorities for the water sector changed towards humanitarian relief for those displaced by rebel conflict in the North, and supporting urban water services in Bamako which came under increased pressure due to the arrival in the capital of internally displaced people fleeing the fighting (WaterAid Mali 2012). At the same time, many donors pulled out their long-term aid to the water sector and the national water directorate saw its budget drop by 90% (ibid). The key means of coordination became the humanitarian water,

sanitation and hygiene cluster, set up in July 2012 but underfunded even for the immediate emergency response (OCHA 2012). The process for developing the PRSP for 2012-2017 halted, and therefore so did the advocacy by civil society organisations for increasing the consideration of water, sanitation and hygiene in this version of the PRSP (interview 28 Nov 2012). By early 2013, sector actors were unsure when funding from the major bilateral and multilateral donors might restart, since this could be conditional on the transitional government holding elections and handing over power to a newly-appointed democratic government (interview 3 Dec 2012). At the time of writing in early 2013, observers were sceptical on whether the national elections proposed for July 2013 could be held successfully (International Crisis Group 2013).

### **Key institutions and actors**

In this section I set out the key institutional arrangements and actors for the rural water supply sector in Mali that have emerged from the historical processes presented in the previous section. I firstly describe the official institutions and roles as defined under decentralisation legislation and national policy (principally based on the Water Code and the National Drinking Water Strategy). However, as I discussed in Chapter Three, I also analyse the actual institutional arrangements that exist since these may have formed through improvisation, adaptation and processes of bricolage where agents 'make do' and 'muddle through' (Cleaver 2012; Andrews, Pritchett and Woolcock 2012). Therefore I highlight key areas where policy is less tightly defined, leading to differing interpretations in practice. These differences between official national policy and actual practice are discussed in greater detail though the local-level processes analysed in Chapters Six and Seven.

The institutional framework in Mali broadly matches the three levels of a service delivery approach for rural water identified by Lockwood and Smits (2011): decentralised local governments act as the service authority but cannot legally manage the day-to-day running of water services. Instead, they should delegate operational management to voluntary water management committees or water users' associations (or, more rarely, for-profit private operators) to act as service providers. National level policy is set by the national water directorate (DNH), part of the ministry for water and the environment. There are also regional offices of the water directorate, and some sub-regional offices at district level

(known as *cercles* in Mali).

Table 5.1 shows the administrative levels of decentralisation in Mali and their associated responsibilities according to the legal framework and national drinking water policy. I also add the official financing roles of different actors, classifying their responsibilities according to the national frameworks and the international definitions for the different components of life-cycle costs of water and sanitation services (Fonseca et al. 2011).

Table 5.1. Administrative levels, actors, functions and financing roles for rural water supply

Levels	Actors and functions for rural water supply according to legal framework and national policy (DNH 2007)	Financing roles for rural water supply according to legal framework and national policy (adapted from DNH 2007, based on definitions from Fonseca et al. 2011)	Summary of financing roles in practice
<b>National</b>	<b>National Water Directorate (DNH):</b> Policy, setting norms and standards, macro-level investment planning, national infrastructure inventory, technical advice to lower levels.	<ul style="list-style-type: none"> <li>• Capital expenditure.</li> <li>• Capital maintenance expenditure after 20 years of an infrastructure's life.</li> <li>• Indirect support costs.</li> <li>• Cost of capital (interest).</li> </ul>	In recent years (2004-2010), DNH has financed an average of 1100 water points per year, 29% of which are rehabilitations (i.e. capital maintenance expenditure), but data is not available on whether these were all older than 20 years (DNH 2012b).
<b>Regional (8 régions)</b>	<b>Regional Water and Energy Directorates (DRHE):</b> Regional-level planning, monitoring and technical advice to lower levels.	<ul style="list-style-type: none"> <li>• Indirect support costs, possibly some direct support.</li> </ul>	Regional offices have very little capacity to provide support to lower levels: 64% of regional staff positions were unfilled in 2008 (World Bank 2008) and more recent figures show only 170 staff outside the capital (Koestler and Toubkiss 2010).

<b>Levels</b>	<b>Actors and functions for rural water supply according to legal framework and national policy</b> (DNH 2007)	<b>Financing roles for rural water supply according to legal framework and national policy</b> (adapted from DNH 2007, based on definitions from Fonseca et al. 2011)	<b>Summary of financing roles in practice</b>
<b>District (49 cercles)</b>	<b>Sub-Regional Water and Energy Services (SSRHEE):</b> District-level planning, monitoring and technical advice to lower levels.	<ul style="list-style-type: none"> <li>• Indirect support costs, possibly some direct support.</li> </ul>	In reality, SSRHEE exist in very few districts of Mali because of lack of funds (World Bank 2008; USAID 2010).
<b>Municipality (703 communes)</b>	<b>Communes:</b> Local planning, coordination, contracting of infrastructure development, ongoing technical assistance to communities, monitoring.	<ul style="list-style-type: none"> <li>• Up to 3% contribution to capital expenditure.</li> <li>• Direct support costs.</li> </ul>	Municipalities have extremely limited access to investment funds or financing for support costs - discussed in-depth in Chapter Six.
<b>Community / users</b>	<b>Water management committees or users' associations:</b> Day-to-day management, tariff collection. <i>Note: The service provider can also be a private for-profit operator.</i>	<ul style="list-style-type: none"> <li>• Up to 2% contribution to capital expenditure.</li> <li>• Capital maintenance expenditure for 20 years of an infrastructure's life.</li> <li>• Operating and minor maintenance.</li> <li>• Some direct support costs.</li> </ul>	Some users and communities raise sufficient funds for operating and minor maintenance costs, but rarely capital maintenance - discussed in-depth in Chapter Seven.

*Note: "Water management committee" is generally used in the Mali context to refer to the*

*group of users who manage one water point or multiple water points in one village. "Water users' association" usually refers to associations which group together committees from multiple villages. I use the terms in this way, although they are sometimes used interchangeably by others.*

The institutional framework demonstrates the recognition in policy that water management committees and water users' associations are not capable of acting as service providers and ensuring the continued functioning of rural water supplies without additional support. However, by examining the intended roles and responsibilities of different actors within the institutional framework, it is clear that the exact elements of support to service providers and which actors are responsible for these are not precisely defined. While reviews of the sector by donors such as the World Bank have argued that the community-based management model should be "reconsidered" (World Bank 2008: 40), and post-construction support improved, they do not detail how this might be done in practice. This raises the question of how external actors such as NGOs can help local actors clarify these roles and support them in fulfilling their responsibilities, which I address in Chapter Six.

The lack of clarity over how exactly municipalities and other actors should support community management bodies and other service providers is reflected in ambiguity concerning the responsibility for financing the recurrent costs of rural water services. Official government policy specifies that users should pay for maintenance, management, replacing parts less than 20 years old, technical and financial monitoring, and any relevant taxes (DNH 2007). As summarised in Table 5.1, these correspond to the recurrent cost categories of operating and minor maintenance expenditure, capital maintenance expenditure, and some direct support costs, according to the definitions of the WASHCost project (Fonseca et al. 2011).

However, despite this policy that users are responsible for all costs for up to 20 years, national strategy also states that the government and the municipalities should make some provisions for supporting "partial renewal of some facilities with less than 20 years of life" (DNH 2007: 44). Therefore national policy is still ambiguous about when exactly municipalities or central government can or should contribute for the costs of renewal or replacement (elements of capital maintenance expenditure). In the face of this ambiguity, actors have adapted in their local contexts as suggested by the idea of "bricolage" (Clever

2012), as I discuss in-depth in Chapters Six and Seven.

Although I have discussed here those levels of government with direct responsibility for ensuring drinking water supply, it should be noted that some other parts of government also play a role, even if indirect. For example, while the health sector does not have responsibility for water supply, it does undertake some related activities under its mission of reducing the burden of ill-health caused by water-related illnesses such as diarrhoea. This difference in mandates between the two departments of ensuring access to improved sources of drinking water versus reducing illness (interviews with staff in the national directorates of health and water 5 and 13 Jan 2011) leads to differing views on the possibility of alternative service delivery models, such as household self-supply, which I discuss in Chapter Seven. For the national water directorate, only water points improved to national standards, which are usually community-based rather than household-owned, count towards national figures for drinking water coverage. However, for the health department, if a family uses its own unimproved well and can be encouraged to improve this to provide some level of protection from contamination (even if not to national standards), this can improve the quality of water consumed and may give some health benefits. Since this helps towards the health sector's mission, the department has been more involved in the promotion of self-supply than the water directorate. I analyse the issue of self-supply using case studies in Chapter Seven.

### **Policy space**

In this section I consider the “policy space” that exists in Mali’s rural sector as a result of the combination of historical context, institutions and actors discussed so far in this chapter. I use the term “policy space” as part of the extended political economy framework to express two related ideas. The first refers to the spaces, such as sector reviews and working groups, where policy is discussed and potentially changed (Hickey 2009b). Cornwall (2002, 2004) argues for a focus on whether such spaces are ‘open’ or ‘closed’ to the poor (or those who advocate on their behalf), and whether the people are formally ‘invited’ to these spaces, or have more proactively ‘claimed’ the spaces for themselves. Cornwall suggests that open, ‘claimed’ spaces are more likely to facilitate pro-poor policy decisions. However, even the decision-making in ‘closed’ spaces is still a ‘visible’ form of power, following the forms

proposed by Gaventa (2006). Therefore I consider a second aspect of “policy space” which is closer to the idea of “room for manoeuvre” (Grindle 2007) in terms of what policies and reforms are actually up for discussion in these spaces. Analysing this ability to set the agenda represents a way of considering forms of “hidden power” (Webster and Engberg-Pedersen 2002; Gaventa 2006).

As I explained in Chapter One, Mali appears similar to the group of countries identified by Lockwood and Smits (2011) where coverage is between 50% and 70% and expanding, but with a high risk of ‘slippage’. This results in an unavoidable tension between investing in infrastructure to increase coverage and focusing attention on issues of sustainability. I acknowledge this tension and its possible influence on causing the sector in Mali to prioritise debates around expanding rather than maintaining coverage; one interviewee even suggested to me that “no-one [at national levels] wants to talk about sustainability” (interview with donor representative 14 Feb 2011). This is why, as explained in Chapter Four, the research undertaken at local government and community levels focuses on areas which already have high coverage and so may be more likely to start paying greater attention to issues of sustainability. However, I argue that it is also necessary to analyse to what extent national-level policy spaces are able to address these twin issues of expansion and sustainability.

An analysis of the recent annual water sector reviews, where the water directorate and other sector actors meet to review progress and discuss common challenges, suggests that there is still greater attention to concerns with how to expand coverage than sustainability. Since the Mali water sector has not yet progressed to a full Sector-Wide Approach, these reviews are the key official forum for discussion between different actors and represent an important policy space.

The key themes which recur as issues where recommendations are made during recent annual reviews (based on reports from 2008 and 2010) centre around improving the planning and implementation of investment in infrastructure in the water sector to ensure effective expansion of coverage, rather than thinking about sustainability. Given the low levels of budget disbursement already discussed, discussions are especially concerned with how to effectively link the budget planning of the state, the water directorate and donors. These issues are considered as part of the ‘roadmap’ in progressing towards the



implementation of the PROSEA sectoral programme. Recent related achievements cited in the reports of the annual reviews include the completion of a study on the investment costs of different types of water infrastructure in different contexts (according to e.g. technology, region, groundwater depth), which has been used to inform the Medium-Term Expenditure Framework for 2011-2013 (DNH 2010). The update of the national water point database, which is clearly important for sustainability and understanding the levels of functionality of water points, is actually emphasised as a tool for investment planning (DNH 2010). The reviews do also mention key issues related to maintaining services such as improvements in the allocations of funds for the running costs of the regional offices of the water directorate (DNH 2008a), although there have then been problems in getting the funds disbursed (DNH 2010).

However, despite the priority issues evident in the annual reviews, sustainability is still a concern for the sector and it appears that policy spaces can exist at least for broad debates on this theme. Even since the coup, which might have been thought to reduce the policy space for talking about long-term issues in the water sector, there have been national-level discussions about sustainability. For example, a workshop involving the national water directorate and NGOs including WaterAid was held in November 2012 for “reflections on the sustainability of public water services” (DNH 2012c: 1). The recommendations from these debates included undertaking an assessment of the state of decentralisation reforms concerning the water sector (including both decentralisation of local government administration and deconcentration of state technical services for water) and a review of the actual practices concerning infrastructure maintenance. Therefore there is a clear recognition in the sector that the issues of sustainability and support to community management must be addressed, even with the additional challenges raised given the uncertain political environment.

Although these reflections are positive signs for policy space to talk about sustainability, it is unclear exactly which issues concerning sustainability will be up for debate. For example, I have highlighted already the ambiguities in national policy concerning the recurrent costs of water services (discussed in greater detail in terms of their relevance at local levels in Chapters Six and Seven). However, despite the apparent need for further discussion about the details of these recurrent costs and who should pay them, the key message promoted by the national water directorate is still simply that the state is primarily responsible for

investment and the users for subsequent costs of operation.

For example, in a presentation by a representative of the national water directorate at the National Water Forum in January 2012 (an event designed to precede the 2012 World Water Forum) on ‘Financing water for all’ it was stated that “the financing of drinking water supply is characterised by the dominant role of the state for investment and the users for responsibility for running costs”<sup>32</sup> (DNH 2012b: slide 3). This message was repeated in the November 2012 sustainability workshop discussed above, where the discussions about financing still focused on mobilising funds for new investments (from taxes and transfers), assuming that operation could be covered by tariffs (DNH 2012a). Therefore, although it seems that national policy spaces may be open to discussing the evolving roles of municipalities and decentralised sections of the water directorate in supporting sustainable services, it may be more difficult to discuss how the costs of these activities and of long-term maintenance of physical infrastructure might be shared between different actors.

#### **5.4. The role of WaterAid: advocating for local governments as service authorities**

As explained in Chapter One, WaterAid has worked in Mali since 1999, but its focus on decentralisation and local governance of water and sanitation (including the approach of direct budget support to some municipalities) combined with advocacy work at national level emerged as elements of its second official country strategy from 2006 to 2011. In this section I discuss WaterAid’s key approaches since 2008, especially as they relate to national-level engagement, before analysing the work of WaterAid and its partners at local government and community levels in greater detail in Chapters Six and Seven.

I argue that the rationale behind WaterAid’s key approach in Mali is the idea of linking service provision to advocacy, at least in terms of “advocacy on behalf of the poor” (as defined by Banks and Hulme 2012). WaterAid’s *Sustainability Framework* (2011) explains that the organisation globally undertakes service provision only on a “relatively limited scale” (WaterAid 2011b: 31), with two key reasons for being involved in service provision work. The first is credibility: the argument runs that WaterAid requires direct engagement in the practicalities of service provision in order to participate credibly in wider discussions

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<sup>32</sup> Translated from French by the author.

about water and sanitation policy. The second argument is for the demonstration effect: the innovations that WaterAid develops through its role in service provision can act as an example to other service providers who have the ability to implement such approaches at scale (WaterAid 2011b).

As explained in Chapter One, WaterAid introduced the *Sustainability Framework* to its staff and partner organisations in West Africa, including Mali, in mid-2011, as a means of supporting their thinking in relation to improving their own service delivery activities and advocating more widely for an increased focus on issues of sustainability. The framework was adapted into a tool which could be used to analyse the strengths and weaknesses of the work of WaterAid's partners at municipal levels against the different elements of the framework. WaterAid originally intended to undertake sector-level policy analysis and subsequent engagement with national-level actors on policy issues affecting sustainability in 2011, in line with the argument in the framework that WaterAid should engage with others to debate the "merits and scalability" of the organisation's own approaches (WaterAid 2011b: 31). Unfortunately, the time required to collect evidence from WaterAid's own work and staff turnover issues in the policy and advocacy team delayed this engagement. The analysis undertaken during 2011 therefore focused on municipal and community levels, which I examine in Chapters Six and Seven, drawing on both the research carried out directly with WaterAid and its partners, and the other fieldwork detailed in Chapter Four.

However, despite the challenges in developing specific policy and advocacy work related to sustainability, WaterAid's general approach still rests on the idea of linking service provision and advocacy, through its promotion of municipal Technical Units within local governments as a model for other actors to follow. This approach of linking innovative service provision to subsequent advocacy is called "advocacy by stealth" by Banks and Hulme (2012: 10, drawing on Batley 2011) - the idea that by working in partnership with government, NGOs can demonstrate approaches for better service provision. Indeed, Batley suggests that in these cases the distinction between service provision and advocacy is unhelpful because the two elements - in principle, at least - are integrated in the strategies of NGOs such as WaterAid, as demonstrated by the explanation in WaterAid's *Sustainability Framework*. As discussed in Chapter Two in relation to the framework for analysing NGO approaches developed by Banks and Hulme (2012), we can also consider if there are differences between "advocacy on behalf of the poor" and other activities which are better able to help the poor be

advocates for themselves. However, given the general limitations of civil society at national levels in Mali, explained in Section 5.2, I argue that it is unrealistic to expect WaterAid and its partners to go much beyond advocacy on behalf of the poor in the national sector context. Instead, I argue that we should focus on assessing whether “advocacy by stealth”, which is still a way of trying to influence institutional change, leads to arrangements which benefit the poor.

WaterAid engages in a variety of such advocacy activities at national level, either directly organised by WaterAid itself or through supporting other initiatives and networks. WaterAid’s own advocacy includes, for example, holding a Forum of Mayors to help local governments lobby central government for the transfer of more funding to local levels, and using its Regional Learning Centre to support learning and capacity-building in the sector around approaches for decentralised service provision. The networks and coalitions that WaterAid supports include networks of journalists and of parliamentarians for water and sanitation, and two national civil society coalitions, CAEPHA<sup>33</sup> and CN-CIEPA.<sup>34</sup> CAEPHA and CN-CIEPA are both coalitions part-funded by WaterAid through the Governance and Transparency Fund from the UK’s Department for International Development (DFID). The two coalitions work closely together, although CAEPHA has a greater focus at local government levels (for example, in promoting public hearing days to bring citizens and elected councils together) and CN-CIEPA more at national levels (interviews with CAEPHA and CN-CIEPA staff 28 Nov and 3 Dec 2012). Both have also tried to use examples of civil society involvement in service provision activities (for example, local NGOs promoting hygiene behaviour change programmes) as a way of advocating for greater civil society representation in national policy such as the development and implementation of PROSEA, the sectoral plan introduced in Section 5.3 (CAEPHA 2009; CN-CIEPA 2010).

This approach represents an example of civil society groups trying to link their different roles of service delivery and advocacy, as suggested by Togola and Gerber (2007), within the ‘associational’ view of civil society and its potential influence on policymaking. The two coalitions claimed some success in obtaining a place for civil society representation on the PROSEA steering committee, although the steering committee subsequently failed to become operational, as explained in Section 5.3 (AMCOW 2010; FAN and WaterAid 2011). This further demonstrates some of the limits to civil society action. CAEPHA and CN-CIEPA

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<sup>33</sup> The Coalition for Access to Water, Sanitation and Hygiene.

<sup>34</sup> The National Coalition for the International Campaign for Water, Sanitation and Hygiene.

are also both networks of existing NGOs and coalitions, reliant on donor funding and its associated possible influence (Roy 2005; van de Walle 2012). As explained above, the Banks and Hulme (2012) idea of NGOs promoting direct ways for the poor to advocate directly for themselves seems unrealistic in the national water sector given the context of civil society in Mali; CAEPHA and CN-CIEPA's work on empowerment remains at local government levels. The way these organisations address issues of sustainability is also through work on citizen empowerment at local levels, hoping that initiatives such as municipal public hearing days will continue to be held after the support from WaterAid's civil society partners and will lead to more accountable and responsive local governments (interview with CN-CIEPA staff 3 Dec 2012).

## **5.5. Conclusions**

In this chapter I have used the extended political economy analysis framework to analyse key national-level issues affecting the sustainability and financing of rural water services, from the structural factors of aid dependency, partial decentralisation reforms and the weakness of civil society, to the key institutions and sector actors. In addressing the conceptual question of whether national policy reforms in the rural water sector are actually "reforms as signals" (Andrews 2013), I have shown the core differences between the institutional framework in policy and in practice. Although the official institutional framework in Mali broadly matches the three levels of a service delivery approach for rural water outlined by Lockwood and Smits (2011), there is a lack of clarity over the responsibilities of different actors and a lack of capacity to fulfil their roles, especially concerning ongoing support to community management.

Although it is not possible to say to what extent donors have influenced specific elements of policy relevant to the water sector (such as the legal framework set out in the Water Code and the subsequent national strategies based on this), I have shown how Mali's dependency on aid and the motivations of the political class to maintain aid flows have given international donors a strong influence over national policymaking in general. Therefore it is plausible that similar processes have occurred regarding policies and frameworks for the water sector. The outcome appears similar to what Harvey (2008) calls a strategy of passing the buck between national government and donors. Community management and the

recovery of operating costs from users have been adopted as national policies without sufficient consideration of the limits to these approaches and how support could be provided from higher administrative levels.

This chapter has also assessed the “policy space” that exists in Mali’s rural water sector for discussing issues of financing and sustainability and addressing the concerns highlighted. It appears that there is some space in national debates for reflection on the roles of different actors and the success (or otherwise) of decentralisation processes so far. However, financing debates are more focused on how to mobilise new funding (whether by the central government or municipalities) than on discussing the roles of different actors in contributing to the recurrent costs of water services. This observation has implications for the approach of WaterAid and its partners, which I have explained is based on “advocacy by stealth” (Banks and Hulme 2012), seeking to demonstrate to other actors the potential of WaterAid’s own model for enabling municipalities to fulfil their role in expanding coverage and supporting ongoing services. This requires an understanding of both how WaterAid’s model works in practice, and the potential for using the results to contribute to national debates with the objective of similar approaches being taken up by government and other donors.

Therefore my next step, in Chapter Six, is to undertake more in-depth analysis of the roles of different actors at municipal government level and how the costs of rural water services are shared between them. Given the observation, in line with Andrews’ argument of “reforms as signals”, that a lack of capacity and coherence hinders the implementation of national policies, it is necessary to analyse in detail how organisations such as WaterAid and its partners respond to these challenges at local levels. In particular, this allows us to assess the conceptual question of whether processes at these levels represent unrealistic attempts to implement ‘best practice’ principles which conform to national policy, or examples of “practical hybridity” and “institutional bricolage” where actors try to adapt as best they can to their context. In turn, this helps us understand the potential and limits of local actors to develop effective systems of community management and local government support for rural water services.

## Chapter Six - The role of local governments in financing rural water services

### 6.1. Introduction

In this chapter I analyse the role of decentralised local governments in contributing to the financing of rural water services and providing support to community management of water supplies, drawing on case study data from five municipalities where WaterAid works (as explained in Chapter Four, costs data was available in four of the municipalities, but one additional municipality is considered using qualitative data on how municipalities seek financing).<sup>35</sup> As discussed in Chapter Four, these municipalities were selected for research chiefly because they have existing high coverage rates in terms of basic access to water services, so represent useful areas in which to consider issues of sustainability and how to avoid 'slippage' of coverage rates falling back (Reddy et al. 2010). Three of the municipalities were also the first three local government areas where WaterAid had begun the approach of direct budget support and helping set up local WASH Technical Units. I explain this approach in more detail below when I describe the activities of WaterAid in trying to support local governments to fulfil their official roles, in terms of both expanding coverage and ensuring that services continue to function. I then examine each of these two key roles in turn. I describe the options available to municipalities according to national policy for seeking funding and implementing new infrastructure, and assess WaterAid's approach to helping local governments obtain this financing.

I then turn to the role of municipalities in providing support to community management, comparing the approach promoted by WaterAid to other options suggested in national policy. I analyse the recurrent costs of these different models of direct support, as well as the other recurrent costs of water services incurred at local levels i.e. operating and minor maintenance expenditure and capital maintenance expenditure. This analysis responds to the first key theme of the research, concerning how costs are shared between different actors. In the subsequent section of this chapter, I compare the findings on the approaches to sharing recurrent costs with the associated functionality rates of water points in the different case study municipalities. This enables me to identify the implications for the research themes of approaches to service delivery (especially concerning the role of local

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<sup>35</sup> This chapter draws on two articles which are forthcoming in peer-reviewed journals (Jones 2013c, forthcoming [accepted, in press]; Jones 2013d, forthcoming [accepted pending revisions]). I am grateful to the anonymous reviewers of these articles for their comments.

governments as service authorities) and how NGOs can promote sustainable financing approaches.

Throughout the chapter, I analyse the findings in relation to the analytical framework presented in Chapter Three, especially concerning the processes of institutional change observed at municipal level and the role WaterAid and its partners play. Using the framework, I argue that the municipal level of local governance is where the three bodies of literature on institutional change that I draw on overlap, each placing a slightly different emphasis on what to look for when understanding the governance of public services and natural resources. To recap, the work of Andrews et al. and Booth emphasises the need to examine what national policy reforms actually look like at the local government level, especially whether institutional reforms prioritise form over function ("reforms as signals") and if the local effect is policy incoherence. Booth suggests looking for positive locally-driven reforms, if these can be distinguished from merely palliative attempts to make up for a lack of state-assured public services.

The critical institutionalist literature and Cleaver's argument is more cautious: it emphasises the limits to locally-driven action within wider structural constraints, highlights the possibility of unequal outcomes, and the importance of understanding the overlap between institutions at municipal level with those at community level. As I concluded in Chapter Three, I also distinguish between observations of how institutional change actually happens (through processes of bricolage) and whether the approaches of external actors such as WaterAid acknowledge and promote bricolage or more rigid ideas of 'best practice'. In this chapter, this question requires assessing whether national policy and WaterAid's approach sufficiently consider a critical institutionalist perspective or if they are too reliant on an unrealistic mainstream institutionalist viewpoint.

### **WaterAid's approach**

Before presenting the evidence and analysis, in this section I summarise WaterAid's approach in Mali at local government levels, rather than their overall national-level work described in Chapter Five. WaterAid's work in Mali sits mainly within the organisation's wider programmatic approach in West Africa, the Local Millennium Development Goal



Initiative (LMDGI). The LMDGI approach was developed to encourage and support decentralised local governments in taking responsibility for meeting the Millennium Development Goals for water and sanitation, by planning and seeking financing for local equivalents of the MDG targets in their areas. WaterAid's support was designed to improve the capacity of local governments to plan, finance and implement the required interventions, and to improve the ability of citizens to participate in these processes (WaterAid 2008).

In Mali, WaterAid's current key approaches and areas of work developed along with the LMDGI concept as part of its second official country strategy from 2006 to 2011 (WaterAid Mali 2010). WaterAid now works in a total of 15 rural municipalities, in partnership with local NGOs and the municipal governments themselves. In line with the LMDGI aims and national policy in Mali, there is a strong focus on supporting municipalities in planning, securing financing and organising the implementation of new infrastructure development. However, WaterAid also emphasises the role of municipalities in providing ongoing post-construction support to community management, such as monitoring, technical support and conflict resolution (WaterAid Mali and GERAD 2008).

As I briefly explained in Chapter One (see Figure 1.1), since 2008 WaterAid has begun introducing a system of direct budget support to its partner municipalities to create a WASH Technical Unit within each of these local governments. The WASH Technical Unit is now the model proposed by WaterAid as a way of allowing local governments to act as service authorities and ensure direct support to communities. The Technical Units are each made up of one to two members of paid staff (usually a WASH coordinator and a field agent), who are employed as civil servants of the municipality and report to the elected mayor. However, their salaries and the overheads (such as office equipment and transport costs) of the Technical Unit are financed by WaterAid through a system of direct budget support to the municipality.

The staff of the Technical Unit work for the municipality in the planning and implementation of new infrastructure, and provide ongoing post-construction support to community management. Before the introduction of the budget support approach, this work on implementation and direct support to community management bodies was undertaken by members of staff of local NGO partners of WaterAid in each municipality. This previous approach is still used in most of the rural municipalities where WaterAid intervenes,

because the arrangement of direct local government partnership and budget support has been introduced so far on a gradual rolling basis.

## **6.2. Municipalities' role in expanding coverage**

### **Financing capital investment: national policy and reliance on aid**

In this section I discuss the different ways in which municipalities in Mali can and do access financing for capital investment in rural water services. Although my focus is on recurrent costs and sustainability, as already explained, I consider capital investment here because it is supposed to be a key part of the municipalities' overall role of "*maîtres d'ouvrage*": under decentralisation reforms, municipalities in Mali have increasing responsibility for local development planning, including water and sanitation. For drinking water, this includes organising the construction of infrastructure, arranging for operators to take charge of infrastructure (whether private enterprises or community-based management structures), and ensuring the control and monitoring of these approved infrastructure management bodies (Diarra et al. 2004). Or, as Coulibaly et al. (2010: 23) put it, "in practice, decentralisation [in the sectors of water, health and education] means mainly that new capital expenditure responsibilities have been offloaded to local governments." Understanding the processes of financing capital investment also helps examine the relationships between the municipalities, other levels of government and NGOs, and permits us to start analysing the reality of the institutional arrangements in place. For example, this highlights the tensions between targeting funds to help promote equity amongst different municipalities, and imposing conditionalities on financing which generate competition between municipalities, an issue which I explore further in relation to the role of WaterAid in the next section.

I first examine the processes for financing capital investment in water infrastructure, for which there are four key potential sources available to municipalities. The first two of these are generally 'on-budget' and therefore the municipality can plan for these on an annual basis: local taxes from the population of the municipality (principally the regional and local development tax) and intergovernmental transfers from central government (Diarra et al. 2004; Coulibaly et al. 2010). The other possible sources for investment are usually

'off-budget': sectoral funds from the national water directorate (via its deconcentrated regional offices) and projects funded by NGOs or other donors. Municipalities usually have less decision-making authority over these 'off-budget' funds, although as I discuss further below, WaterAid is trying to encourage the inclusion of these funding streams within municipalities' budgets to aid their planning and autonomy.

Although legally there are a variety of sources of local taxation available to municipalities,<sup>36</sup> in practice for the majority of rural municipalities (which cannot collect significant taxes from the other possible sources such as markets and land sales) the most relevant tax is the regional and local development tax (*taxe de développement régionale et locale*, TRDL). The TRDL is levied on each person of working age in a municipality, at an annual rate of about US\$ 4 per person (Coulibaly et al. 2010), 75% of which is retained by the municipality, and 25% allocated to the *cercle* and region above. Even though estimates suggest that average recovery rates of the TRDL have risen from about 50% in the mid-2000s (Diarra et al. 2004) to about 90% by 2010 (Coulibaly et al. 2010), the amounts concerned are still so low that the revenue can generally only be used for supporting the overheads of a municipality's administration rather than any investment in public services.

Therefore municipalities must look to central government for capital investment financing. The key intergovernmental transfer mechanism for investments by local governments is ANICT (the National Agency for Local Government Investment), a system which disburses money to local governments from a central fund for public services such as health, education and water; other public works, such as council offices; and infrastructure designed to promote economic development, such as livestock markets (Diarra et al. 2004). ANICT is dependent on funds from international donors (acting as a form of pooled fund) and so has been criticised for challenges of year-to-year predictability (Mehta and Mehta 2008), different reporting requirements to the rest of the national finance system (OECD-DAC 2012), and long-term sustainability (Lemelle 2008; Jaglin et al. 2011). Despite these problems, with a total annual budget of up to US\$ 40m by 2010, ANICT remains by far the most important form of intergovernmental transfers, representing about 2.3% of the total government budget (Coulibaly et al. 2010). The sizes of the allocations from ANICT to different municipalities are determined according to four weighted criteria: population of

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<sup>36</sup> These include, amongst others: vehicle taxes; taxes on bars, nightclubs and restaurants; taxes on public advertising; mining taxes; taxes on waste collection, and tax on livestock. It is unsurprising that most of these options do not apply in any significant way to poor rural areas.

the municipality, rate of recovery of local taxes (the TRDL), distance from the capital city, and poverty rate (Le Bay and Loquai 2008). However, WaterAid has criticised the ANICT criteria for putting greater weight on population and tax recovery than on poverty levels, which can put poorer municipalities - with a lower ability to organise effective tax collection - at a disadvantage in the allocations despite their potentially greater need (WaterAid 2008).

As part of the conditions for applying to ANICT, municipalities have been required to elaborate local development plans, known as PDSECs (Social, Economic and Cultural Development Plans), in which they set out the public investment needs in the area. In theory, these plans were supposed to be developed through a participatory process which involved the local population in setting priorities for investment. However, Coulibaly and Hilhorst (2004) argue that most municipalities have relied extensively on NGOs and private consultancy firms to help them develop these plans, and focused more on meeting the technical demands of the documentation required by ANICT than creating ways for local people to have input into the process. Even where intentions were good, there was a lack of tools and experience to enable a participatory process (Bangaly 2002).

This process represents an example of “reforms as signals” (Andrews 2013): the phenomenon where there is pressure on a developing country’s public administration (typically from external donors) to adopt particular forms of administration, usually copied from Western public administration (or an idealised version of this), with much less focus on the actual function and outputs that result. As Andrews et al. argue, the actual people whose role it is to promote change - in this case, local councillors, civil servants and citizens themselves - tend to be left out of the conversation about what changes are desired. In the next section I discuss to what extent WaterAid’s approach to working with local governments has been able to overcome this challenge or not, partly by analysing whether their understandings of institutional change draw more on mainstream institutionalism or critical institutionalism.

From 2001-2003, municipalities were also required to contribute 20% of the costs of all projects funded through ANICT. However, this contribution was too much for some municipalities to pay (Coulibaly and Hilhorst 2004) and there were reports that in many cases private contractors paid this share on behalf of the municipality as a bribe in order to be awarded future contracts (Hetland 2007). From 2004, the contribution required was

reduced and is now set according to the type of project. The required contribution from the municipality is 3% of the cost for water projects (Lemelle 2008; WaterAid 2008). For health and education projects, no contribution from the municipality is now required at all (Jaglin et al. 2011).

In terms of investment in water provision, 486 water projects were funded through ANICT between 2002 and 2006 (Lemelle 2008), most of which were basic water points such as boreholes equipped with handpumps, or “modern wells” (Jaglin et al. 2011). To put this in perspective, there are nearly 700 rural municipalities in Mali, so at least one third of municipalities did not access any funds for water projects from ANICT during this period. One problem identified is the common requirement to group water infrastructure investments into projects of a certain size (a minimum number of new water points) in order to achieve the necessary economies of scale, which can be difficult on a per-municipality basis (DANIDA 2010; DNH 2012a).

Although the criteria for receiving funds from ANICT are intended to support equity across municipalities and regions by adjusting allocations according to the circumstances of different areas (Lemelle 2008), the conditionality aspects of the mechanism create an element of competition between municipalities. As Le Bay and Loquai (2008: 151) put it: “the tolerance threshold for defects in local government performance seems to be declining.” They argue that increasing selectivity on access to financial aid should benefit municipalities because it enables them to become more responsible for their own performance.

Faggianelli et al. (2009) extend this argument more specifically into the water sector by suggesting that an additional condition on receiving funds from ANICT could be the payment by the municipality concerned of the required fees to the privately-operated technical support service (STEFI) for small piped water systems which exists in certain regions and is described in more detail later in this chapter. The rationale is that the central government should avoid financing new infrastructure in areas where the municipality does not appear committed to supporting the maintenance of existing infrastructure. Water for People and IRC (2012) make a similar argument based on experiences in other countries, suggesting that external actors in the water sector should prioritise their support to a few districts in order to develop models for how to reach and sustain full coverage which can inspire other

districts. WaterAid's own discussions amongst different country programme teams in West Africa as the organisation introduced its *Sustainability Framework* expressed similar ideas.

These examples of elements of competition between municipalities demonstrate the possible tensions between equity and sustainability; if it is thought that only areas with sufficiently strong leadership can achieve sustainability, there is the risk that areas with weaker leadership could fall behind. Jaglin et al. (2011) argue that some areas of Mali have already received funds from ANICT in excess of their own development needs at the expense of other regions, even though the approach was supposed to promote equity. This has been exacerbated, according to Jaglin et al. (2011: 132), by the tendency of NGOs and donors "to mark out 'their' territory" of work.

There is a possible parallel between this element of competition and some of the debates in geography about local government entrepreneurialism (Harvey 1989; Rogerson and Rogerson 2010), where local governments compete to make their area attractive to private investment. There are some clear differences between the Mali case and most of the examples discussed in the local government entrepreneurialism literature: the Mali examples are rural rather than urban; they are predominantly trying to attract donor and central government grant funding rather than private investment (although Harvey and Rogerson and Rogerson do note that taking advantage of redistribution from central government, especially for infrastructure investment, is one strategy that entrepreneurial local governments can adopt); and the focus is on funding basic services. However, there is a possible similarity between this case and the arguments in the literature, concerning the danger that the competitive process becomes a zero-sum game. This results in a situation where neither central government nor donors expand the amount of resources they give, but some local governments are prioritised - possibly unfairly - over others. I discuss this further in the next section in relation to WaterAid's approach.

Despite the intention of decentralisation to give more authority to municipalities over rural water services and investment planning as discussed above, 'off-budget' funds (that flow through the national and regional water directorates or NGOs and donors) continue to be more significant, and are likely to remain so (DANIDA 2010). As Coulibaly et al. (2010: 29) pessimistically observe: "There are not currently any significant prospects for modification of Mali's intergovernmental fiscal system, with respect either to decentralisation of tax

authority or the automatic assignment of certain revenue transfers to the sub-national governments.” In line with the national drinking water strategy, municipalities are supposed to liaise with the regional water offices to develop priority lists for investment based on the needs identified in the PDSEC. The regional water offices can then approve the municipality’s project plans and in theory the municipality can proceed in its role of organising contracts and setting up operators for the water infrastructure. However, since the approval of such investment relies on the necessary funding being identified and available, the municipalities and regional water bodies are still heavily dependent on the plans of external donors, which tend to be for large programmes covering a particular region at once.

Having presented the ways in which municipalities can obtain capital investment financing for rural water services, I turn in the next section to the role of WaterAid and consider the organisation’s approach in light of the challenges presented. I argue that WaterAid’s idea of promoting models for how local government can ensure the implementation and sustainability of water services should be assessed against both whether the model works where it has been used so far, and if it can realistically be scaled up elsewhere too, without promoting inequalities between municipalities. This involves considering to what extent WaterAid’s work falls into the possible trap of promoting “reforms as signals” or not, and whether the implicit understandings of institutional change evident in the work of WaterAid and its partners are based more on mainstream institutionalism or critical institutionalism.

### **The role of WaterAid in helping local governments seek further financing**

In the previous section I examined how municipalities can seek funding for capital investment for rural water services, highlighting a series of key issues. The ability of municipalities to generate local taxes barely covers the basic administration costs of local government. This leaves little money for investing in public services (or for running them, which I address further in the next section). Therefore municipalities have to look elsewhere for investment financing: intergovernmental transfers from central government, funds which come through regional offices of the water ministry or aid from donors. However, the actual processes involved in accessing these funds display elements of “reforms as signals” (Andrews 2013), meaning that emphasis is placed on the form of the institutional change

rather than its usefulness, and competition, which is seen as a good thing by many but leads to the danger of promoting zero-sum games between different municipalities. Therefore in this section I explore in more detail how WaterAid tries to help municipalities raise money, in order to assess whether this approach helps get past the problems identified, or suffers from similar challenges.

Given the importance of international donors in financing the water sector, these have been the key target when WaterAid has tried to support municipalities in finding additional investment funds. WaterAid calls this fundraising process ‘marketing’<sup>37</sup> by the municipalities. In each of the municipalities where it works, WaterAid has helped the municipality (through engaging an external consultancy firm) to develop local Sector Development Plans (*Plan Sectoriel de Développement*, PSD) for water and sanitation, in a similar way to the process of elaborating general local development plans (PDSECs) that I discussed above. The Sector Development Plans for water and sanitation are intended to include a much more detailed analysis of the water and sanitation needs of each village in the municipality which can provide a more rigorous basis for the priorities to be included in the municipality’s PDSEC.

The development of the Sector Development Plans for water and sanitation in WaterAid’s municipalities of intervention took place in 2007 and 2008, with each plan setting out the needs for water and sanitation infrastructure implementation until 2015. The rationale for this timeframe was that it was a way of translating the Millennium Development Goals for water and sanitation - to reduce by half the proportion of people without access to safe drinking water and sanitation by 2015 - into local targets and plans. Given the limited funds available to the municipalities from intergovernmental transfers discussed above, WaterAid decided to support the municipalities in fundraising from other sources. Therefore in 2008 WaterAid began delivering training for municipalities on how to ‘market’ their Sector Development Plans i.e. approaching potential donors to fund elements of the plans and then managing the subsequent projects and donor relationships. In addition to the fundraising objective of ‘marketing’, the process was intended to improve the coordination of NGO and donor activities with the priorities of the municipality as set out in the Sector Development Plan, and to help develop the capacity of the municipality to manage the planning, implementation and monitoring of infrastructure projects.

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<sup>37</sup> I use inverted commas as a reminder that I am referring to a specific use of the term ‘marketing’ rather than its more general meaning.



Four rural municipalities were chosen in the first group of municipalities to receive training (Dialakoroba, Kolokani, Tioribougou and Yelekebougou). These municipalities were selected for a combination of reasons: their proximity to Bamako, the capital city (and therefore ease of organising both training sessions and potential events or meetings with donors based in the capital); their longer history of working with WaterAid than some other areas where the organisation works; and their perceived potential capacity (in terms of ability and commitment of relevant officials and staff) to undertake the 'marketing' activities proposed.

Where possible, the participants in the training were the Mayor, the Deputy Mayor with responsibility for water and sanitation (both elected representatives of the municipality who sit on the municipal council), the general secretary of the municipality (a civil servant), the coordinator of the municipality's water and sanitation Technical Unit or a representative of the local NGO partner of WaterAid working in the municipality (depending on the form of partnership approach used by WaterAid in that municipality), and a representative of the water users' association of the municipality. In addition, local financing studies were carried out in two of the municipalities (Kolokani and Yelekebougou) to provide further evidence to potential funders of the municipalities' needs.

The inclusion of the water users' association in the process was intended to help demonstrate to donors the systems in place for managing the operation and maintenance of the infrastructure after construction, since as explained under decentralisation law the municipality should not directly undertake these activities itself but should instead delegate day-to-day running of the systems to a private operator or a voluntary body. As discussed in more detail in Chapter Seven, the most common forms of management are community-based water management committees or other more informal groups of users at village level. These community-level groups should in theory form part of a larger municipality-wide water users' association to help provide mutual support between community committees and provide a mechanism for the representation of water users in municipality-level discussions. However, as my previous research described in Jones (2011a) explains, these voluntary associations are sometimes inactive, so it is unclear whether involving their supposed representatives in the 'marketing' process would actually help secure donor funding or not.

In 2009, the next round of local elections was held in Mali and many of the elected

representatives who had previously been in positions such as the Mayor or the Deputy Mayor with responsibility for water and sanitation lost these roles, although in some cases they retained their seats as ordinary councillors but without additional Mayoral responsibilities. Therefore in 2011 WaterAid organised a further training programme for representatives of the same four municipalities (and one additional nearby municipality, Tienfala, where WaterAid had started working since 2008), to act either as a refresher training or as the first training opportunity depending on the participant. In the remainder of this section I present analysis based on documentation from WaterAid, interviews with partners and local government representatives from four municipalities involved in the 'marketing' process, and observation of the workshop on 'marketing' held for WaterAid's partners in 2011.

The feedback from interviewees was that WaterAid's support to the municipalities in terms of developing the Sector Development Plans and promoting the idea of NGOs working more closely with the municipalities may be having some beneficial effect in terms of coordination. Representatives in two of the municipalities (Kolokani and Tioribougou) gave the example of another international NGO working on water and sanitation which had previously developed relationships with particular selected villages in the municipalities, but without consulting representatives of the municipality or considering the municipality-wide priorities described in the Sector Development Plans. The interviewees explained that this NGO had now begun to start consulting with representatives of the municipalities concerned, and had provisionally indicated that in future it would work in line with the priorities expressed in the Sector Development Plans that WaterAid helped the municipalities to develop (interviews with municipal councillors and civil servants 4 Nov and 23 Nov 2011).

However, many challenges to coordination remained. One example of note was a local NGO with which WaterAid has a partnership in municipalities in northern areas of Mali (outside the scope of this research). This NGO also works in one of WaterAid's partner municipalities in this study, Kolokani, but does not itself partner with WaterAid in this area. Instead it receives funding for its activities from another larger NGO. Despite the smaller NGO's knowledge of the use of Sector Development Plans thanks to its work with WaterAid elsewhere, in Kolokani it did not liaise with the municipal council or follow the Sector Development Plan, because its funder NGO had alternative procedures in place (interviews with municipal officials and civil servants 23 Nov 2011). In another municipality, Dialakoroba,

an international NGO came to work in the municipality after the key meetings when the Sector Development Plans were shared with actors in the area, and started using approaches to water and sanitation which were different to those specified in the Sector Development Plan (interviews with municipal councillors 21 April and 1 Oct 2011).

Moreover, improving the coordination of NGOs using the Sector Development Plans does rely on each municipality's representatives being familiar with and in agreement with the plans, which may not be the case if they had little involvement in the actual process of developing the documents. In the 2011 workshop on 'marketing' the Sector Development Plans, the majority of participants admitted that they were not familiar with the plans for their own municipalities (observation from show of hands at workshop 26 Sept 2011). There are two reasons for this lack of involvement. Firstly, the process in some cases was dominated by the consultants involved, in a similar way to the criticisms made by Bangaly (2002) and Coulibaly and Hilhorst (2004) of the original PDSECs. This suggests that in some respects WaterAid's approach has fallen into the trap of promoting "reforms as signals" described by Andrews (2013): some of the people who should have had key roles in these changes were insufficiently involved, and priority was given to the 'form' of the processes rather than the actual 'function' of developing plans which were locally-owned.

The second reason for some councillors' lack of involvement in putting together the Sector Development Plans was more difficult to avoid; some officials had only been elected since the plans were first developed. One councillor, who had responsibility for water and sanitation in his municipality during the 2004-2009 mandate but lost this position after the 2009 elections, stated that he "saw lots of copies of the Sector Development Plan at the Mayor's office, but they were never distributed after the handover [to the new council]" (interview with municipal councillor 22 Nov 2011). Both officials interviewed in this municipality suggested that the new Mayor and Deputy Mayors may have been inclined not to use the Sector Development Plans "for party political reasons" (interviews with municipal councillors 22 Nov 2011) i.e. because possible benefits from using the plans might have reflected credit on the previous administration rather than the current incumbents. WaterAid was aware of these sets of problems and had planned to support revisions of the Sector Development Plans in 2012 with greater involvement of each municipality and less reliance on external consultants, but this was put on hold after the coup d'état in March 2012.

Although the municipal representatives reported this possible benefit to improved coordination of drinking water development projects, almost all interviewees said that it was difficult to find new NGO or donor partners because of a lack of knowledge of who to contact and lack of funding for the necessary travel and other activities involved in the 'marketing' process (interviews with municipal councillors 1 Oct, 3 Nov, 22 Nov and 23 Nov 2011). After the 2008 round of training, WaterAid gave financial and logistical support to some of the municipalities to help organise roundtable events with existing and potential future donors in attendance, as well as representatives of the regional water directorate and deconcentrated regional bodies of other public services. At these meetings the municipality could present the Sector Development Plan and begin discussion about which donors might be willing to contribute to elements of the plan. However, the municipalities did not have funding for additional activities to follow-up on this or to seek other donors who were not present.

These challenges demonstrate the general limitations of the idea of 'marketing' as a way of municipalities securing additional funds for rural water services, and may also have a further effect on equity between municipalities. Councillors in one of the municipalities that had been able to undertake some of the most extensive marketing activities accepted that the process did entail "aggressive" competition between different municipalities, especially geographically neighbouring ones (interview with municipal councillors 1 Oct 2011). They made the similar argument to Le Bay and Loquai (2008) and Faggianelli et al. (2009) that this competition between municipalities is a good thing and preferable to other methods of allocation by the central government, because competition means that municipalities who are able to show that they are really committed are likely to be awarded more resources. But this also demonstrates the weakness of the approach in promoting equity between municipalities, and displays a similar trend to that identified in South Africa by McDonald and Pape (2002) where municipalities compete against each other for resources from private investors and tourists and the redistributive role of the central state is minimised. In this case, it is also elements of the approach of INGOs such as WaterAid that encourage competition between municipalities for funds from the central government and donors.

To illustrate this I use the example of the municipality of Dialakoroba, where WaterAid works through its local partner NGO AMPDR. The municipality undertook 'marketing' of its

plans to potential partners through roundtables and meetings in 2008 and received the further follow-up training in 2011 as described above. In the period 2008-2011, 25 new water points were built in the municipality, twice as many as had actually been proposed in the Sector Development Plan (12 water points). As a result, by 2011 there were no villages in the municipality considered underserved in terms of number of water points, either by figures used by the national water directorate (DNH 2011), or by my own calculations based on the water point mapping survey carried out through WaterAid in November 2011.

Despite this, there were still proposals in the Sector Development Plan to implement a series of small piped systems in the municipality from 2012 onwards. This is understandable from the point of view of trying to upgrade users' access from the existing sources of handpumps on boreholes and "modern wells" to a system of tapstands supplied from a borehole fitted with a motorised pump and a reservoir, which should in theory provide a service of greater reliability, accessibility (in terms of distance, because it can supply multiple dispersed tapstands and therefore be closer to more households) and/or quality. However, it seems that upgrading the drinking water supply of users in a municipality who already have access to improved water sources should be lower priority than ensuring access to improved water sources for the first time to users in other municipalities.

This illustrates one of the challenges to equity in WaterAid's approach to working with local governments. In seeking to show that local governments can be capable of implementing and managing rural drinking water services, WaterAid has so far tended to give greater support to municipalities which have already demonstrated a certain level of capacity. But in demonstrating and developing this capacity, these municipalities may also get ahead of other municipalities which may be in greater need of support in terms of their populations' access to drinking water. In municipalities which have relatively high existing coverage, it is also important to start paying more attention to issues of post-construction support and recurrent costs. I turn to these issues in the next section.

From this assessment of WaterAid's approach to supporting municipalities in raising funds and planning for new investment in rural water services, I argue that the organisation's strength has been in recognising and trying to address the key challenges of a lack of resources and coordination at municipal levels. In effect, they are trying to support institutional change from one "mode" of local governance (Olivier de Sardan 2011) to

another. The current institutional arrangements are predominantly a combination of “project-based” and “associational” modes (Olivier de Sardan 2011), where donors and NGOs represent the main sources of investment and local committees the key means of delivering public services, but with low levels of coordination. WaterAid’s approach is designed to promote a shift towards a mode of governance with stronger “municipal” and “associational” features, in addition to the project-based elements, meaning that local government is able to provide the desired coordination in investment and service delivery, even if its own resources remain relatively limited.

However, as I have described above, parts of WaterAid’s work - such as the promotion of Sector Development Plans - have exhibited the challenges that Andrews (2013) refers to as “reforms as signals”, prioritising the appearance of institutional reforms over the actual results. Furthermore, WaterAid’s approach also involves promoting some elements of competition between different municipalities, leading to the possibility that municipalities with greater capacity and access to resources are able to get even further ahead of others. I argue that these issues demonstrate in WaterAid’s approach a tension between the ideas of mainstream institutionalism - for example, promoting formal processes, decision-making and incentives - and critical institutionalism, which is more sensitive both to the ways in which institutions change through gradual adaptation, and to the possibility that these processes increase inequality. I extend this argument in the next section when I move beyond the issues of capital investment and planning, and address the second key role of municipalities in Mali in relation to rural water services: ensuring ongoing support to community management bodies.

### **6.3. Municipalities and support to communities**

In this section I examine how WaterAid works in partnership with decentralised local governments to develop approaches for providing support to community management of rural water supplies, beyond the initial phase of financing and developing new infrastructure that I have discussed so far in this chapter. I also analyse how the approaches promoted by WaterAid compare to policy and practice in the wider Mali rural water sector. Although WaterAid and the sector have not explicitly adopted the idea of a service delivery approach as described by Lockwood and Smits (2011), the model of municipal government

involvement that WaterAid supports is broadly equivalent to the role of service authorities within a service delivery approach to rural water supply. However, there are differences between the arrangements for direct support to community management used within WaterAid's approach and the arrangements suggested by national policy, so I discuss the two approaches.

I acknowledge, as discussed in Chapter One, that Mali is one of the countries experiencing "tension between pursuing increased coverage ... [and] addressing sustainability in a more structured way" (Lockwood and Smits 2011: 148-9). However, in the four municipalities used as case studies for analysis of costs in this section, estimated levels of coverage were 90% or above (according to surveys by WaterAid's partners in November 2011) i.e. higher than the average for rural Mali. Therefore these municipalities could represent areas where attention can shift further towards addressing sustainability and issues of support to community management, as the imperative to increase coverage becomes relatively less important compared to other areas. Examples of practice from these municipalities could provide useful future lessons for other parts of Mali, responding to the research themes on the role of local governments and NGOs. As part of this debate regarding support to community management, I analyse how the recurrent costs of rural water services are shared between different actors, in policy and in practice. This evidence responds to the first research theme and enables me to expand the analysis further into the debates on institutional change.

### **Support to community management: WaterAid's approach and other models**

As introduced at the start of this chapter, the model of WASH Technical Units promoted by WaterAid is intended to help municipalities ensure ongoing support to community management as well as the implementation of new infrastructure. This approach is what Smits et al. (2011) term an internal arrangement for direct support, where the support is provided by agents of the local government service authority itself (even if they are funded by WaterAid). However, external arrangements – where the support comes from a different entity to the service authority – also exist in Mali. The key example to highlight is the STEFI (Technical and Financial Monitoring) system (Faggianelli et al. 2009; Smits et al. 2011). The STEFI system involves a private operator commissioned by municipalities to undertake

monitoring and technical advice to service providers of small piped systems. Therefore the STEFI system is categorised as an approach of local government subcontracting to a specialised support agency (Smits et al. 2011). STEFI is the main model suggested by national policy in Mali for providing support to community management (DNH 2007).

In addition to the differences in the arrangements of the Technical Unit and STEFI approaches (agents within the municipal staff compared to subcontracting to a specialised agency), there are three other key differences which require examination. These raise questions about exactly what forms of support communities require and what combination of actors can provide and finance this support. Analysing the costs and financing of these support approaches also reminds us of the importance of the other recurrent costs of water services at local levels and how they are shared, which leads into the next section of this chapter.

However, the first area of difference between the approaches is in the actual support activities undertaken themselves. Table 6.1 lists the typical activities which can be provided as part of direct support arrangements, based on those identified by Smits et al. (2011) and WaterAid's *Sustainability Framework* (WaterAid 2011b). The table then compares the activities which form part of the work of the municipal Technical Units supported by WaterAid to the activities performed in the STEFI approach. The chief role of the STEFI system is as a monitoring service to provide information and recommendations to service providers and municipalities, concerning the technical functioning of water systems and the financial performance of the operators (Faggianelli et al. 2009). As is clear from Table 6.1, the mandate of STEFI is more limited than the Technical Units. The Technical Units also undertake the activities of monitoring, technical advice and administrative support, but in addition perform a number of further possible support functions too. For example, some provide more intensive support to community management committees over issues such as conflict resolution, refresher training courses, legal registration and contract administration, and contributions to some recurrent costs such as capital maintenance expenditures.



Table 6.1. Types of support to community management

	<b>WaterAid: Municipal WASH Technical Units</b>	<b>National policy: STEFI (Technical and Financial Monitoring System)</b>	<b>National policy: Regional and sub- regional water directorates, collaborating with municipalities</b>
<i>Activities performed as part of direct support (Smits et al. 2011; WaterAid 2011b):</i>	For all “modern water points” in rural areas: handpumps, “modern wells”, small piped systems	For small piped systems only, hoped to extend to handpumps (Faggianelli et al. 2009)	For handpumps and “modern wells” until these are integrated into STEFI system
Monitoring of water service	Y	Y	Y
Technical advice on operation and maintenance	Y	Y	Y
Administrative support e.g. help with tariff-setting	Y	Y	Y
Organisational support e.g. legal and contract advice	Y		
Conflict resolution	Y		
Support in capital maintenance	Y	Government after 20 years	Government after 20 years
Training and refresher courses	Y		
Provision of information e.g. guidelines and manuals	Y	Y	Y
Resource mobilisation e.g. helping communities raise funds for recurrent costs	Y		
Support to supply chains	Y		
Additional support to ‘externalities’ such as environmental change	Y		
<i>Approx. cost per user per year (US\$ 2011):</i>	0.5-1.4	0.34	Unknown

The second key difference between the WaterAid-supported approach and the STEFI system is in their scale and their scope in terms of the types of water supply infrastructures supported. The municipal Technical Units in WaterAid's areas of intervention support the management of all types of "modern" water supply systems in rural areas, including concrete-lined wells, boreholes fitted with handpumps, and small piped systems.<sup>38</sup> However, as discussed above, the approach of municipal Technical Units as a form of direct support has been introduced by WaterAid into only three municipalities so far. Similar forms of support are provided in the other 12 rural municipalities where WaterAid works, but these are through a local partner NGO rather than via agents of the municipality.

In contrast, the STEFI approach covers a much wider geographic area but only provides support to small piped systems within these areas, not other types of water supply. The national strategy intends for the system to be extended to cover handpumps in future, but the mechanism for doing this has not yet been determined (DNH 2007; Faggianelli et al. 2009). In the meantime, the equivalent functions of STEFI for handpumps and unserved areas are supposed to be provided by regional and sub-regional offices of the water directorate, in collaboration with municipalities (DNH 2007, 2012). However in practice this is extremely limited because of the lack of staff in sub-regional and municipal levels (World Bank 2008; Koestler and Toubkiss 2010), as discussed in Chapter Five.

The third area of difference relates to the costs and financing of the two approaches. In the four municipalities supported by WaterAid for which cost data was analysed, the Technical Units cost from US\$ 0.5 to US\$ 1.4 per person per year (the process of analysing these expenditures and other recurrent costs is discussed in more detail in the next section). The costs per user are sensitive to the population of the municipality since the absolute cost of each Technical Unit is similar. This does highlight the potential for sharing the costs of support between different municipalities to benefit from economies of scale. This approach is called "*intercommunalité*" in Mali and is recognised as an option in national policy. WaterAid has already trialled this in the adjacent municipalities of Tioribougou and Kolokani, which share a coordinator for the WASH Technical Unit. In all these municipalities these costs are currently funded through direct budget support to the municipalities from WaterAid (or in one of the case study municipalities, still through a local NGO partner). In

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<sup>38</sup> These are the types of water sources defined as acceptable for drinking water use in Mali, referred to as "modern water points" (DNH 2007).

contrast, the STEFI system costs US\$ 0.34 per person per year, a lower figure than the Technical Units because of its more limited mandate and less intensive form of support. This cost is financed from part of the user tariff for water with further contributions from the municipalities and government (Smits et al. 2011).

These figures illustrate the tension between what forms of support the different possible approaches can provide, and what can be financed from within the Mali sector itself i.e. from taxes and tariffs according to “the 3Ts” framework (OECD 2009), rather than ‘transfers’ (funding from international donors such as WaterAid). Recent international benchmarks proposed by the WASHCost project suggest that expenditure of US\$ 1-3 per person per year is required for the direct support necessary for sustainable basic rural water services (WASHCost 2012). Therefore in the smaller municipalities where WaterAid’s approach was used in this study (costs up to US\$ 1.4 per person per year) the expenditures for the WASH Technical Units are within the WASHCost benchmarks. The costs of the STEFI system are below the proposed WASHCost benchmarks, but, as discussed above, the STEFI approach has a more limited mandate than a full system of direct support which encompasses all the possible activities.

Therefore a debate is required in Mali about what combination of direct support activities is really needed and how these can be financed. The proponents of the STEFI system have suggested that it is not a question of whether to extend the approach to all municipalities and other types of water points, but rather how to do so (Faggianelli et al. 2009). However, interviewees in the sector noted that significant practical challenges remain. For example, one STEFI team is suggested to cover 50 to 100 municipalities. Even if the national water directorate organises a tender process in order to shortlist private operators intended to cover certain regions, the Mayor of each municipality is still required to sign the contract for that municipality. Historically, some Mayors have been dissatisfied with the choice of operator or the actual results (interviews with water ministry and donor officials 13 Jan and 14 Feb 2011). The information provided by STEFI is of limited use if it is not acted upon, either by those involved in the day-to-day management of water services, the municipality itself, or by higher-level sections of the water directorate. Although the assessments of the performance of the STEFI system so far suggest that overall it has helped improve the functionality of the services it covers (Faggianelli et al. 2009), as explained above this only applies to small piped systems, so the approach’s potential to improve the sustainability of

services from handpumps is difficult to assess.

Similarly, since the WaterAid approach of municipal Technical Units only covers a small number of municipalities, it is hard to assess the impact of this more intensive and costly approach. As I discuss in the next section, the experiences of WaterAid's partners so far suggest that the success of the Technical Unit approach to direct support may depend in particular on the factor of sharing the recurrent costs of operation and minor maintenance expenditure and capital maintenance expenditure and how this issue is addressed.

These observations of WaterAid's approach and other arrangements for providing support to community management can be considered in relation to the analytical framework and how we understand institutional change. In the first half of this chapter, when examining WaterAid's work in helping local governments plan and finance new infrastructure, I argued that there was a tension in the organisation's approach between the ideas of mainstream institutionalism and critical institutionalism. Now that I have also compared WaterAid's model for municipal support to community management with other forms of post-construction support, it is possible to see further elements of both mainstream and critical institutionalist thinking.

For example, I have shown that WaterAid tries to create municipal Technical Units which provide all the elements of support proposed by Smits et al. (2011) and WaterAid (2011b), at a cost roughly in line with the expenditures that international benchmarks suggest are required for supporting rural water services. However, this attempt to set up a new institutional arrangement starts from a position where almost nothing existed before, in terms of local government capacity for supporting water services, and requires financing beyond what the Mali water sector can currently provide. These observations suggest that WaterAid adopts an over-optimistic mainstream institutionalist approach to creating new, formal institutions, rather than more gradually building on what exists locally, even if this is limited.

Yet there are still aspects of critical institutionalism within this approach: WaterAid is trying to support the role of municipalities as actors who can promote problem-solving within their local contexts (as described by Booth 2012). In contrast, although the STEFI system does not try to do everything at once, it is less focused on local problems: it imposes on

local governments a system which they do not always agree with, and which does not take into account all forms of rural water services (such as handpumps).

### **How recurrent costs are shared**

In this section I extend the analysis of recurrent costs to include operating and minor maintenance expenditure and capital maintenance expenditure, in addition to the costs of direct support introduced in the previous section. As I explained in the previous chapter, official government policy specifies that users should pay for maintenance, management, replacing parts less than 20 years old, technical and financial monitoring, and any relevant taxes (DNH 2007), which corresponds to the recurrent cost categories of operating and minor maintenance expenditure, capital maintenance expenditure and some direct support costs (Fonseca et al. 2011). However, despite this policy that users are responsible for all costs for up to 20 years, national strategy also states that the government and municipalities themselves should make some provisions for supporting “partial renewal of some facilities with less than 20 years of life” (DNH 2007: 44). Therefore national policy is still ambiguous about when exactly the municipality or central government can or should contribute to the costs of renewal or replacement. This lack of clarity is also reflected in debates between representatives of WaterAid’s partners about how to define different categories of recurrent costs for rural water infrastructure, and which actors should pay these. I discuss this in more depth in Chapter Seven in relation to how WaterAid’s partners work with different communities to determine user contributions to recurrent costs.

Given these ambiguities about who should pay for different elements of the recurrent costs of rural water services, in this section I draw on data from four municipalities where WaterAid works to present empirical evidence of how much is really spent on recurrent costs and how these costs are shared between different actors. These data are shown in Table 6.2. The analysis does not consider costs which occur at national levels (i.e. indirect support costs such as the national water directorate or WaterAid’s country office; or the cost of capital). Costs are presented as ranges of minimum to maximum expenditures observed in the four municipalities, in line with the guidelines for data presentation from the WASHCost project. The table also identifies the key actors contributing to each cost component, to show the observed mix of “the 3Ts” of financing sources used (OECD 2009),

as introduced in Chapter Two: ‘tariffs’ (all forms of user contributions), ‘taxes’ (expenditure from local and national government budgets raised from domestic taxation), and ‘transfers’ (funding which ultimately comes from international donors).

The data are presented for the period 2008-2011 for both practical and theoretical reasons. Methodological guidance from the WASHCost project suggests that it is difficult to obtain accurate cost data going back further than three years, and that the extra effort involved in seeking data from longer historical period may not be justified in terms of the quality of the data. For research reasons, 2008 was also the most appropriate starting point for data analysis because this was the year in which WaterAid started a direct partnership approach (involving local direct budget support to the municipality) in three of the four municipalities (Dandougou Fakala, Kolokani and Tioribougou). In the fourth municipality, Dialakoroba, WaterAid still works through a ‘tripartite’ formula where it partners with a local NGO and the municipality. In the municipalities except Dandougou Fakala, the process of ‘marketing’ their Sector Development Plans to seek funding from other donors also began in 2008.

Table 6.2. Expenditure on recurrent costs for rural water services in four municipalities<sup>39</sup>

<b>Cost component</b>	<b>Key elements of the cost component in this context</b>	<b>Approximate expenditure range, 2008-2011 (US\$ 2011 per person served per year)</b>	<b>Key actors contributing to this expenditure</b>
<b>Operating and minor maintenance expenditure (OpEx) - for handpumps</b>	Operating costs, maintenance and repairs which typically occur at least once every year at a cost up to US\$ 100 per intervention.	< 0.1 in all municipalities.	Usually the users, with occasional contributions from NGOs i.e. a mix of tariffs with some transfers.
<b>Capital maintenance expenditure (CapManEx) - for handpumps and “modern wells”</b>	Costs which go beyond routine maintenance or small repairs, typically occurring less frequently than every year and costing more than US\$ 100 per intervention. Includes renewal, replacement and rehabilitation of infrastructure.	0.1-1.6 The expenditure in each municipality is dependent on the timing of donor and government projects to rehabilitate old infrastructure.	Although users are supposed to pay for capital maintenance within a theoretical 20 year lifespan of any infrastructure, in practice most interventions are by NGOs or central government, or sometimes municipalities with WaterAid’s budget support i.e. a mix of transfers and some taxes.
<b>Expenditure on direct support (ExpDS) - for handpumps, “modern wells” and small piped systems</b>	The costs of a WASH Technical Unit of 1-2 staff (salaries, transport, office expenses) to support the planning, implementation and monitoring of WASH services, either as part of the municipality’s staff (where WaterAid gives direct budget support) or as local NGO staff.	0.5-1.4 Each Technical Unit has similar absolute costs, so the per capita costs are sensitive to the population of the municipality.	WaterAid i.e. transfers – either through direct budget support to the municipality in the direct partnership model, or through a local NGO partner. This support is for sanitation and hygiene in addition to water.

<sup>39</sup> The details of the calculations used are given in Appendix 3. In line with the suggestion of the WASHCost project, recurrent costs are rounded to one decimal place, where decimals are used (Burr et al. 2012).

I discussed in the previous section the costs of direct support and how they compare to other approaches in Mali and international benchmarks. Here I also briefly analyse the findings on costs and financing of operating and minor maintenance and capital maintenance expenditure; these are discussed in greater depth in relation to the role of users themselves in Chapter Seven. The expenditures observed for all three of these different cost components are presented in Table 6.3 and compared to national guidelines and international benchmarks.

*Table 6.3. Comparison of expenditure to national guidelines and international benchmarks*

<b>Cost component</b>	<b>Cost ranges (US\$ 2011 per person served per year)</b>		
	<b>Expenditure in four municipalities in this study (2008-2011)</b>	<b>National guidelines in Mali (DNH 2003)</b>	<b>International benchmarks (WASHCost 2012)</b>
<b>Operating and minor maintenance expenditure (OpEx) – for handpumps</b>	< 0.1 in all municipalities	0.4	0.5-1
<b>Capital maintenance expenditure (CapManEx) - for handpumps and “modern wells”</b>	0.1-1.6	0.5 (for handpumps, excluding eventual replacement after 20 years)	1.5-2 (for handpumps)
<b>Expenditure on direct support (ExpDS) - for handpumps, “modern wells” and small piped systems</b>	0.5-1.4 (including some support to sanitation)	N/A	1-3 (for handpumps or piped schemes)

As explained above, users are supposed to pay all the costs of operation and maintenance and capital maintenance for rural water services within a theoretical 20 year lifespan of any



infrastructure, according to national policy (DNH 2007). National guidelines (for boreholes fitted with handpumps) indicate that this entails users contributing about US\$ 0.9 per person per year to cover operation and maintenance (about US\$ 0.4 per person per year) and capital maintenance (about US\$ 0.5 per person per year). After 20 years it is assumed that full rehabilitation of the infrastructure is required and will be paid through central government programmes (this element of capital maintenance is therefore not included in the guideline figures for user payments) (DNH 2003).

The international cost benchmarks identified by the WASHCost project (also for boreholes fitted with handpumps) are that a basic level of service requires in the range of US\$ 0.5-1 per person per year for operation and minor maintenance and US\$ 1.5-2 per person per year for capital maintenance expenditure. The national Mali guidelines for operation and maintenance and capital maintenance expenditures are lower than these international benchmarks, which suggests that there is already an increased risk of lower service levels than intended (WASHCost 2012). However, the actual expenditures by users on operation and maintenance and capital maintenance costs in this study are significantly less than even the national guidelines. Possible reasons for the low operation and maintenance expenditure in comparison to national guidelines are a willingness by users to use alternative unimproved sources, and a lack of expenditure on preventative maintenance. These are also factors in the low capital maintenance expenditures paid by users. I analyse these issues in much greater depth in Chapter Seven as part of the discussion about the role of users in financing water services.

However, there is also a further possible factor affecting capital maintenance, which is the ambiguity over who should pay for capital maintenance expenditures explained above. The only municipality which showed capital maintenance expenditure of more than US\$ 0.7 per person per year in this study was a municipality which had received an extensive handpump rehabilitation project in 2010, which was government-run and donor-funded rather than using funds from users. I discuss this example further in the next section in relation to the importance of capital maintenance expenditure for sustainability.

#### 6.4. Levels of functionality in the case study municipalities

The functionality survey of all water points (explained in Chapter Four) allows the identification of levels of coverage and functionality in the four key case study municipalities considered in this chapter, in order to analyse possible links between approaches to sharing recurrent costs and the sustainability of rural water services. (The research considers the actual usage of different water points by users in the case study villages used for more in-depth analysis in Chapter Seven.)

The functionality rates in the four municipalities are shown in Table 6.4, firstly considering all “modern water points” according to national norms (DNH 2007), and then boreholes fitted with handpumps separately.<sup>40</sup> Before discussing functionality, it is important to note that although the estimated coverage is above 90% based on national norms in each municipality, many “modern wells” in Mali actually have no cover or have a cover which is often left open by the users. Therefore they do not always conform to the international definition of a protected dug well as an improved source used by the Joint Monitoring Program (JMP). The estimated coverage would fall in each municipality if the strict JMP definition was used, although in Kolokani, Tioribougou and Dialakoroba the estimated coverage would still be 80% to 90% even if all dug wells were discounted. The municipality of Dandougou Fakala would show the largest drop in coverage under this method, to as low as 50%.

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<sup>40</sup> The percentage of the population covered was calculated on a village-by-village basis according to the national norms for the maximum number of people who can be served by each type of water point, the number of each type of water point in the village, and the village population. The village-level data was then aggregated to produce the table.

Table 6.4. Coverage and functionality of water points in four case study municipalities (survey data November 2011)

Municipality	Population (approx)	Estimated coverage	Functionality rate	
			All “modern water points” according to national norms	Boreholes fitted with handpumps only
Dandougou Fakala	10,000	99%	59%	90%
Kolokani	39,000	95%	74%	64%
Tioribougou	14,000	93%	81%	78%
Dialakoroba	19,000	100%	86%	88%

Note: “modern water points” refers to public tapstands in small piped systems, boreholes fitted with handpumps, and concrete-lined wells (based on DNH 2007).

When examining the functionality rates for handpumps, it appears that the rates are higher in the municipalities of Dandougou Fakala and Dialakoroba (both about 90% functional) than in the other two municipalities, which are both below 80%. I argue that the approaches to capital maintenance in the period 2008-2011 may help explain the higher rates. In Dandougou Fakala, as discussed in more detail in Chapter Seven, the WASH Technical Unit has adopted a much more structured approach to organising expenditure and the sharing of costs for operation and maintenance and capital maintenance between the users and the municipality. This approach has attempted to develop a clearer local interpretation of the ambiguous national policy. The Technical Unit reports that the introduction of this method since 2008 has gradually helped encourage users to pay their contribution to repairs and therefore to reduce downtime of infrastructures. However, for the moment the approach is still reliant on funds which are part of the direct budget support from WaterAid to the municipality, and it is not clear where the municipality might be able to access financing for these costs without the support of WaterAid.

The approach of the Technical Unit in Dandougou Fakala again highlights how WaterAid and

its partners draw on ideas of both mainstream and critical institutionalism. The Technical Unit has attempted to mix some elements of the national policy with what it sees as realistic based on its knowledge of communities in its own municipality, an approach in line with a critical institutionalist view on institutional change. Yet despite this hybrid approach of trying to solve local problems in a way which responds to policy incoherence and builds on existing cultural practices, in some ways it is different to the examples of “practical hybridity” in the governance of public goods used by Booth (2012) and described in Chapter Three. Booth argues that such examples have tended to emerge independently of external interveners, and are not reliant on external funding. Yet the case of Dandougou Fakala is only possible because of the funding WaterAid provides for the staff of the Technical Unit itself, and as some discretionary budget for the Unit to use as part-funding for repairs to water infrastructure.

In Dialakoroba, the high functionality rate seems to have been strongly influenced by an extensive government-run and donor-funded handpump rehabilitation project in the municipality in 2010. Over one third of the handpumps in the municipality were rehabilitated during this one project. Therefore the high functionality rate in Dialakoroba may be more due to a recent one-off series of capital maintenance expenditures rather than a more systematic approach. Overall, the functionality rates across the four municipalities suggest that the recurrent expenditures observed in the period 2008-2011 do not yet lead to a sustainable basic service level.

## **6.5. Conclusions**

In this chapter I analysed the two key roles of local governments in Mali for rural water services and the associated financing challenges: expanding coverage and helping support community management for sustainable services. WaterAid’s work on developing the capacity of municipalities to raise funds themselves from other sources focuses on financing the costs of capital expenditure, even in municipalities where levels of coverage are already at or close to 100%. This raises issues of both sustainability and equity in rural water services. In municipalities with high coverage, sustainability becomes a problem without sufficient attention to capital maintenance expenditure and the costs of direct support. Supporting these municipalities in raising further capital investment costs also poses challenges of

equity between different municipalities because there are other local government areas which have lower coverage rates and therefore have greater need for investment in capital expenditure.

I also presented two different approaches to providing direct support to rural water service providers in Mali: the model of municipal WASH Technical Units promoted by WaterAid, and the privately-operated STEFI system proposed in national policy. These approaches differ in the range of support activities they perform; their geographic scale and scope in terms of the type of infrastructure covered; and their costs and financing. Therefore greater national-level debate is required about which aspects of support to service providers are most important, especially to community-based management of handpumps, and what combination of actors can provide and finance this support.

WaterAid and its partners need to pay closer attention to the costs and financing arrangements involved in order to more clearly examine the long-term political feasibility of the model of local government direct support to rural water services that they promote. The analysis presented here shows that the current costs of the model promoted by WaterAid are of a similar order of magnitude to the successful models of direct support for which evidence exists from other countries (Smits et al. 2011; WASHCost 2012). However, these costs may be too much for local governments in Mali to bear or fundraise themselves in the foreseeable future. Therefore WaterAid could consider further the potential for *“intercommunalité”* i.e. sharing the costs of support between different municipalities to benefit from economies of scale. This is recognised as an option in national policy and WaterAid has already trialled this in two adjacent municipalities where it works. Further analysis was presented of how the recurrent costs of operation and minor maintenance expenditure and capital maintenance expenditure are shared within WaterAid’s areas of work, as part of direct support to community management. It emerged that there are differing local interpretations of national policy regarding the definition and responsibility for paying capital maintenance expenditure, which I explore further in the next chapter.

The observations presented in this chapter can be understood through the analytical framework developed for this thesis, in particular by considering the processes of institutional change that are illuminated by examining the role of local governments in rural water services. As I have argued, the municipal level is where the three areas of work on

institutional change used in the framework come together to help understand how the institutions in place for delivering public services have emerged and might be influenced. The evidence shows that WaterAid's approach contains elements of both mainstream and critical institutionalist thinking. Firstly, the organisation promotes formal institutional arrangements within local government (municipal Technical Units for water and sanitation), with related processes such as Sector Development Plans and 'marketing' which demonstrate the challenge of "reforms as signals" (Andrews 2013), where the appearance of institutional reforms is greater than the actual results. However, there is some evidence that the Technical Units themselves do seek forms of local problem-solving which build on existing culture and practices. In this way they implicitly adopt a critical institutionalist view and actively promote "institutional bricolage" (Clever 2012), a process which I discuss in greater depth at community level in Chapter Seven.

## **Chapter Seven - The role of users in paying for access to rural water services**

### **7.1. Introduction**

In this chapter I use empirical evidence to address the role of water users themselves, developing an understanding of how much rural communities contribute to the costs of water services and how users pay. In Chapter Six I briefly discussed the contributions of users to the costs of operation and minor maintenance and capital maintenance expenditure in four municipalities; in this chapter I analyse these payments in greater detail through household interviews and surveys, village-level case studies, and additional quantitative data from a further 11 municipalities. I examine the different mechanisms used for raising money to pay for water services and how these practices have emerged, especially collective fundraising arrangements by water management committees and other community groups.

This evidence enables the actual payments made to be compared to the contributions and payment practices promoted by government and NGO policies. I analyse these differences in relation to the extended political economy framework and the possible ways of understanding institutional change. This involves using the ideas of critical institutionalism introduced in Chapter Three to understand community fundraising itself and how WaterAid and its partners interact with communities. In this way the analysis contributes lessons to the second and third research themes, concerning the implications for community management approaches, decentralised support, and the role of NGOs in promoting pro-poor sustainable financing.

As discussed in Chapter Six, the primary focus of the research is on water services provided from community water points: tapstands which are part of small piped networks, boreholes fitted with handpumps and “modern wells”. These are the sources available in rural areas which are considered as acceptable for drinking and domestic water by national policy (DNH 2007). Of these, I focus on boreholes equipped with handpumps because evidence suggests that it is services provided by these types of water points that experience the greatest challenges to long-term sustainability (DNH 2008a). However, as discussed in Chapter Two, I also consider projects in Mali which have sought to promote self-supply of improved hand-dug wells owned by households as an alternative form of access to water. By

examining data regarding the different types of water source used, I am also able to make an assessment of the levels of service received by users that are associated with the cost-sharing arrangements observed.

## **7.2. Comparing national policy and actual practice**

In this section I examine how much communities contribute to the recurrent costs of rural water services, and how they pay. As previously explained, I focus on handpumps because of their known problems of poor sustainability (DNH 2008a). I first present the cost contributions proposed by national policy and NGO guidelines in Mali to show how much users are supposed to pay. I then use survey data from all water points (over 1300 in total) in the 15 rural municipalities where WaterAid works to provide further estimates of the actual annual expenditures made by communities on the recurrent costs of handpump operation, minor maintenance and capital maintenance (as a way of triangulating the estimates in Chapter Six, which were based on data held by key informants such as pump mechanics, rather than users' own responses). As the 2008 public expenditure review of Mali's rural water and sanitation sector by the World Bank states, "there are no studies making it possible to evaluate up to what point the beneficiaries really pay for water and up to what point savings are made to deal with maintenance, repairs and the renewal of equipment" (World Bank 2008: 31). This chapter helps to address this gap and respond to the first research theme of how costs are shared between different actors, focusing on users themselves.

The evidence presented demonstrates the clear differences between user contributions in policy and practice. I show further disparities between policy and practice regarding the ways in which communities pay their contributions, for example whether they pay directly per container filled, via a regular tariff, or by contributing to collections after a breakdown has occurred. I also compare the typical approaches used for paying for water from handpumps to the payment modes used for public tapstands (as part of small piped systems) and "modern wells". I conclude this section by showing the extent to which communities are able to pay for repairs to handpumps and other types of water supply associated with these payment amounts and mechanisms. In the subsequent parts of this chapter I go on to discuss how WaterAid's partners try to bridge these differences between policy and practice,



and what can be learnt from communities that are identified as more successful in their approaches to fundraising.

### **National policy**

As explained in Chapters Five and Six, official government policy in Mali specifies that users should pay for maintenance, management, replacing parts less than 20 years old, technical and financial monitoring, and any relevant taxes (DNH 2007). Users are also supposed to pay a contribution equivalent of up to 2% of the capital costs (depending on the type of infrastructure) at the time of construction. However this contribution is not actually used as part of the initial investment; instead, the money is intended to become the beginnings of the fund for operation and maintenance costs (DNH 2007). These costs correspond to the components of operating and minor maintenance expenditure and capital maintenance expenditure set out by Fonseca et al. (2011).

More detailed guidelines also exist to help communities plan for these costs of operating, maintaining and rehabilitating boreholes fitted with handpumps. The table below shows the annualised costs estimated by the National Water Directorate (DNH 2003) and Global Water Initiative (GWI 2011) for the India Mk II handpump (the most common type of handpump in rural Mali). Costs are quoted in the FCFA figures used in each set of guidelines, followed by the total equivalent figures in US\$ 2011 to account for inflation since the DNH guidelines were published.<sup>41</sup> Both sets of guidelines intend that all these costs are paid by the users, in line with the national policy.

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<sup>41</sup> Based on World Bank deflators and market exchange rates for Mali.

Table 7.1. Estimated annualised costs of operation and maintenance (OpEx) and capital maintenance (CapManEx) of India Mk II handpumps in Mali (adapted from DNH 2003 and GWI 2011)

	Annual cost (FCFA)	Annual cost (FCFA)
	Based on DNH (2003)	Based on GWI (2011)
Manager fees (for daily management)	As agreed by users	48,000
Operational costs of management body (stationery, travel etc.)	24,000	22,000
Spare parts	15,000	42,000
Technician fees (for maintenance visits)	20,000	10,000
<i>Total operation and maintenance (OpEx)</i>	<i>59,000</i>	<i>122,000</i>
<i>Total capital maintenance (CapManEx)</i>	<i>70,000</i>	<i>55,000</i>
<b>Total annual cost (OpEx + CapManEx)</b>	<b>129,000 + agreed manager fees</b>	<b>177,000</b>
Equivalent figures converted to US\$ 2011:		
<i>Total operation and maintenance (OpEx)</i>	162	241
<i>Total capital maintenance (CapManEx)</i>	192	109
<b>Total annual cost (OpEx + CapManEx)</b>	<b>354 + agreed manager fees</b>	<b>350</b>
<b>Total annual cost (OpEx + CapManEx) per user, based on the national norm of 400 users per handpump</b>	<b>0.9</b>	<b>0.9</b>

Note: The figures for capital maintenance are annualised costs. Capital maintenance costs are typically regarded as expenditures which occur less frequently than annually, but must be saved for each year so that the money is available when these expenses are needed.

Official guidance from DNH (2003: 6) states that payment for water from handpumps should be via a regular tariff or direct payment at the pump according to volume used. Although the national strategy aims to encourage payment per volume drawn (typically according to the size of the collection vessel), the guidance for management of handpumps

acknowledges that it is often impractical in rural areas because of the difficulties faced by users in having daily access to cash. Therefore the option of a regular tariff (typically each month) is also approved, as long as it has been calculated to cover all operation, maintenance and replacements necessary. A flat rate tariff is also supposed to have the advantage of encouraging users to use as much water as they need for a healthy and hygienic lifestyle, without being concerned about the marginal cost of the water they access (DNH 2003). Organising collections after a breakdown or using collective village activities such as a common field are not approved as methods of paying for water because they are considered too unreliable.

### **Actual practice**

Water point survey data from 15 municipalities can be used to show the actual contributions made by user communities and how users pay. For each handpump surveyed, community representatives were asked to estimate the average total annual expenditure made by the community. (The survey team did not ask this question to users of small piped systems or wells, due to an omission by the consultants conducting the survey). Estimates were reported for only 39% of handpumps surveyed. This low response rate is likely due to a combination of factors: difficulties in finding someone in the community who could respond, a lack of record-keeping, and possibly some instances where expenditure was zero but classified as unreported. Results are shown in Table 7.2.

*Table 7.2. Reported typical annual expenditure on recurrent costs for handpumps (survey November 2011)*

<b>Total no. of handpumps surveyed</b>	<b>No. of handpumps where typical annual expenditure was reported</b>	<b>% of handpumps where typical annual expenditure was reported</b>	<b>Mean (FCFA)</b>	<b>Median (FCFA)</b>	<b>Minimum (FCFA)</b>	<b>Maximum (FCFA)</b>
447	176	39%	47,000	36,000	2,500	260,000

Both the mean (47,000 FCFA, or about US\$ 94) and median (36,000 FCFA, or about US\$ 72) annual amounts paid by communities are significantly less than those considered necessary by the DNH or GWI guidelines presented above, representing costs per person of around US\$ 0.2 per year. Given the large number of non-responses which likely includes some instances where expenditure was zero, the averages probably represent an upper bound on the actual annual expenditures made by communities on recurrent costs. The more detailed assessment undertaken in the four municipalities discussed in Chapter Six suggested that expenditures on operating and minor maintenance were up to US\$ 0.1 per person per year during the period 2008-2011 (with users only contributing to capital maintenance expenditure on extremely rare occasions). Taking these two sets of figures together suggests that user contributions to recurrent costs, where contributions occur, are up to the range of US\$ 0.1 to US\$ 0.2 per person per year.<sup>42</sup>

These reported annual expenditures of 36,000 FCFA to 47,000 FCFA could possibly cover the costs considered necessary for basic spare parts and the fees for occasional visits by a technician (approximately 35,000 FCFA to 52,000 FCFA according to the two sets of guidelines). However, these amounts would be insufficient to include general day-to-day management fees or the annual contribution needed for capital maintenance expenditure. At only 3 out of the 447 handpumps did users report paying at least the 177,000 FCFA (about US\$ 350) annual costs suggested by GWI guidelines. I discuss in more detail in Section 7.4 how communities identified as more successful at fundraising by WaterAid's partners actually raise this money. However, I also note that 'success' is understood by WaterAid's partners more often to mean that communities are able to raise sufficient funds for operating and minor maintenance expenditure (up to about 50,000 FCFA or approximately US\$ 100 per year) than it is to imply that communities can contribute the annual amounts greater than 100,000 FCFA required to cover capital maintenance expenditure as well. I describe these views in more detail later in this chapter, drawing on participatory workshops with representatives of WaterAid's partners.

Table 7.3 shows the methods used by communities to pay their contributions to the recurrent costs of water services. In addition to boreholes fitted with handpumps, data is included for "modern wells" and public tapstands which are part of small piped systems because these provide a useful comparison of how methods vary in part according to

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<sup>42</sup> In line with WASHCost, recurrent costs are rounded to one decimal place (Burr et al. 2012)

different types of water point.

*Table 7.3. Methods of paying for water (survey data November 2011)*

	<b>n</b>	<b>Direct sale at water point</b>	<b>Regular tariff</b>	<b>Collection after breakdown</b>	<b>No contribution</b>	<b>No response</b>
Public tapstand from small piped system	297	76%	12%	4%	5%	3%
“Modern well”	598	1%	7%	13%	44%	36%
Handpump on borehole	447	10%	16%	49%	11%	14%

Only for public tapstands connected to small piped systems do the majority of users pay via the nationally-approved methods of direct sale per volume collected or a regular tariff. For “modern wells”, 80% of responses were “no contribution” by the community or “no response”, because actual maintenance expenditure for wells is very rare. For handpumps, only about a quarter of responses were the nationally-approved methods: 10% via direct vending per volume at the water point and a further 16% paying a regular tariff. At around half of handpumps, payment occurs only after a breakdown when a collection is made for the repair costs. For the final 25% of handpumps, responses were “no contribution” by the community or “no response”.

This examination of actual practices shows that only a tiny minority of communities raises the funds proposed by national policy guidance to ensure the operation, minor maintenance and capital maintenance of handpumps, and that the nationally-approved payment mechanisms are used at only 26% of handpumps. What are the associated results in terms of the ability of communities to ensure that any necessary repairs are funded and paid for in a timely manner? Table 7.4 shows the different severities of repairs that can be covered by user contributions at different water points.

Table 7.4. Levels of repairs that are covered by user contributions (survey data November 2011)

	n	All repairs	Only small repairs	No repairs at all	No response
Public tapstand from small piped system	297	64%	21%	5%	11%
“Modern well”	598	1%	18%	45%	36%
Handpump on borehole	447	18%	52%	7%	23%

Table 7.4 shows that at only 18% of handpumps surveyed do the contributions made by communities cover all repairs, as national policy requires them to. A further half of communities are able to cover small repairs.<sup>43</sup> As a comparison, respondents at almost two thirds of public tapstands on small piped systems reported that user contributions covered all repairs. At only 5% of public tapstands did users report making no financial contributions and therefore not being able to pay for any repairs themselves. WaterAid’s partners suggest from experience that users of public tapstands in general have a higher willingness to pay for a combination of different reasons. Firstly, small piped networks are generally only installed in large villages of 2,000 people or more, where users tend to have higher incomes. This is a plausible argument although I do not have evidence to support it beyond the observations of WaterAid’s partners. Secondly, piped networks are relatively more common in rural areas in the north of Mali, where there are fewer hand-dug wells and therefore fewer alternative cheaper or more convenient sources than in the south of the country. Table 7.4 also shows that respondents at about 80% of “modern wells” stated that users did not cover any repairs, or gave no response; as explained above, this is probably because maintenance expenditure for wells is rare.

As a further insight into user responses to breakdowns, WaterAid’s partners were asked to

<sup>43</sup> For the purposes of this survey, “small repairs” were defined according to the perception of the respondent. However, since this is the only category between “all repairs” and “no repairs at all”, “small repairs” effectively means “some repairs”. The issue of defining different types of repairs and the associated costs is discussed in more detail in Section 7.3 in relation to the role of WaterAid and its partners.

estimate, based on their experience, how long it took each community where they worked to pay the user contributions to the cost of repairs after a breakdown of a water point (this question was not included in the wider water point survey). As discussed above, the majority of communities do not cover all the costs they are supposed to according to national policy and guidelines. Therefore the figures in Table 7.5 refer to the time taken to pay a contribution which may be partial and supplemented by another actor in order to cover the full costs required.

*Table 7.5. Time taken for villages to pay their contribution to repairs after a breakdown (WaterAid partner estimates, July 2011)*

<b>Time taken for a community to pay their contribution to repairs after a breakdown of a water point</b>	<b>Estimated percentage of villages (n=203)</b>
Less than one week	33%
One week to one month	33%
More than one month	34%

The figures in Table 7.5 are estimates, rather than being based on full survey data, but they provide a further angle on the problem of relying on user contributions for maintenance expenditure. There is no official policy in Mali on acceptable levels of downtime for water points, but Carter et al. (1999b) suggest a maximum of 2% of the time, equivalent to seven days per year. If the estimates from WaterAid’s partners are accurate, then about two thirds of villages in their areas of intervention would fail this benchmark. Even if the assumption in these estimates that most communities manage and raise funds for all the different points in their village together, rather than using a separate committee for each water point, is reasonable, it still raises the question of how downtime of a particular water point affects the service levels received by users. Do users travel further to another improved source? Or do they use an alternative unimproved source of lower water quality? I discuss these issues further in Section 7.6. In the next section I turn to how WaterAid and its partners address the other challenges raised here, concerning what contributions communities can realistically be expected to make and what costs should be supported by other actors.

### **7.3. The role of WaterAid and its partners**

In this section I examine how WaterAid and its partners respond to the differences between policy and practice in terms of user contributions to rural water services presented in the previous section. Although WaterAid and its partner NGOs and local government Technical Units in theory align themselves with the national policy that users are responsible for the recurrent costs of operating and minor maintenance expenditure and capital maintenance expenditure, in practice they acknowledge the evidence presented in this chapter, that the majority of communities are either not able or not willing to pay the necessary contributions required to cover all repairs to handpumps. WaterAid and its partners therefore acknowledge that they are trying to support a level of service which is above the effective demand level of the users. Surveys and discussions in workshops with representatives of WaterAid's partners showed that they generally consider that repair costs in the range 20,000 FCFA to 50,000 FCFA (about US\$ 40 to US\$ 100) per water point should be paid by users, on the understanding that such repairs are required up to once per year. This broadly corresponds to the evidence presented in the first part of this chapter, that in cases where communities do report contributing to operation and maintenance, the annual upper bound on these contributions is 36,000 FCFA to 47,000 FCFA (about US\$ 72 to US\$ 94).

However, only one of WaterAid's partners, the Technical Unit in the municipality of Dandougou Fakala, has defined a more specific figure for the expected level of community contribution and how this relates to the roles and responsibilities of other actors, an approach that I briefly introduced in Chapter Six. In this municipality the Technical Unit, which is supported by WaterAid, has agreed with communities that users should pay up to 40,000 FCFA (about US\$ 80) for each repair needed. If a repair is more expensive than this, then the municipality (using its budget for water and sanitation which is provided by WaterAid) will cover any costs above the first 40,000 FCFA. This approach differs fundamentally from official national policy set by the water directorate. The Technical Unit acknowledges that ideally such financing would be generated by each user committee and managed by a water users' association which groups together the committees of multiple villages or the whole municipality. However, it has not been possible either to mobilise sufficient funds from each community, or to organise committees into a larger association, so the Technical Unit argues that it is the municipality's responsibility, with WaterAid's help,



to promote an alternative solution. Therefore the Technical Unit has taken the model contract which the national water directorate proposes is signed between municipalities and water management committees (DNH 2003) and adapted it to reflect these differing responsibilities.

In a similar way to Booth's (2012: 83) description of local problem-solving "to address the effects of policy incoherence" observed in the Africa Politics and Power Programme's research on local governance and the delivery of public services, the cost-sharing initiative developed by the Technical Unit of Dandougou Fakala does "include the posing of a problem to which national policies and leaders are not offering solutions." However, the case studies that Booth describes "relied primarily, although ... not always exclusively, on mobilising local resources, and they have, above all, *not* been driven by the availability of either government or donor funds" (Booth 2012: 83). In contrast, the Technical Unit's current solution is only possible because of the funds made available to the municipality by WaterAid; the approach has helped mobilise some local resources at community levels, but only to a certain limit. This observation acts as a counterpoint to the optimism for local problem-solving expressed by Booth.

WaterAid's other partners had not developed such clear specific procedures for determining the contribution of users in case of breakdowns. Instead, they used more informal discussions on a case-by-case basis, arguing that some communities could pay up to 200,000 FCFA in the event of major breakdowns and should therefore do so if they can afford this. The exact form and level of user contributions was generally left to the community to decide, often based on an agreement about what was reasonable for each household to contribute rather than what was necessarily needed. The exact split of costs was therefore also often community-specific, and to an extent dependent on the NGO's own budget which was available at the time to allocate to repair costs.

However, the other partners did generally share a similar conceptual view to the specific approach of Dandougou Fakala: NGOs (or local government with WaterAid's support) rather than users usually need to pay for bigger repairs and major rehabilitations (capital maintenance). The representatives of WaterAid's partners were eventually able to agree, after extensive discussion during workshops, on four different categories of repairs. The objective of defining such categories was to be able to develop better monitoring of which

actors were paying for which costs,<sup>44</sup> even if there was not yet consensus on who actually should pay in each case. These definitions are set out in Table 7.6.

*Table 7.6. Definitions of levels of repairs and costs agreed with WaterAid's partners (workshops October and November 2011)*

<b>Type of repair</b>	<b>Description</b>	<b>Typical frequency</b>	<b>Discussions on who should pay</b>	<b>Corresponding WASHCost category</b>
<b>Small repair</b>	Spare parts and labour costing < 50,000 FCFA (about US\$ 100).	Every 1-2 years	Users, although some WaterAid partners do contribute	Operating and minor maintenance expenditure
<b>Major repair</b>	Spare parts and labour costing > 50,000 FCFA (about US\$ 100).	Every 2-5 years	Users if possible but more often WaterAid partners	Capital maintenance expenditure
<b>Rehabilitation</b>	Complete replacement of the whole lifting mechanism and/or the surrounding superstructure e.g. replacing entire handpump or pulley mechanism on a well and/or replacing the surrounding concrete walls.	Less frequent than every 5 years	Users only occasionally despite what official policy suggests	Capital maintenance expenditure
<b>Major rehabilitation</b>	Complete rehabilitation of the whole works e.g. clearing borehole or excavating collapsed well.	Up to every 20 years	WaterAid partners or central government	Capital maintenance expenditure

<sup>44</sup> As I discuss in Chapter Eight, the coup and changeovers in WaterAid staff hindered the progress on developing this monitoring.

This lack of clarity over the exact division of responsibilities between users and other actors reflects both the ambiguity in national policy concerning capital maintenance expenditure, explained in Chapter Five, and the responses of WaterAid's partners to different levels of willingness and ability to pay amongst different communities. I argue that the differences between policy and practice identified here represent an example of Mosse's (2004: 639) argument that 'good policy' "legitimizes and mobilizes political support" while often being "unimplementable" in practice. As already discussed, the limitations on the amount of national-level qualitative research possible in this project (due to the coup and subsequent political crisis) prevented in-depth investigation into how national policies such as the Water Code and the National Drinking Water Strategy (DNH 2007) were developed. However, my argument developed in Chapter Five is that it is reasonable to suppose, given wider donor-government relations and the dependence of the water sector on foreign aid, that mobilising domestic and international political support and therefore financial assistance was a plausible reason for water legislation and policy adopting both community management and cost recovery to the extent that they did.

However, while national cost-sharing policies may be 'good' in terms of gaining the necessary political support, the experiences and reactions of WaterAid's partners suggest that these policies are "unimplementable" (Mosse 2004) in practice. Mosse argues that development actors faced with this challenge try "to maintain coherent representations of their actions as instances of authorised policy, because it is always in their interest to do so" (Mosse 2004: 639). Understanding why development organisations act as they do, according to Mosse, requires a greater consideration of the agency of the actors involved than approaches such as those of Ferguson (1994) permit. Doing this demands some form of ethnography or at least much closer engagement with development workers themselves to try to appreciate the challenges from their perspective (Mosse 2004; Carr 2011; Fechter 2012), as I explained in developing the extended political economy analysis framework in Chapter Three.

These questions also relate to the model suggested by Andrews, Pritchett and Woolcock (2012) for identifying whether a state is likely to be in a "capability trap" or not. They argue that one of the key elements when assessing how development workers behave is whether the strategies of front-line workers are aligned more to performance or self-interest.

Self-interest and maintaining their position involves workers' compliance with inappropriate rules (or even corruption) rather than adopting more performance-oriented actions aimed at best serving the organisation's ultimate clients or beneficiaries. Eyben (2010) makes a similar argument but points out that if development workers are restricted by inappropriate policies or management approaches, they may try to work around these rules for the benefit of those their organisation is trying to support, while reporting their actions to managers and ultimately donors in ways that are framed according to the original policies. In this way they aim to combine performance-related ways of working with the self-interest requirements of appearing to conform to instructions.

These areas of literature on implementing "unimplementable" policies and the ethnography of aid workers highlight key questions. How do WaterAid's partners balance the tension between performance-oriented and self-serving actions in this context, and how do they report or represent their actions further up the chain in order to continue to validate the model of community management with some external support? The evidence presented here suggests that WaterAid's partners are performance-oriented in the way they try to work "relationally" (Eyben 2010) by building up understandings with local communities to help develop forms of "institutional bricolage" (Cleaver 2012) which combine some aspects of the challenging national policy with local interpretations in practice. I explore these ideas in greater depth in the next section in relation to understanding how communities really raise money for their contributions to water services.

However, the second part of the question is to what extent WaterAid and its partners actually question national policy, given that they significantly adapt the policy in their own work. I argue that the links between community and local government levels are important in relation to this question. As described in Chapter Six, WaterAid's model of Technical Units at local government level is based more on a mainstream institutionalist view of how decentralised public services can work than a critical institutionalist perspective. Yet the actions of WaterAid's partners demonstrate an implicit critical institutionalist approach to working with communities, as I discuss in more detail in the next section. It is possible to argue that if WaterAid questions the community management and cost recovery model in national policy, it would raise awkward questions about the ability of their own Technical Unit approach to respond to this challenge, since this model (as discussed for the example of the municipality of Dandougou Fakala) relies on WaterAid funds to finance capital

maintenance expenditure. WaterAid and its partners do emphasise the challenges of sustainability and financing, for example in the country programme's strategy (WaterAid Mali 2010). However, the responses they propose are based either on the 'marketing' approach to raise funds from other donors, which as discussed in Chapter Six has had limited success so far, or on increased 'sensitisation' of users to pay. In the next section I analyse the likely limits to 'sensitising' communities to pay more based on evidence from community fundraising and user preferences of types of water sources.

#### **7.4. Approaches to community fundraising**

In the previous section I introduced how WaterAid's partners interpret the national policy on cost-sharing, and what this means for how much they think users can be expected to pay. In this section I examine in more detail how communities raise funds for their contributions, especially those communities which are apparently more successful at fundraising, and how WaterAid's partners support them in this. I show that these more successful villages represent examples of "institutional bricolage" (Cleaver 2012) in the ways they combine traditional practices with more formal ideas about how water management committees should function. Yet even villages which are thought to be more successful rarely raise enough money to cover all their responsibilities under national policy.

#### **Case studies of more successful communities**

The case study villages selected were identified by WaterAid's partners as being particularly successful at raising money. Analysis of the case studies sought to understand whether their mechanisms for raising money were more successful because they employed the recommended national policies (paying per container collected or paying a regular tariff) or whether they were successful for other reasons. This qualitative examination of different communities shows that villages actually use a combination of methods to raise money, some of which are those suggested by policy, and others which are not. The case study villages and their methods of fundraising are summarised in Table 7.7.

Table 7.7. Eight case study villages considered more successful in raising money

Village	Municipality	Popn.	No. of hand-pumps	Availability of		Method of collective fundraising	Typical amount raised per year (FCFA) – per village	Typical amount raised per year (FCFA) - per water point
				community hand-dug wells	household hand-dug wells			
Yorobougou	Kolokani	450	2	Y (S)	Y (S)	Collective field	200,000 - 250,000	100,000 - 125,000
Kanekebougou	Tioribougou	350 - 600	2	Y	N	Annual tariff for men, weekly tariff for women	125,000	63,000
Bamabougou	Tioribougou	500	2 + 1 broken	Y	Y (S)	Monthly tariff per household plus collective field	50,000 - 100,000	25,000 – 50,000
Torokoroni	Kolokani	650 -1000	2 + 1 in progress	Y (S)	Y (S)	Profit from agricultural cooperative plus collective labour	50,000	25,000

Village	Municipality	Popn.	No. of hand-pumps	Availability of community hand-dug wells S = seasonal	Availability of household hand-dug wells S = seasonal	Method of collective fundraising	Typical amount raised per year (FCFA) – per village	Typical amount raised (FCFA) - per water point
Tacko	Dandougou Fakala	550 – 1000	2 + 1 in progress	N* S = seasonal	N S = seasonal	Monthly tariff for women during a six-month period of the year	45,000	23,000
Konio Peulh	Dandougou Fakala	160 – 320	1	Y S = seasonal	N	Monthly tariff for women	40,000	20,000
Freintoumou	Dialakaroba	1600	3	Y S = seasonal	Y (S)	Collect after breakdown + collective labour	40,000	13,000
Odioumabougou	Dialakaroba	200 - 300	1	Y S = seasonal	Y	Collect after breakdown	9,000	9,000

\*But Tacko does have a seasonal stream used for non-drinking water purposes.

As explained in Chapter Three, the evidence presented in this section is drawn from two sources: focus group discussions conducted by staff of WaterAid's partners in each community, and follow-up group interviews with water committees and women's groups that I conducted myself where possible, except in the commune of Dandougou Fakala where my travel was restricted for security reasons.

I include information in Table 7.7 on whether each village has either community or household hand-dug wells available because, as already discussed, the presence of alternative sources is thought to reduce demand and willingness to pay for water from improved sources such as handpumps. As set out in Chapter Four, this was why these areas of Mali were selected for the detailed parts of the research, because they posed significant challenges for sustainability on these grounds. WaterAid's partners reiterated in the workshops that they considered strong need - in terms of lack of alternative water points - as one of the key reasons for some villages in their areas of work being more successful at raising money. However Table 7.7 shows that all the case study villages except Tacko do have at least one alternative source of drinking water instead of handpumps. This suggests that a strict idea of need does not explain the differences between communities, although as I discuss in Section 7.6, many households still do prefer the convenience of a hand-dug unimproved household well to an improved but more distant community water source.

The partners also argued that the presence of exceptionally motivated, well-organised and transparent water management committees was an important factor - what some in the water sector have called "islands of success" (Davis and Iyer 2002). However as I discuss below, the level of motivation and organisation of a community group which nominally functions as the water management committee depends both on features of traditional community groups and more recent formal elements of water committees. There are also some villages in WaterAid's areas of work where one individual or family who is particularly wealthy in comparison to other members of the community decides to take responsibility for the water point and its upkeep themselves, although this situation does not apply to the case study villages featured here.

It is important to note from Table 7.7 that despite being nominated as examples of success, only one of the villages chosen (Yorobougou) raises sums of money per water point which approach the amounts of over 100,000 FCFA (about US\$ 200) per year suggested as



necessary by national policy and guidelines. Two of the villages are in the commune of Dandougou Fakala, where WaterAid's partner has explicitly decided that the users cannot be expected to contribute as much as national policy requires, as explained in the previous section. WaterAid's partners who work in the other communes in question have similar views even if they were not made as explicit until this issue was discussed in the workshops organised during this research.

In fact, even in Yorobougou the amount raised is not solely for maintenance of water points. This money forms part of the village's general common fund from profits from the harvest of the collective field, so can also be used for other collective purposes: historically this has included contributions to additional school classrooms, building the village shop, digging other wells and a nearby microdam. Despite these other examples of expenditures, the village is able to deposit the surplus each year in a bank account in the main town of the commune which can be accessed when required for unexpected expenditures. This has enabled the community to spend up to 180,000 FCFA (about US\$ 360) at any one time for major handpump repairs. As shown by the wider survey evidence discussed at the start of this chapter, this amount is much greater than most communities have been able to raise.

### **Institutional bricolage**

I argue that the village of Yorobougou and the others listed in Table 7.7 represent more successful examples of fundraising for user contributions to water services than average because of the way "institutional bricolage" (Cleaver 2002, 2012) has occurred in these contexts. The concept of institutional bricolage has been proposed to describe the way that institutions commonly emerge as a mixture of socially embedded (based on particular social and cultural practices) and bureaucratic (based on more formalised ideas and structures) (Cleaver 2002). As discussed when setting out the analytical framework in Chapter Three, this idea attempts to avoid the false distinction of portraying institutions as explicitly 'formal' or 'informal' and highlights the important roles of both local participants and intervening individuals and organisations in shaping arrangements for the governance of common property resources such as water.

Cleaver (2012) identifies a series of key features of institutional bricolage. Among these key

elements are two in particular which I argue are relevant to understanding how communities pay for water in the case study villages. Firstly, Cleaver argues that institutional bricolage commonly involves combining existing practices with ideas adapted from other contexts. Some things remain as taken-for-granted and accepted practices, but these may be adapted under new conditions, such as traditional male-only meetings becoming open to women as well (an example given from Cleaver's research). Secondly, the process of bricolage means that institutions are often multi-purpose and dynamic, rather than the single-purpose and more static institutions envisaged by mainstream institutionalism.

In these case studies, some villages have adopted payment mechanisms which are similar to one of the official policy options of a regular tariff paid per household. However, in three of the case study communities (Kanekebougou, Tacko and Konio Peulh), the idea of a regular tariff has been borrowed or adapted from the existing practices of women's savings groups rather than being used directly as policy might suggest. In these three villages, the regular tariff contributions are made by women either weekly or monthly, depending on the frequency of the parallel system used by the women's savings groups. In these villages, the contribution from men is via an annual tariff (in Kanekebougou) or a through a contribution to collective farming work if additional money is required beyond the amount raised by women (in Tacko and Konio Peulh). Only in Tacko and Konio Peulh are contributions of women greater overall than those of men.

For example, in the village of Tacko, identified by the Technical Unit of Dandougou Fakala as the most successful at fundraising in the municipality, the payment system agreed by the community was that the women would pay a monthly tariff of 50 FCFA (about US\$ 0.1) on behalf of their household. This contribution is paid during the six months of the year when the women's group is able to raise income for its members from the sale of fish. This use of elements of traditional practices in the community has been combined with more formal procedures that water management committees are supposed to adopt, promoted by the Technical Unit. For example, the committee formally records this income and shares the details of its accounts with the Technical Unit and the municipal council, so that it can demonstrate transparency to the users and show the council and the Technical Unit that it has raised its contribution when it requires additional support for capital maintenance expenditure (Sidibé and Jones 2011).

These observations also relate to Cleaver's argument that institutional bricolage leads to institutions which serve multiple purposes rather than the typical single-purpose institutions which are often promoted by NGOs, such as water management committees. In some cases, the women's groups have not just lent ideas to the payment systems adopted for water management, but the women's groups themselves combine the facility for individual members to save and take loans with the possibility to jointly contribute to other collective community expenditures. For example, the women's group in the community of Bamabougou had contributed money to the construction of a micro-dam for the village and the women's group in Torokoroni had contributed to the cost of building a school classroom.

These initiatives reflect the argument in work by other NGOs that support to women's savings groups can also promote broader collective action (Ouattara et al. 1999; Allen and Panetta 2010; Edwards 2010; Mitlin et al. 2011). In a study of particularly successful savings groups in the Oxfam and Freedom from Hunger "Saving for Change" programme in Mali, other collective projects observed included liaising with NGOs for the construction of public facilities such as clinics or mills, setting up small businesses, and in one case investing in a cart and donkey for a water vending business which could bring containers of water from their nearest public facility in the next town (Edwards 2010). This last example represents another case of an initiative where it was a women's group (rather than another body set up as a water committee) addressing problems of water access. The women's groups in Edwards' study identified three common positive factors which emerged from participation in the savings group and contributed to working together: increased group solidarity, greater respect for the women in their own households, and the opportunity to meet regularly to share ideas. However, these actions also often depended for their success on approval from the women's husbands and the village chief. The projects also usually involved additional support from an NGO.

The qualitative evidence on the communities presented in this chapter is not of sufficient depth to enable me to comment on the importance of issues of solidarity and respect in the context of women's groups in these communities, or on the role of men in influencing the contributions to water services made by women.<sup>45</sup> It is clear that the view expressed in

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<sup>45</sup> I discussed the challenge of the depth of the qualitative research in Chapter Four. In relation to the examples of Tacko and Konio Peulh it was even more difficult because I could not visit these communities myself for security reasons.

some parts of Mali that paying for water is a male responsibility (Jones 2011a) does not apply everywhere. However, it is not possible to say whether the observed instances of women contributing to the costs of water services might represent a form of women's collective empowerment, as suggested by some of the literature on women's groups, or the continuation of unequal gender relations where men retain key decision-making power in relation to collective activity.

However, the evidence does provide insight into the role of NGOs and external organisations such as the municipal Technical Units in the process of making links between women's groups and other parts of communities involved in financing water services. The example of the village of Tacko is one case which shows how WaterAid's partner accepted the need for numerous repeat visits and engagement with the community over a long period to enable continued discussion about what combination of practices might work to raise the money required for the community's contribution to water services. By acknowledging and supporting practices of bricolage, WaterAid's partners are implicitly adopting elements of a critical institutionalist approach. Instead of assuming that water management committees can be formed through applying consistent design principles, WaterAid's partners work with the community institutions that do exist and adapt their practices by drawing on both tradition and more modern ideas.

Having discussed paying for water in the context of collective community fundraising and how this is affected by wider processes of bricolage, in the next section I turn to considering payments for water in the context of household finances, and subsequently discuss alternative ideas for the delivery of water services which focus on provision by individual households rather than communities.

### **7.5. Expenditure on water in the context of other household finances and priorities**

In this section, I try to understand what the community contributions presented in the previous section entail at the household level, in the context of other income, expenditure and financial decision-making i.e. broader contextual and structural issues. As discussed in Chapter Two, assessing users' ability and willingness to pay for improved water services is fraught with difficulties. Typical benchmarks used for "affordability" are arbitrary and often

misleading (Reddy 1999; Calkins et al. 2002; Waughray and Mohan 2003). Stated preference approaches to assessing willingness to pay - whether using contingent valuation or participatory methods - are difficult to conduct well and often unreliable (Diamond and Hausman 1994; Whittington 2002; Null et al. 2012). Therefore this research did not attempt to evaluate exact quantitative figures for affordability or willingness to pay. Instead, I develop broad comparisons between contributions towards water services and household expenditure on sanitation, hygiene, health and education, drawing on quantitative and qualitative interviews undertaken during this research as well as available national datasets. As explained in Chapter Four, I also use data from participatory research, household questionnaires and national surveys to show how households prioritise expenditure on different goods and services. Water from improved community sources is clearly not top of the list, but, as previously discussed, household wells are often considered desirable. Therefore the subsequent part of the thesis, Section 7.6, investigates the promotion of improved household wells in more detail.

#### **Expenditure on access to water compared to sanitation, hygiene, health and education**

In Chapter Six I showed that user contributions to the recurrent costs of rural water services in the areas of this study are typically in the range US\$ 0.1 to US\$ 0.2 per person per year or even less. In this section I show that such contributions represent extremely minor expenses compared to most other goods and services. I first use data from participatory diagramming exercises on income and expenditure in two villages (Bogola and Kola, in the municipality of Dialakoroba) to provide an approximation of how household expenditure is split up between key categories of outgoings. I also draw on data concerning the same question, for rural areas, from the national Malian Poverty Evaluation Survey (EMEP)<sup>46</sup> of 2001 (summarised in ODHD/LCPM 2006). The information from these two sources is shown in Table 7.8. It is clear that on average food dominates expenditure in all cases. In comparison, expenditure on water services was of such a low magnitude that it was not even mentioned by the two case study villages, and only included as a component within the 'lodging and furniture' expenditure category of the EMEP.

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<sup>46</sup> *Enquête Malienne d'Evaluation de la Pauvreté*, translation by the author.

*Table 7.8. Approximate divisions of total household expenditure into different categories (participatory exercises 10 and 24 Mar 2011; ODHD/LCPM 2006)*

	<b>Bogola village</b>	<b>Kola village</b>	<b>National household survey: EMEP 2001</b>
<b>Food</b>	70%	50%	73%
<b>Health</b>	10%	25%	2%
<b>Education</b>	5%	8%	1%
<b>Transport</b>		9%	5%
<b>Tax</b>		8%	
<b>Clothes</b>	5%		5%
<b>Animal health</b>	5%		
<b>Lodging and furniture</b>			9%
<b>Other</b>	5%		5%

As explained in Chapter Four, interviews were also undertaken in 11 households in the two villages of Bogola and Kola to understand expenditure on water in the context of wider household expenditure, and in particular in comparison to expenditure on sanitation, hygiene, health and education. The interviews were not designed to give statistically valid data but were intended to provide further qualitative insights into how people managed their household finances, including any differences in gender roles (one male and one female were interviewed in each household i.e. the household head and their spouse).

Only one of the interviewees in the two villages had actually spent any money to access water in the previous 12 months, contributing to the repair of one of the pumps in the village. This observation reflects the wider trend that I have previously discussed: contributions to funds for maintaining handpumps are rare in most villages in WaterAid's zones of interventions. Three other interviewees (two male, one female) had paid for bleach to treat water in their households' wells.

Regarding health-related expenditure, there appeared to be three groups amongst male respondents. Firstly, there were those who had not spent any cash for the health of anyone in their household in the previous 12 months. They explained that this was because they used traditional medicines based on wild plants that they had collected themselves.

Secondly, there was a group who spent in the order of magnitude of 10,000 FCFA (about US\$ 20) per household during the year for infrequent purchases of medicines and/or consultations at the clinic. This was equivalent to US\$ 1-2 per person per year. There was a final group of respondents who had spent in the order of 100,000 FCFA (about US\$ 200) per household where there had been at least one serious illness among household members, possibly involving further travel to a larger town. This was equivalent to US\$ 10-20 per person per year. Responses from the women interviewed only fell into the first two categories, perhaps because larger expenditures are more commonly the responsibility of a male household head.

The 2006 Demographic and Health Survey of Mali (EDSM)<sup>47</sup> also provides useful insights into households' medical expenses and how they fund these (summarised in CPS/MS et al. 2007). Twenty per cent of the population reported being ill in the previous month, and in rural areas 40% of these people sought treatment from qualified medical help. This cost almost 11,000 FCFA (about US\$ 22) on average per person, and about 8,000 FCFA (about \$US 16) per person even in the poorest quintile of the population. In rural areas, 71% of households paid cash for health expenses. Of those, about half (52%) were able to pay with immediately available cash from their current income or salary. The remaining half used other sources of finance, such as selling goods (22%), using savings (8%), taking an interest-free loan (8%) or a loan with interest (1%). The survey emphasises that 29% of households did not pay cash for health expenses; these households paid in-kind through giving up other household assets. The survey does not report the responses of those who did not pay at all for medical expenses, which might have enabled a comparison to the respondents in the villages of Bogola and Kola who used medicinal plants instead. However, both these sources of data show that when people do make medical expenses, even the rural poor, these outweigh typical expenditures on water by at least an order of magnitude.

In terms of expenditure on education, male respondents in the two villages suggested expenses of up to 20,000 FCFA (about US\$ 40) per household per year, for school fees and some materials such as exercise books. This was of the order of about US\$ 2 per person per year (when considering costs per member of population, not per child actually attending school). Again, this is an order of magnitude greater than typical expenditures on water services. The female respondents did not contribute to education costs except for

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<sup>47</sup> *Enquête Démographique et de Santé du Mali*, translation by the author.

occasional small items such as pens.

It is also interesting to examine expenditures on sanitation and hygiene, which formed part of the household interviews (although national-level data is not available for these expenses). No respondent had made any cash expenditures on sanitation in the previous 12 months (although some households had spent about US\$ 12 on latrine slabs subsidised by WaterAid's partner NGO in previous years). However, many households spent significant amounts on soap (the exceptions were those who used home-made soap), typically more than US\$ 4 per person per year. This appears greater than the amount spent on education, or the amount spent on health by those households who did not suffer a particular serious illness during the year. Data from the WASHCost project in Ghana and Mozambique also suggest perhaps surprisingly high household expenditures on soap: US\$ 10 per person in a six-month period in Ghana (WASHCost 2013) and 5% of household income in Mozambique (van de Reep 2010). These figures combine soap for handwashing with soap for other purposes such as bathing and washing clothes; it is often hard to disaggregate these because the physical soap used is commonly the same.

In the households interviewed, women generally spent more on soap than men, probably because they are seen as more responsible for household hygiene and cleanliness than men. However, even in the villages identified in the study as more successful at raising funds for the operation and maintenance of water infrastructure, the actual amount raised per person per year is in the order of US\$ 1 or less. Even where most or all of this is raised by men (such as in the village of Yorobougou), if women in general beyond the two case study villages are also primarily responsible for buying soap then women seem to contribute more to water, sanitation and hygiene together because of the relatively high expenditure on soap compared to water. This is despite the common remark in the case study villages that I was able to visit that water is a male responsibility. Women clearly do have a major role in paying for water in some villages, such as the two case study villages in the commune of Dandougou Fakala. However, I was not able to travel to these areas personally because of security reasons, so this research could not obtain sufficient qualitative data from these villages to really know how this decision came about in the communities.



## **Priorities for expenditure**

Having shown that expenditures on health and education are typically at least an order of magnitude greater than those on water, in this section I discuss how households prioritise expenditure by analysing what they report as essential and desirable, and presenting actual levels of ownership of different assets.

As described in Chapter Four, in the two case study villages of Bogola and Kola I facilitated exercises which developed a broad set of wealth indicators by categorising those assets which were considered essential for households, and those that were desirable (in order of typical preference). The 'essential' assets were also subdivided into two categories: those which all households in the village possessed, and those which not all households possessed. This allowed three different broad levels of wealth (or poverty) to be developed: households which did not even have all the essentials; households which had the assets considered essential but not many of the 'desirables'; and households that also had many of the desirable assets. In terms of categorising expenditure on assets by their importance and desirability, discussions led to the categories shown in Table 7.9.

Table 7.9. Categorisation of different household assets according to necessity and desirability (based on participatory exercises in two villages)

	Bogola village	Kola village
<b>Essential (and all households have it)</b>	Food	Food
	Clothes	Basic farm equipment (hoe)
	Basic farm equipment (hoe)	Basic house (mud or thatch roof)
	Basic house (mud or thatch roof)	Traditional and modern medicines
	Traditional medicines	Water
<b>Essential (but not all households have it)</b>	Cow	Cow
	Plough	Plough
	Donkey with cart	Water from pump
	Modern medicines	
	Latrine	
<b>Desirable (in order of preference, most desirable first)</b>	House with corrugated metal roof	House with corrugated metal roof
	Access to water from pump or own well	Access to well with chlorine
	Bicycle	Donkey with cart
	Motorbike	Bicycle or motorbike
	Solar panel	Chicken or other small animals
	Mobile phone	Mobile phone
	TV or radio	TV or radio
	Sanplat latrine	Meat and fish
	Oil lamp	Sanplat latrine
	Watch	

Although a household well is high up the list of desirable items, in practice other items which were reported as less desirable were more commonly owned (e.g. a radio). It was hard to probe this further: it could be a function of their different costs (a radio is cheaper so bought first even if less desirable) or just because the participants knew my general research was on water and sanitation so were more inclined to cite this as important. The promotion of families making their own household well is discussed in more detail in Section 7.6. Data from the rapid household surveys undertaken in 16 villages during this research,

from Mali's Integrated Light Household Survey (ELIM)<sup>48</sup> in 2006 (summarised in DNSI/MEIC et al. 2007) and from the fourth Mali Demographic and Health Survey (EDSM-IV)<sup>49</sup> in 2006 (summarised in CPS/MS et al. 2007) is used to show actual levels of ownership of key assets, summarised in Table 7.10.

*Table 7.10. Household ownership of key assets (household survey data November 2011; EDSM-IV 2006; ELIM 2006)*

	<b>Percentage of households reporting ownership (n=375)</b>	<b>Percentage of rural households reporting ownership (EDSM-IV 2006)</b>	<b>Percentage of rural households reporting ownership (ELIM 2006)</b>
<b>Radio</b>	90%	68%	
<b>Cow and plough</b>	84%	47% (plough not specified)	
<b>Motorbike</b>	53%	25%	28%
<b>TV</b>	25%	11%	7%

It is clear that levels of ownership of each of the assets are higher than the latest available nationwide data for rural areas. However, it is not possible to say whether or not this suggests that ownership is actually higher in the villages in this study than the national average or not because the most recent national data is from 2006, and overall increases in ownership could be expected since then anyway. The key result from the different sets of data taken together is that significant numbers of rural households are able to buy assets that they themselves (according to the participatory exercises undertaken in this study) classify as desirable, while contributions spent on access to water remain much lower than required by national policy. In the next section I will discuss a key influence on this observation: the fact that many households prefer or are willing to use a convenient unimproved source of drinking water over paying for access to an improved source, which is often further from their home. I also analyse initiatives by WaterAid's partners and others in Mali which have sought to address this challenge by promoting 'self-supply', the idea that

<sup>48</sup> *Enquête Legere Intégrée auprès des Ménages*, translation by the author.

<sup>49</sup> *Enquête Démographique et de Santé du Mali*, translation by the author.

households can be encouraged to invest in improving their own traditional wells.

## 7.6. Self-supply as an alternative to community water supplies

### Rationale for promoting self-supply

As I explained in Chapter Two, Maiga et al. (2006) suggest that Mali is a country with high potential for promoting self-supply as a means of improving access to drinking water in the form of improved hand-dug household wells, because large numbers of households already use traditional (unprotected) hand-dug wells: over 5 million people (60% of the rural population), using 200,000 wells. For those users who not have access to an improved community water source, self-supply could therefore represent an alternative service delivery model. For other users who may in principle have access to an improved community water point, but still experience problems of distance or reliability, self-supply might be a way of supplementing or complementing existing community supplies.

In the four key municipalities in this research, almost 50% of households surveyed in 16 villages had access to their own traditional hand-dug well, as shown in Table 7.11.

*Table 7.11. Percentage of households who have access to their own hand-dug well (in 16 case study villages in the four key case study municipalities: Dialakaroba, Kolokani, Tioribougou, Dandougou Fakala; n=375)*

<b>Type of well</b>	<b>Percentage of households reporting access (n=375)</b>
<b>No well</b>	52%
<b>Traditional hand-dug well</b>	39%
<b>Traditional hand-dug well improved with minor improvements e.g. some concrete head protection</b>	7%
<b>Hand-dug well improved to national norms</b>	2%

Some of the households who did not have their own well may also have had access via a

neighbour's well. Table 7.12 shows that over half of households use unimproved sources for non-drinking needs. As might be expected, when drinking quality is not required, the most convenient available sources are used.

*Table 7.12. Percentage of households who report using each type of water point for washing or bathing (in 16 case study villages in the four key case study municipalities: Dialakaroba, Kolokani, Tioribougou, Dandougou Fakala; n=375)*

<b>Type of water point</b>	<b>Percentage of households reporting the use of each type of water point as their principal source for washing or bathing (n=375)</b>
<b>Borehole fitted with handpump</b>	13%
<b>Other "modern water points"</b>	23%
<b>Unimproved sources</b>	64%

A study by RWSN, WaterAid and the Ministry of Health in 2005 and 2006 in the Koulikoro region of Mali (summarised in Maiga et al. 2006) showed that communities often prefer improved wells to boreholes fitted with handpumps, for their perceived lower cost, greater reliability and proximity to the home. The study also found that water quality in existing traditional wells was generally better than expected: 85% of the unprotected traditional wells tested had less than 10 faecal coliforms per 100ml.

The findings of Maiga et al. (2006) regarding the common desirability of household wells were reflected by the household surveys and village focus groups undertaken as part of this research. Table 7.13 shows that in the 16 villages chosen as case studies in the four key municipalities of interest, approximately one in six households (16%-17%) choose to use an unimproved water point as their principal source of drinking water, even though there are sufficient improved water points in all these case study villages to provide access for 100% of all households.

Table 7.13. Comparison of the use of “modern” and unimproved water points as principal source of drinking water (by households in 16 case study villages in the four municipalities of key interest: Dialakaroba, Kolokani, Tioribougou, Dandougou Fakala)

Type of water point	Percentage of households reporting the use of each type of water point as their principal source of drinking water	
	Estimates by focus group participants based on total number of households in villages surveyed (n=668)	Responses reported by households actually surveyed in each village surveyed (n=375)
“Modern water point”	83%	84% (72% handpumps, 12% other “modern” points)
Unimproved water point	17%	16%

Of the ten villages where focus group discussions reported that some households used unimproved water sources for drinking, nine of these said it was because the alternative points were closer to the home.<sup>50</sup> One village, Konio Marka, also said the cost of water from the small piped system in that village was a reason for people using alternative sources.

This common preference for the convenience of a household well over the likely higher water quality of a handpump is also illustrated graphically in Figure 7.1, a map of the case study village of Bogola. Each coloured point on the map represents a household and the colour of the point represents the type of water source used by the household for drinking:

- Blue = drilled borehole fitted with a handpump (an improved source according to international definitions and national norms).
- Yellow = hand-dug well with concrete lining, metal cover and bucket to draw water (also considered improved, but with an increased risk of contamination if users leave the lid open or leave the bucket on the ground).
- Red = traditional hand-dug well, usually with no lining or cover (an unimproved source

<sup>50</sup> In the other focus group where the reason was reported as ‘other’, the reason was not specified.

because of the high likelihood of contamination of the water).

The map in Figure 7.1 shows that about a quarter of the households in the village use traditional wells, rather than improved sources, and that all but one of these households are in the western side of the community. The second map in Figure 7.2 also show the locations of the improved water points: the boreholes with handpumps (which would be expected to provide the best quality water) and one of the “modern wells” are further to the other side of the village. One of the “modern wells” near to the households in the west is abandoned because it has collapsed in on itself, but WaterAid’s local partner NGO also improved a traditional well used by two families (on the left of the map) to become protected with a cover.

When all these improved water points are taken into account, all the households in this village are considered to have access to drinking water from an improved source, according to the national standards for the number of people who can be served by different types of water point and the distance they can be expected to travel to collect water (500m). However, as the data clearly shows, not all households are actually accessing the improved sources. Households in the village which are slightly further from the improved water points prefer the convenience of traditional hand-dug wells next to their house or in their compound.

Figure 7.1. Map of households in Bogola, categorised by source of drinking water used

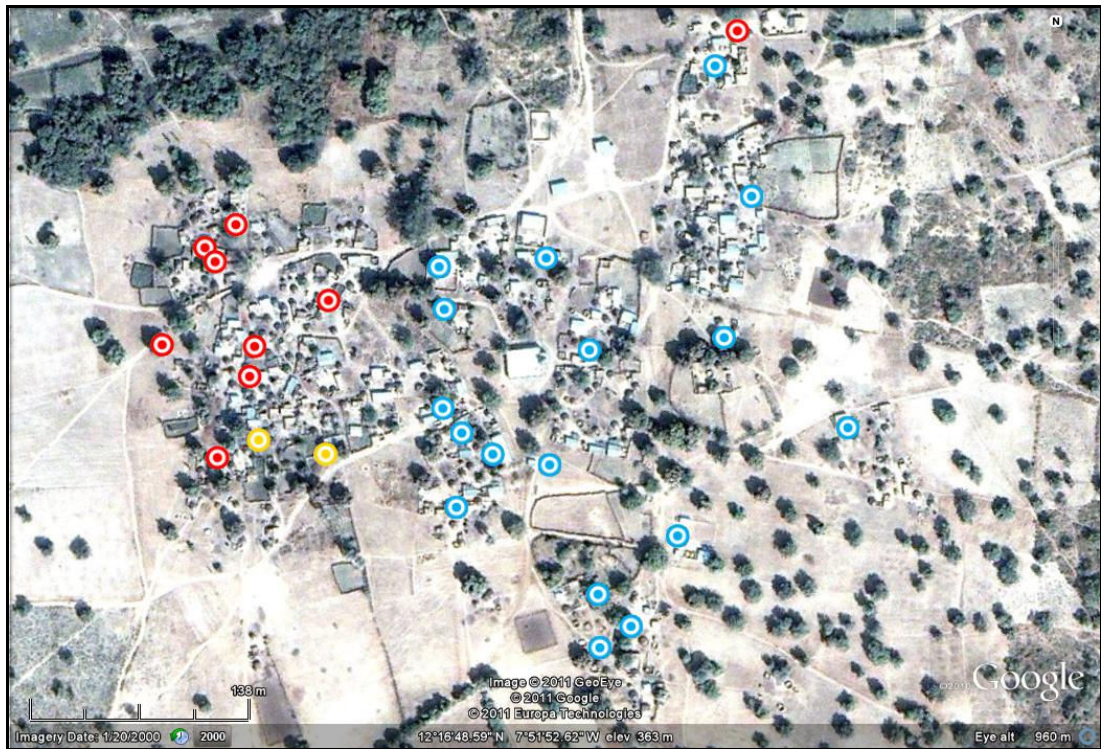
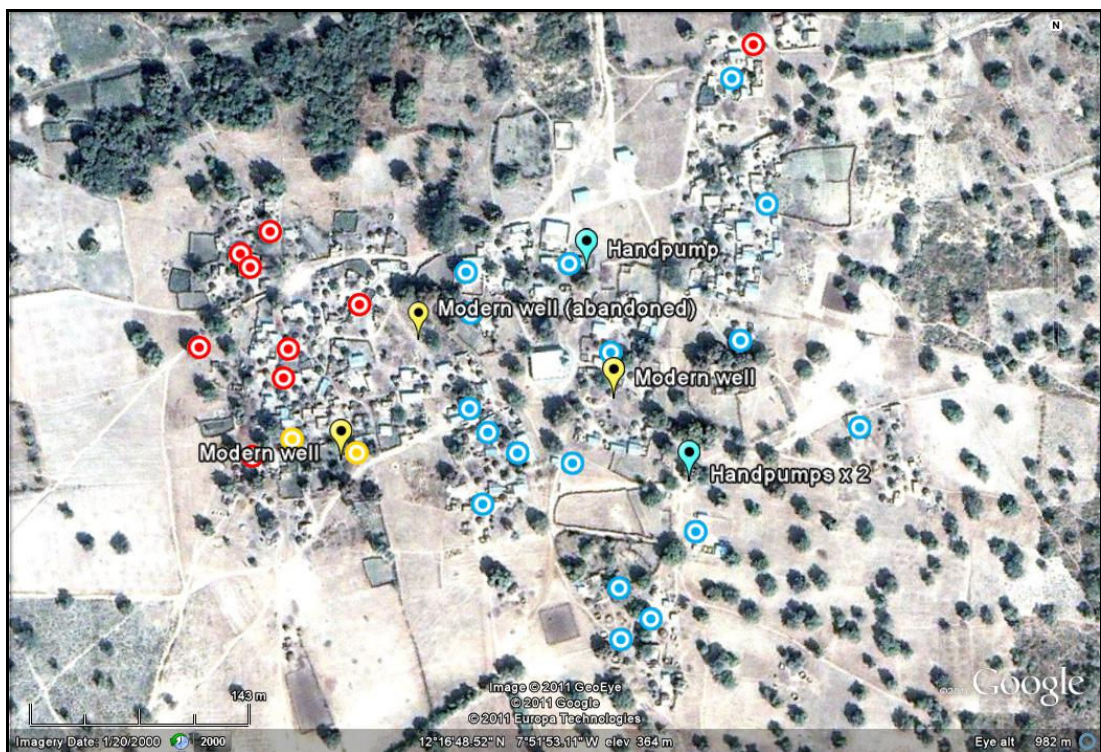


Figure 7.2. Map of households and sources of drinking water in Bogola





Data from the household surveys shows some reported use of household water treatment, summarised in Table 7.14 (although actual treatment is likely to be lower than reported rates due to social desirability bias i.e. respondents replying with what they think the interviewer wants to hear). This is also compared to national data for rural areas from EDSM-IV (CPS/MS et al. 2007). Although reported chlorination of drinking water in the home (21% of households) is higher than the overall use of unimproved sources for drinking described above (16-17%), 66 of the 79 households reporting household chlorination are from just two villages rather than spread throughout the case study areas. The focus groups in these villages suggested that there was a higher awareness of the importance of drinking water quality in these communities, and that many households report treating even water which has come from improved sources (focus groups 2 Oct and 10 Oct 2011).

*Table 7.14. Reported practices of treating drinking water by households (in 16 case study villages in the four key case study municipalities: Dialakaroba, Kolokani, Tioribougou, Dandougou Fakala; n=375)*

<b>Reported method of treating drinking water</b>	<b>Households in 16 case study villages</b>	<b>EDSM-IV 2006 (for rural areas)</b>
<b>None</b>	55%	62%
<b>Boil</b>	2%	0.2%
<b>Filter</b>	10%	32%: (29% cloth; 3% ceramic, sand or other)
<b>Chlorinate in well</b>	5%	8%
<b>Chlorinate at home</b>	21%	
<b>Other / not specified</b>	7%	

To summarise, the rationale of the self-supply approach in Mali (at least as a supplement to community supplies, and possibly as a replacement) is that many users prefer the convenience of their own well close to the household, but could be encouraged to make simple improvements to the well such as a concrete surround and a cover. These

improvements would help protect the well, improve the water quality, and reduce the risk of poor health caused by drinking contaminated water. UNICEF and WaterAid began piloting self-supply in 2008. I analyse these approaches in the next section.

### **Self-supply initiatives and results**

In this section I examine two approaches to supporting self-supply of improved traditional wells in Mali, by UNICEF and WaterAid.<sup>51</sup> UNICEF's approach involved supporting the health services at different levels to lead the promotion of self-supply through pilot projects in different regions. UNICEF partnered with the health services because, as I explained in Chapter Five, self-supply is not recognised as an option by the national water directorate. Under the national water policy, only water points which are improved to national norms are considered to provide access to potable water and it is assumed that household initiatives will rarely meet these standards. However, the national health directorate and its sub-national services consider self-supply a possible way of reducing health risks by improving existing household water sources to provide greater protection against contamination. WaterAid continued its existing approach of working through partners at municipal level but began to include some promotion of self-supply in this work.

Both approaches were based on the idea of subsidising prototype improved traditional wells that could serve as demonstrations for other users to copy with their own funds. However, the two approaches differed in the choice of local organisation to promote the initiatives, the levels of subsidy offered, the typical extent of improvements to wells, and whether promotion was targeted at private wells for families or communal wells for multiple households. Therefore in this section I analyse case studies of the two approaches and assess their success in promoting take-up of self-supply by other users. Table 7.15 summarises the two key approaches. Figures 7.3 and 7.4 show pictures of typical wells upgraded in the UNICEF and WaterAid projects respectively.

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<sup>51</sup> This section draws on a paper presented at the Rural Water Supply Network conference in Kampala, Uganda, in December 2011 (Jones 2011b). I am grateful for comments from an anonymous reviewer.

Table 7.15. Summary of two approaches for promoting self-supply

<b>Donor</b>	<b>UNICEF</b>	<b>WaterAid</b>
<b>Local partners and locations of piloting</b>	The Ministry of Health and regional health services in three regions (Koulikoro, Segou, Sikasso). Within these, six district health services were chosen, working with ASACOs (health centre management committees) in selected municipalities.	Local NGOs in the municipalities of Kolokani, Bla and Dialakoroba, working with selected villages within each municipality.
<b>Level of promotion</b>	Municipalities or area covered by an ASACO.	Villages.
<b>Summary of piloting approach</b>	UNICEF provided funding to regional health services, which in turn funded district health services to organise training for masons and to buy cement for the health committees. The health committees organised interested families or communities in their area to collect cement, obtain other materials needed (sand, gravel, lid) and pay for the masons' work. However there was little promotion of the idea beyond the villages where the health committees or masons were based.	WaterAid's partners included improved traditional wells in their programmes of infrastructure installations. Wells were chosen on the basis of previous reliability of the water supply. If wells previously belonged to a family, they became intended for community access after improvement. While this approach emerged partly from WaterAid's research on household self-supply, it became seen by WaterAid's partners more as a means of implementing relatively cheap community water supply. The promotion of self-supply involved encouraging water user committees to promote well chlorination and show other users the elements of the improved wells.
<b>Typical improvements, cost of wells, and level of subsidy</b>	Cement aprons for wells, sometimes with an interior lining of bricks and cement near the top of the well and a metal lid, at a typical cost of US\$ 100 to US\$ 500. Most of this cost was subsidised in the form of free cement. Owners contributed US\$ 20 to US\$ 50 cash, depending on the masons' rates (which were set by the health committee) and whether the owner bought a lid.	Raised upper rim with lid and a cement apron with drainage, often with a full cement lining so that the point can meet national standards for a "modern well". Cost of US\$ 800 to US\$ 2000, fully paid by the WaterAid project.

*Figure 7.3. Examples of wells upgraded as part of the UNICEF self-supply pilot*



*Figure 7.4. Examples of wells upgraded as part of the WaterAid self-supply pilot*



As described in Chapter Four, case study locations were chosen on the suggestion of key informants involved in the two pilot projects as representing good examples of the approaches. For the UNICEF project, the health district of Dioila was selected, where three municipalities piloted self-supply (Banco, Massigui, Ngolobougou). The villages of Bogola and Kola in the municipality of Dialakoroba were chosen as examples of WaterAid's approach. Semi-structured interviews were undertaken with key informants in the health services and each of the three municipalities in Dioila for the UNICEF project, and key informant interviews and focus groups were conducted in the two villages in Dialakoroba for the WaterAid initiatives.

Based on the case study research, I identify four key findings about the success of promoting self-supply in these pilot projects. The first two of these observations relate to the extent to which other users take up the idea after piloting, and the challenge of selecting villages which might be most suitable for the self-supply approach. The other findings concern water quality and water treatment, and the role of the private sector in terms of how likely masons are to actively promote improvements to wells.

The first finding is that the take-up in terms of other users copying elements of the improved wells was very limited. In the three municipalities in Dioila, it is unclear exactly how many wells were improved by users with their own funding after the completion of the demonstration improved wells. Limited monitoring was performed by the district health services and the health committees, mainly because of a lack of funds to support follow-up visits (the project funding was for the initial activities of training masons and making demonstrations only). Estimates based on the partial knowledge of the district health technician, the health committees, and the masons suggest that around 15 families or communities in total funded their own improvements after the pilot project, compared to about 50 wells which were improved with the subsidies. These results are shown in Table 7.16.

Table 7.16. Number of households funding improvements to wells after piloting in Dioila

Municipality	Number of households funding their own improvements to wells after piloting self-supply promotion in Dioila, based on estimates by:		
	District health services	Local health committee	Local trained masons
<b>Banco</b>	3	0	3 to 10
<b>Massigui</b>	8	Don't know	5
<b>Ngolobougou</b>	4	2	2
<b>Total</b>	<i>15</i>	<i>2+</i>	<i>10-17</i>

This is of a similar order to the rates of take-up observed in the promotion of self-supply by the health services supported by UNICEF in other areas of Mali (Sutton 2010). In the two villages in Dialakoroba where WaterAid's partner worked, no wells were improved by users after the construction of the improved traditional wells. In each village, a number of users do have partially improved traditional wells (typically with some brick and cement headwork, and sometimes a metal lid), but these improvements had all been done at least 10 years previously (interviews 9-25 Mar 2011).

Key informants involved in the UNICEF project stated that the cost of paying for improvements to wells was a barrier for many people adopting self-supply (interviews with health service representatives 31 Mar 2011, 8 June 2011), although the masons demonstrated that basic improvements (e.g. wellhead protection with rocks and some cement) can be made for as little as US\$ 40 (interviews with masons 30 Mar 2011, 6 Jun 2011). Given that digging the well typically costs US\$ 50 to US\$ 300 (Sutton 2010), this suggests that initial improvements can be kept to a cost lower than the excavation itself. In the WaterAid pilot project, WaterAid's partner acknowledged that very few families would be able to afford upgrading to the same level as the demonstrations, but still hoped that some might adopt less expensive elements of the approach (interview 24 Feb 2011).

However, it is difficult to assess the real influence of cost in these examples because in both cases, the limited take-up and copying of ideas by other users seems related to the second key observation: the characteristics of the villages which were chosen for the initial

demonstration and promotion. In both case study areas the villages chosen for promotion were probably not those which could potentially benefit most and where users might have most incentive to improve their own supplies. In each of the three municipalities in Dioila, the majority of wells improved with subsidies during the project were situated in the main village at the centre of each municipality. This seems to be related to the use of ASACOs (health centre management committees) to promote the initiative; the key members of each health committee are generally based in the central village where the main community health centre is located. Health promotion to other villages in the municipality is usually performed via community health 'relays', volunteers from each village who attend meetings with the health committee in the central village and then return to their communities to pass on the messages.

However, if any links in this chain break down (for example, relays from a particular village missing a session, or failing to communicate messages once back in their community), most of the population of the municipality will be uninformed. Also, the health committees in this initiative generally operated a 'first-come, first-served' policy for allocating cement to well-owners, which helped prioritise residents of the main village who could come to collect cement more easily than those from different villages. Overall, this led to the majority of wells which were improved being in these larger central villages which already had numerous other improved water sources, rather than more distant villages or hamlets where there tends to be a greater reliance on traditional hand-dug wells for drinking, and where self-supply of improved wells is thought to have a more important role (Sutton 2010; Harvey 2011).

A similar problem was evident in the WaterAid-supported promotion in Dialakaroba, despite the villages chosen for the demonstration wells being selected by WaterAid's local partner NGO rather than left to a more *ad hoc* process as in Dioila. Both villages already had multiple improved water points (boreholes fitted with handpumps and "modern wells"), to the extent that the population which could be served from improved water points already (according to national norms) was more than twice the actual population of each village (author calculations). The logic of WaterAid's partner NGO was that despite this level of coverage, and despite all households being comfortably within the official distance (500m) of one or more improved water points, users often prefer the convenience of hand-dug wells closer to their home (as demonstrated in Figures 7.1 and 7.2), even for drinking water,

so should be encouraged to improve these for better water quality too (interview 4 May 2011). Overall, the approaches in Dioila and Dialakoroba both targeted self-supply as a supplement to existing improved community water supplies, rather than a complete alternative where no community options exist. Therefore these pilots responded to one of the justifications for promoting self-supply, but perhaps at the expense of the other reason of improving water provision for those with no access to improved sources at all.

The third finding concerns water quality and the extent of effective household water treatment. The health services from Dioila performed some follow-up water quality testing on samples of improved traditional wells throughout the district (not solely from the three municipalities discussed here) in 2009 and 2011. The total faecal coliforms measured in water from these improved traditional wells were generally less than 10 FC/100ml, although surprisingly the water quality in the wells with a lid tested in 2011 was in general worse than the water quality in wells without a lid, perhaps suggesting that lids are often left open and contamination still permitted that way. There was evidence of residual chlorine in about a quarter of wells tested in 2011, but none in 2009. Tests for chlorine were also performed in the existing partially improved traditional wells in the two villages in Dialakoroba in 2011, because most well-owners said they sometimes added chlorine (in the form of locally available household bleach) (interviews 9-25 Mar 2011). These tests showed zero chlorine levels: if users did use chlorine, it was for occasional shock chlorination rather than regular treatment. Responses from participants in these surveys and estimates from local health workers are also that rates of water treatment in the home are very low, a finding backed up by the more extensive household surveys discussed previously.

The fourth and final finding from these pilot projects concerns the capacity of local private sector actors. Private sector capacity is an essential element of self-supply and was addressed in these initiatives by the training of local masons, although there have been concerns in Mali that such training has sometimes focused on the needs of the immediate pilot projects rather than longer-term capacity (Sutton 2009b, 2010). Interviews with masons who were trained as part of the projects in this case study suggested that improving wells is a minor part of their work compared to other activities such as building houses. Masons reported that they were unlikely to promote well upgrading themselves without the guaranteed support of a subsidised project such as these, since investing time and money travelling to other villages to seek work was a risk without knowing if there would actually



be demand for their services (interviews with masons 30 and 31 Mar 2011; 8 Jun 2011). A similar challenge was identified in WaterAid's promotion of self-supply in Zambia (Raeside 2009).

This observation raises the question of what role the private sector could or should play in creating demand for self-supply as well as in responding to demand generated by promotional activities by other actors such as NGOs or government. Parallels have been drawn between promoting self-supply and demand-driven sanitation such as Community-Led Total Sanitation (CLTS) or sanitation marketing (Sutton 2009a; Harvey 2011). The masons in these self-supply pilots were also trained in making concrete latrine slabs. However, promoting the sale of latrine slabs in other villages involved a similar issue of risk to travelling to promote well upgrading. WaterAid's own evaluation of CLTS piloting in the two villages of Kola and Bogola recommended supporting the construction of latrine slabs in every village (rather than construction and transport from elsewhere) to help promotion (workshop 10-12 Feb 2011), although this would still represent a risk for masons if they were investing the up-front construction costs. A representative of UNICEF suggested that if self-supply were to be further promoted, it could be linked more closely to CLTS and sanitation marketing, with additional support given to paid promoters to work alongside masons (interview 19 Jan 2011).

Taking these four sets of observations together, it is difficult to assess the potential of self-supply as an alternative service delivery model to community management in Mali. The selection of villages in these case studies was based on the idea of using self-supply to supplement improved community supplies which users perceived as distant, even if they were within the access distance specified in national norms. They did not address the possibility of using self-supply to improve the water provision of those who had no access at all to an improved source. Furthermore, the promotion of self-supply in WaterAid's work was still based on well upgrading known to be too expensive for the majority of users, rather than promoting the most basic and affordable forms of well improvements.

## 7.7. Conclusions

In this chapter I have shown the gaps between policy and practice regarding the role of users in contributing to the recurrent costs of rural water services in Mali. In the areas where WaterAid works, estimates of user contributions to operation and maintenance and capital maintenance costs of handpumps are up to US\$ 0.2 (about 100 FCFA) per person per year. Taking these figures together with those presented in Chapter Six from a detailed study of four municipalities, we can conclude that user contributions to recurrent costs are typically up to US\$ 0.1 to US\$ 0.2 per person per year. These contributions are at least five to nine times lower than national policy intends.

Communities which do succeed in raising more funds for user contributions than average represent examples of “institutional bricolage” (Cleaver 2012), the process through which institutions emerge based partly on local social and cultural practices and partly on more bureaucratic arrangements introduced from elsewhere. Two aspects of institutional bricolage are particularly relevant to the observations of community fundraising in these case studies. Firstly, as Cleaver argues, institutional bricolage entails combining existing practices with ideas from other contexts into a new institutional form which is an adaptation of elements from both sources. For example, in the village of Tacko in the municipality of Dandougou Fakala, the system of raising money for the water management committee is that women pay a monthly tariff during the six months of the year when they are able gain income from selling fish. This represents an adaptation of the practices of the existing women’s group with the introduction of more formal saving, accounting and payment practices which are intended by national policy to be part of how water committees operate. This case study also represents an example of a second feature of institutional bricolage, that local institutions tend to serve multiple purposes rather than the single-purpose committees typically set up by NGOs.

WaterAid’s partners actively support these processes of bricolage, by trying to work closely with different communities to find ‘best fit’ solutions rather than imposing what Mosse (2004) might call an “unimplementable” national policy. This observation shows that WaterAid’s partners implicitly adopt a critical institutionalist approach to supporting the development of local institutions rather than a more mainstream and rigid approach. They acknowledge and accept that institutions form through local improvisation and are

embedded in the existing practices and social structures of a community. This finding contrasts slightly with the evidence in Chapter Six showing that at municipal levels WaterAid's approach exhibits features of both mainstream and critical institutionalist thinking in relation to how they seek institutional change with local government partners.

In this chapter, survey data has shown that one in six households report using an unimproved water point as their principal source of drinking water, even though there are sufficient improved water points in the case study villages to provide access for 100% of households. This finding demonstrates the common preference for the convenience of a hand-dug well close to the home over the likely higher quality of water from a borehole fitted with a handpump. Given this preference, and the suggestion from interviews and participatory exercises that users' willingness to pay for drinking water is low in comparison to other items of household expenditure, the chapter has also presented analysis of projects promoting the idea of self-supply i.e. users being encouraged to upgrade their own household wells. This approach has been tried as an alternative to community supplies in some areas but these pilot projects have had limited impact. In these cases, this lack of impact appears primarily due to poor selection of target villages, but this observation also means that it is difficult to draw conclusions about whether the overall approach might have had more success given better targeting.

## **Chapter Eight - Conclusions**

### **8.1. Introduction**

In this chapter I set out the conclusions of this thesis: the empirical findings, the conceptual and methodological contributions, and the recommendations for practice and policy. I also suggest directions for future research which could build on the work in this thesis.

I begin by drawing together the analysis from Chapters Five, Six and Seven to summarise answers to the key questions posed under the first research theme described in Chapter One: how the recurrent costs of rural water services are shared between different actors where WaterAid works in Mali, and the associated levels of services received by users. This evidence represents the key quantitative findings of this study. I concisely explain these results by drawing on the qualitative data and analytical framework developed, before discussing the conceptual issues in greater depth in the subsequent section.

In Section 8.3 I discuss further how the theory used in this thesis helps explain the empirical evidence, and then summarise how the research findings contribute to extending existing frameworks for political economy analysis and theories of institutional change. In this part of the chapter I therefore try to make the links between how I use academic theory to explain the empirical results, and how these results help extend the theory.

In Section 8.4 I summarise the recommendations for WaterAid and other organisations which I propose based on the results of this thesis. These recommendations concern WaterAid's own programmes and approaches to service delivery, and suggestions for how the organisation and others can link their own experiences to promote national policy debate in key areas. In the final section of this chapter I suggest directions for future research.

### **8.2. Empirical findings and implications for approaches to service delivery**

As explained in Chapter Two, costs data in this thesis is presented according to the components of the life-cycle costs approach proposed by the WASHCost project (Fonseca et

al. 2011). In this section I recap the cost-sharing arrangements and associated service levels found in this research, and highlight the implications for approaches to service delivery.

### **Expenditure on operation and minor maintenance**

This research concludes that user contributions to the recurrent costs of rural water services provided by boreholes fitted with handpumps in the areas where WaterAid works in Mali are up to US\$ 0.1 to US\$ 0.2 per person per year (about 50 to 100 FCFA). This finding is based on drawing together the evidence presented in Chapter Six (a detailed study of four key case study municipalities, where user contributions to recurrent costs were less than US\$ 0.1 per person per year during 2008-2011) and Chapter Seven (a wider survey of all water points in 15 rural municipalities, where estimates of user contributions were up to US\$ 0.2 per person per year where reported). These figures apply to boreholes fitted with handpumps only because user contributions to the recurrent costs of “modern wells” were extremely rare and insufficient data was available to draw conclusions regarding expenditure relating to small piped systems.

The user contributions observed in this study are therefore at least five to nine times lower than the contributions required according to national policy guidelines, which state that users should contribute about US\$ 0.9 per person per year (about 450 FCFA) to cover operating and minor maintenance expenditure (about US\$ 0.4 per person per year) and capital maintenance expenditure (about US\$ 0.5 per person per year). The user contributions observed can therefore cover some operation and minor maintenance costs, typically basic spare parts and the fees for occasional visits by a technician. However, these contributions are not enough to include any day-to-day management fees or the annual contribution required for capital maintenance expenditure.

The communities which are most successful at raising funds for user contributions to recurrent costs represent examples of “institutional bricolage” (Clever 2012), where communities draw on traditional ways of organising and fundraising, as well as more formal ideas about how water management committees can function. I discuss the relevance of these findings to debates about institutions and institutional change in more detail in Section 8.3. However, even communities identified by WaterAid’s partners as examples of

success do not raise the sums of money demanded by national policy.

There are two key reasons behind these differences between policy and practice. The first is that many users are willing to use alternative unimproved water sources, where available (I comment on this further when discussing the functionality and usage of water points below). The second reason is that there is ambiguity in policy (in how roles and responsibilities are set out in the legal framework and national guidelines) and practice (in how different actors interpret these responsibilities) concerning in what circumstances local government, NGOs or central government should intervene to help communities pay capital maintenance costs. I explain this reason in greater depth in Section 8.3 of this chapter which details the conceptual contributions of this thesis and how they help explain the evidence observed.

### **Expenditure on capital maintenance**

In the previous section I explained that user contributions to recurrent costs do not cover capital maintenance as national policy intends. Instead, WaterAid (through its partner NGOs and local governments) and central government are the key actors paying for capital maintenance expenditure in the case study areas, as discussed in Chapters Six and Seven. Across the four municipalities studied, expenditure on capital maintenance during 2008-2011 ranged from approximately US\$ 0.1 to US\$ 1.6 per person per year (about 50 to 800 FCFA).

The level of expenditure varied so much because it was highly dependent on the timing of donor and government projects to rehabilitate old infrastructure: the only municipality with capital maintenance expenditure of more than US\$ 0.7 per person per year during 2008-2011 had received an extensive government-run and donor-funded handpump rehabilitation project in 2010. In the three other municipalities, which did not receive a major rehabilitation project during this period, the figures observed for capital maintenance expenditure are between two to thirty times lower than the bottom end of the international benchmark suggested by the WASHCost project of US\$ 1.5-2 per person per year (WASHCost 2012).

Although WaterAid and its partner NGOs and municipal Technical Units in principle align

themselves with the national policy that users are responsible for capital maintenance expenditure, they respond differently in practice. As shown in Chapter Seven, the staff of WaterAid's partners share a common view that most communities are unwilling or unable to pay the amounts of money needed for capital maintenance. However, due to the ambiguity in national policy they interpret their responsibility to intervene in different ways. Most of WaterAid's partners used informal discussions with communities on a case-by-case basis to determine relative contributions. These contributions were also dependent on the partner's available budget at the time. One of the partners, the municipal Technical Unit of Dandougou Fakala, has developed a more structured approach by clarifying the maximum amount that users are expected to pay and in what circumstances the Technical Unit will intervene. However, this approach is dependent on financing which is part of the wider budget support from WaterAid to the municipality. A key question for WaterAid or other actors seeking to provide similar forms of support is how long this can continue, which I address in Section 8.4.

### **Expenditure on direct support**

The final component of recurrent costs at local levels is the expenditure required for direct support to community management, such as monitoring, technical advice and administrative support, conflict resolution, refresher training and support to communities' own fundraising. This research examined the model of support that WaterAid promotes - water and sanitation Technical Units within local governments - and compared this approach to the STEFI (Technical and Financial Monitoring) system, which is the key model of direct support suggested by government policy in Mali (Faggianelli et al. 2009; Smits et al. 2011).

In the four municipalities supported by WaterAid analysed for this study, the Technical Units cost from US\$ 0.5 to US\$ 1.4 per person per year (about 250 to 700 FCFA). The costs per user are sensitive to the population of the municipality since the absolute cost of each Technical Unit is similar, and dominated by staff salaries and overheads (transport and office costs). In the four municipalities these costs are currently funded through direct budget support to the municipalities from WaterAid (or in one of the case study municipalities, still through a local NGO partner). In contrast, the STEFI system costs US\$ 0.34 per person per

year, a lower figure than the Technical Units because of its more limited mandate and less intensive form of support. This cost is financed from part of the user tariff for water with further contributions from the municipalities and government (Smits et al. 2011), but has not yet been extended to support handpumps as well as small piped systems.

Recent international benchmarks proposed by the WASHCost project suggest that expenditure of US\$ 1-3 per person per year is required for the direct support necessary for sustainable basic rural water services (WASHCost 2012). Therefore in the smaller municipalities where WaterAid's approach was used in this study (costs up to US\$ 1.4 per person per year) the expenditures for the WASH Technical Units are within the observed international benchmarks. The costs of the STEFI system are below the proposed WASHCost benchmarks, but, as discussed above, the STEFI approach has a more limited mandate than a more comprehensive system of direct support which encompasses all the possible activities. These findings highlight the tension between the different levels of direct support that can be provided to communities, how much the different approaches cost and how this can be financed. Comparing the approaches above shows that, according to "the 3Ts" framework (OECD 2009), the model of water and sanitation Technical Units is currently dependent on 'transfers' (funding from international donors, in this case WaterAid). It is unclear over what timescale it might be feasible for similar support to be financed from within the Mali sector itself i.e. from taxes and tariffs.

### **Functionality and usage of water points**

This research sought to answer two questions related to the service levels that water users receive which are associated with the cost-sharing arrangements observed. Firstly, what are the levels of functionality of the infrastructures in question - do they work or not? Secondly, what water sources do people actually use - improved or unimproved water points? As discussed in Chapter Four, examining service levels in detail (including details of dimensions such as water quality, quantity or accessibility in terms of time taken per day to obtain water) was outside the scope of this study.<sup>52</sup> However, using a definition of a "basic" level of service which includes the requirement that the user accesses water from "an improved source which functions at least 350 days a year without a serious breakdown" (WASHCost

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<sup>52</sup> Regarding water quality, this research has a similar limitation to the WHO/UNICEF Joint Monitoring Programme in taking the type of source (improved or unimproved) as a proxy for water quality.



2012), this research is still able to draw conclusions regarding service levels by responding to these two questions.

Overall, the functionality rates across the areas studied (the four municipalities studied in detail and the 11 others included with wider survey data) suggest that the levels of expenditure and arrangements for recurrent expenditures observed in the period 2008-2011 do not lead to a sustainable basic service level. The overall functionality rate of boreholes fitted with handpumps in the 15 municipalities was 73%, similar to the Mali average, which is estimated at 69% (DNH 2008a; WaterAid 2010). In the four municipalities studied in detail, the functionality rates varied. The functionality rates observed were higher in the municipalities of Dandougou Fakala and Dialakoroba (both about 90% functional) than in the other two municipalities, which were both below 80%. As I explained in Chapter Six, the particular approaches taken to capital maintenance expenditure during 2008-2011 may help explain the higher rates of functionality in the two municipalities. Although these approaches provide interesting lessons of how funding from NGOs and central government can be used, neither yet represents a sustainable and scalable financing solution.

Further community-level research in 16 villages in the four key case study municipalities provided additional detail on the services actually received by users. Approximately one in six households chose to use an unimproved water point as their principal source of drinking water, even though there were sufficient improved water points in all these case study villages to provide access for 100% of households. Of the ten villages where focus group discussions reported that some households used unimproved water sources for drinking, nine of these said it was because the alternative points were closer to the home.

### **8.3. Conceptual and methodological contributions**

In this section I highlight how this research makes conceptual and methodological contributions to the literature in two key related areas. Firstly, this thesis has extended existing frameworks for political economy analysis used by donors and think tanks by i) combining this type of approach with further insights from the literature on institutions and institutional change across different scales, and ii) demonstrating how to put this into practice through close engagement with the staff of an international NGO and its partners.

Secondly, the thesis has used these detailed analyses of institutions concerning the financing of rural water services at community and municipal levels to extend the literature on institutional change. In particular, the research has shed further light on the potential and limits for i) processes of “institutional bricolage” (Cleaver 2012) and “practical hybridity” (Booth 2012) to lead towards local institutions which deliver more effective public services, and ii) the ability of external organisations to influence these processes.

### **Extending political economy analysis**

In developing the extended political economy analysis framework I have tried to build on existing work to address challenges posed by authors from the perspectives of both policy and academia. The framework demonstrates how a “problem-driven” approach to political economy analysis can incorporate analytical concepts from more detailed theoretical literature relevant to the particular problem, in line with the proposal outlined by Harris (2013). The approach which I have developed also responds to Cleaver’s (2012) argument for academic researchers to find ways of placing their detailed analyses of local-level institutional change within wider frameworks. This step helps demonstrate to practitioners and policymakers the relevance of analysis in specific local contexts.

By investigating these relationships between actors and institutions across different scales, I have shown how WaterAid’s partners develop local interpretations of national policy on financing rural water services, in a similar way to how Mosse (2004) and Eyben (2010) examine the responses of development workers to “unimplementable” policies or processes. Through considering this argument within a wider political economy framework, I have also demonstrated the effect of structural factors on how these arrangements emerged. At a national level, these factors include the influence of Mali’s aid dependency and decentralisation reforms on how policies affecting rural water services have developed. At local levels, structural factors include environmental issues such as the availability of alternative water sources which affect users’ willingness to pay for water from improved sources.

The way I have put this extended political economy approach into practice through the partnership with WaterAid demonstrates one way of considering within a PEA framework

what Copestake and Williams (2012) call the “micro-politics” of aid agencies, by trying to understand the day-to-day decisions of development workers such as the staff of WaterAid’s partners. As I concluded in Chapter Four, my experience supports an argument for collaborative researchers, including doctoral students, to act at times like an employee of the partner organisation in order to help their understanding of “why agencies do what they do” (Carr, in Simon et al. 2011: 2797). However, this is not just an argument intended to benefit academic research. I have tried to use this process to support the analysis and learning carried out by the staff of WaterAid’s partners themselves. As Carter (2013) points out, research in the WASH sector should certainly not just be done by academics. I hope to have shown one way in which these different forms of research can be mutually beneficial.

### **Understanding institutional change**

I now summarise how the use of the extended political economy framework in practice has helped both to explain the emergence of the institutions observed and to contribute to extending theories of institutional change. Chapters Six and Seven presented analysis of the approaches to influencing institutional change adopted - both explicitly and implicitly - by WaterAid and its partner organisations at municipal and community levels. The evidence shows that WaterAid’s approach contains elements of both mainstream and critical institutionalist thinking (following Cleaver 2012).

At local government level, WaterAid primarily promotes formal institutional arrangements: municipal Technical Units for water and sanitation, and processes such as the creation of Sector Development Plans and the use of these plans by local government representatives as tools to seek further financing from donors (a process called ‘marketing’ by WaterAid). However, these processes exhibit the challenge of “reforms as signals” (Andrews 2013), where institutional reforms appear to happen but lack the intended function. For example, interviews and observations at workshops with local government representatives showed that the majority were unfamiliar with the sector plans for their own municipalities. The development of the plans had often been donor-led and implemented by consultants rather than municipal representatives, and plans were not always handed over from outgoing to incoming representatives after local elections. Furthermore, the process of ‘marketing’ Sector Development Plans to donors as a way of municipal fundraising involves tension

between creating competition as a way of rewarding municipalities which have proactive and committed elected representatives, and promoting equity between different municipalities which have varying funding needs.

However, I have also shown that some parts of WaterAid's approach at municipal levels do implicitly exhibit a viewpoint of critical institutionalism, where WaterAid's partners are sensitive to the fact that institutional changes typically happen through gradual processes of "bricolage" (following Cleaver 2012 and Andrews 2013) which build on what already exists locally rather than the idealised implementation of reforms exactly as suggested on paper. For example, although the way the Sector Development Plans were created matches the characteristics of the idea of "reforms as signals" discussed above, some local government interviewees reported that the Sector Development Plans had started to help improve coordination between the municipality and different NGOs working in their areas, as I described in Chapter Six. This represents a small but worthwhile step away from the widespread and less coordinated "project-based" mode of local governance (Olivier de Sardan 2011).

Furthermore, one of WaterAid's partners, the Technical Unit in the municipality of Dandougou Fakala, demonstrates an approach close to what Booth (2012) calls "practical hybridity" in the way it has developed a local system of cost-sharing between communities and local government in response to an unworkable national policy. However, this differs in a key respect to Booth's observations of examples of practical hybridity. Booth argues that practical hybridity generally relies on mobilising local resources, in the absence of government or donor funds. In contrast, the approach adopted by the Technical Unit in Dandougou Fakala is possible specifically because of the additional discretionary funds that WaterAid has made available to the municipality. Although in one sense this represents a less optimistic take on the potential for developing local solutions than the work of Booth, it does also extend the idea of practical hybridity by providing an example of how an external actor such as an NGO might be able to support such processes.

At community level, this research has also demonstrated both the usefulness of these theories of institutional change and how this study contributes to extending the theories. Through case studies of different villages, I have shown how institutions for financing the recurrent costs of water services emerge through institutional bricolage (Cleaver 2012), as a

mix of both traditional arrangements and imported ideas. In particular, two elements of the idea of bricolage help explain the findings in this study: the way that existing practices are combined with ideas from other contexts by adapting aspects of each, and the observation that local institutions often exist for several different purposes rather than being single-purpose committees. These findings support the theory of Cleaver and the 'critical institutionalist' school of thought.

More importantly, this research helps show how external organisations can support processes of bricolage. The work of WaterAid's partners in different communities demonstrates an implicit critical institutionalist approach through which they try to gradually work with local actors to find ways of 'best fit' for financing rural water services which adapt existing local practices into new arrangements. However, there are also limits to this approach. Firstly, as discussed in Chapter Seven, even communities identified as more successful in terms of fundraising rarely achieve the sums of money suggested as necessary by national policy. Secondly, working with communities in this way is a time-intensive process requiring frequent visits and follow-up. Both these factors therefore mean that greater finances are needed at local government level, to make up the gap in financing for operating and minor maintenance and capital maintenance costs, and for the costs supporting communities through visits and facilitation. I discuss these implications in more detail in Section 8.4.

Overall, I draw together the observations about the role of WaterAid and its partners in institutional change (regarding the form of the institutional arrangements that they promote) and the potential and limits of these processes in terms of service delivery (the function that results) in Figure 8.1. This diagram builds on Figure 3.1, presented in Chapter Three, which I used to conceptualise the institutional arrangements and outcomes for public services described in the three areas of literature on institutions used in the analytical framework. Figure 8.1 sets out key examples from the work of WaterAid and its partners observed in this research in comparison to the concepts identified in the literature.

Figure 8.1. Conceptualising institutional arrangements and outcomes for public services: examples from this research

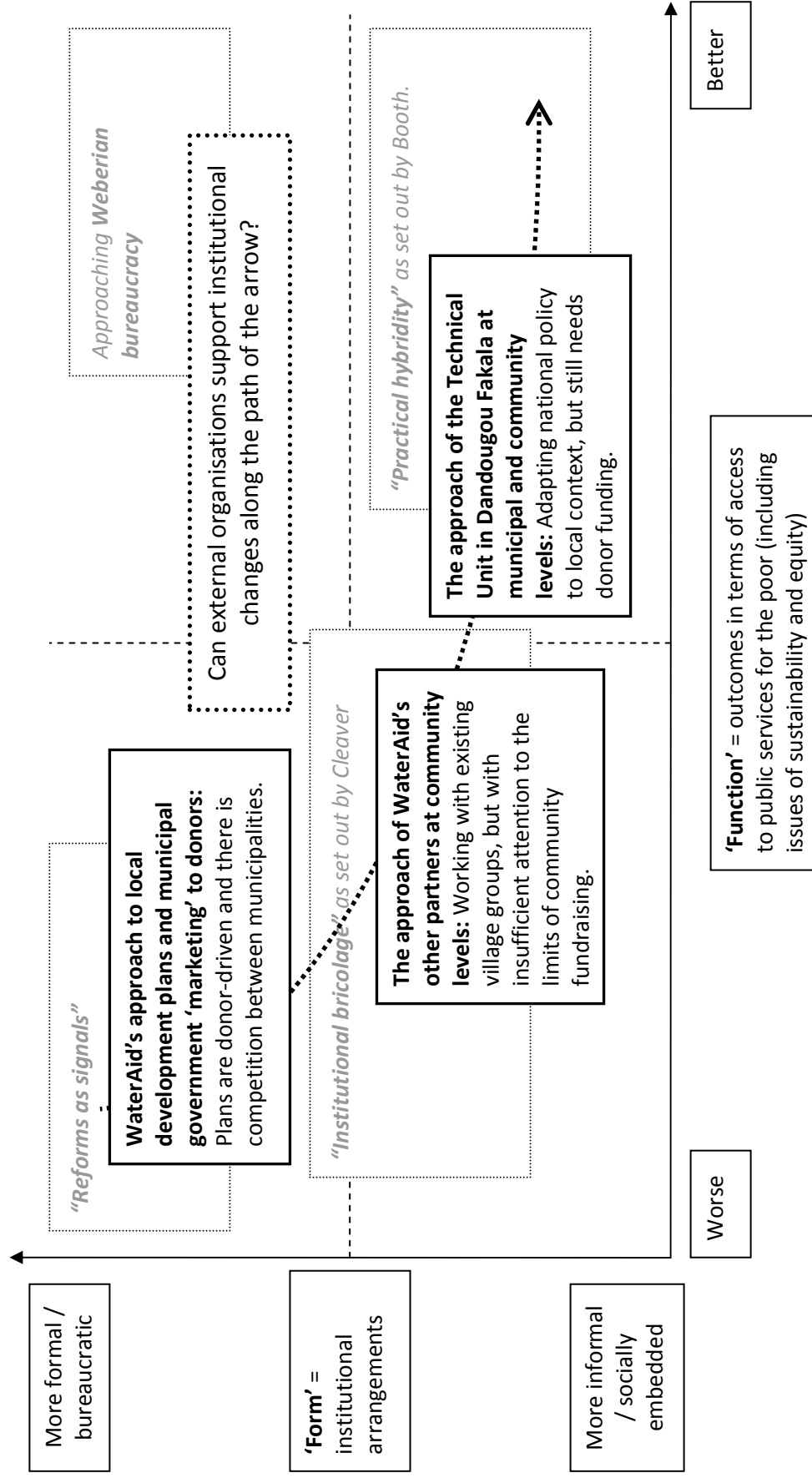


Figure 8.1 therefore demonstrates how different elements of WaterAid’s work reflect different approaches and results. On the left of the diagram are those which represent aspects of “reforms as signals” (Andrews 2013), where institutional arrangements have a bureaucratic form but lack the intended function. On the right are parts of WaterAid’s work which approach the ideas of “practical hybridity” (Booth 2012) through supporting institutional arrangements which are more socially embedded, but in this case where the potential for locally-driven solutions to effectively deliver services is limited by wider constraints such as funding (in contrast to the more optimistic observations of Booth and the APPP). The diagram provides a way of thinking about what forms of institutional change external organisations such as WaterAid are able to support - can they help promote changes further along the dotted arrow?<sup>53</sup>

#### **8.4. Recommendations for WaterAid and other NGOs**

In this section I draw out recommendations from the findings of this research. These suggestions are targeted at WaterAid, but I emphasise where there is wider relevance for other organisations. This includes other NGOs in the water and sanitation sector, as well as those working on other issues of public services and local governance. I split the recommendations into two parts. I firstly set out those that are primarily concerned with WaterAid’s own programme approaches in Mali. I then turn to recommendations which link to wider sector issues and which have implications for WaterAid’s policy and advocacy work.

##### **For programme approaches**

The first programmatic recommendation for WaterAid and its partners is to incorporate simple ways of tracking expenditure on different cost components and the service levels received by users into their own monitoring processes, especially for capital maintenance

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<sup>53</sup> There is a similarity between the upper part of the left-hand axis of Figure 8.1 and the way de Koning (2011) describes the three possible outcomes for institutional arrangements that can occur when an external organisation tries to introduce new institutions to a community. These three possibilities are aggregation (accepting the new ideas by blending them with existing local norms), alteration (partial blending) or articulation (rejecting the new institutions). However, I suggest that Figure 8.1 provides an additional way of thinking about the role of external organisations in influencing institutional change because it emphasises the outcomes in terms of the resulting function as well as the form of the institutional arrangements.

expenditure and direct support costs. Having this information available would enable WaterAid and its partners to discuss the cost-effectiveness of their ongoing work compared to other possible approaches, without the need for retrospective studies such as this one. A similar key message emerged from the six other country programmes where WaterAid undertook research on financial sustainability during 2012. Discussions following that research concluded that WaterAid could not specify how much it was contributing to recurrent costs in the areas where it worked and should therefore “take steps to ensure that data on costs and service levels is continually available from WaterAid’s own processes” (Jones 2013a: 12). This could possibly be as part of the introduction of WaterAid’s Post-Intervention Monitoring Surveys (PIMS), a process for monitoring the results of the work of WaterAid and its partners up to ten years after the initial intervention.

At the final workshop discussing the results and implications of the *Sustainability Framework* studies in Mali in November 2011, WaterAid’s partners agreed to seek ways of integrating different possible elements of monitoring into their work from the 2012-13 financial year onwards. This would include the monitoring of water point functionality and usage required for their own work, for updating the national water point database in Mali and for WaterAid’s own Post-Intervention Monitoring Surveys. Improved monitoring of expenditures on different cost components was intended to form part of this if possible, building on simple tools already developed by the Technical Unit of Dandougou Fakala. However, progress on this was difficult in 2012 due to the coup d’état and staff changes within WaterAid, which I explain further at the end of this section.

The second recommendation is for WaterAid to discuss how local cost-sharing arrangements might realistically be expected to change within the time periods that WaterAid currently uses for planning (yearly plans, three-year planning and budget cycles and five-year strategies) and beyond. For example, I have shown that the model of municipal water and sanitation Technical Units promoted by WaterAid is currently not affordable for local governments. It would be helpful for WaterAid to discuss over what timeframe they think municipalities will continue to rely on funds from WaterAid (or a combination of funds from WaterAid and other donors), or if there are lower cost approaches which could be used until a future point where local governments are able to access sufficient revenue from taxes and central government transfers. I discuss this point in the next section related to WaterAid’s advocacy. WaterAid has committed to work with the



same local government partners in Mali until at least 2015 because of the time period of its current country strategy and the Local Millennium Development Goal Initiative. Cotton et al. (2013), in an evaluation of the work of seven other WaterAid country programmes, suggest that WaterAid in general needs to do more work on developing exit strategies. However, given the additional challenges in Mali since the coup and the extremely uncertain context, it seems difficult to put a timeframe on an exact exit strategy. As a point of comparison, at the conference of international donors discussing new aid packages to Mali in Brussels in May 2013, Oxfam was lobbying for aid commitments to be for a period of at least 15 years (Oxfam 2013).

A key internal challenge for both these ideas is staff turnover of the WaterAid team in Mali. I explained in Chapter Four the difficulties posed to the continuity of some of the research by the departure of members of the programmes and policy team during the process.<sup>54</sup> Cotton et al. (2013) note that high turnover and lack of technical expertise is a widespread problem in WaterAid country programmes, partly due to the relatively small pool of suitable staff in a typical developing country's WASH sector, a problem which also affects Mali (Koestler and Toubkiss 2010). An example of the effect of this difficulty came from one of WaterAid's Technical Unit partners, who told me that they had planned to hold meetings in their municipality in 2012 in order to discuss and clarify local cost-sharing and monitoring responsibilities, as agreed in principle by all WaterAid's partners after the sustainability workshops in 2011. However, due to the key point of contact in WaterAid leaving the organisation, the partner did not receive the funding required for these activities (pers. comm., 15 March 2013).

### **For policy and advocacy**

The recommendations in this section are intended for WaterAid and other NGOs, building on the programmatic recommendations to suggest what areas could be priorities for external advocacy and how it might be possible to open up national policy debates.

The first recommendation is to promote national debate about what support is really

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<sup>54</sup> Since I first began working with WaterAid in Mali in 2009 (during the research for my Masters dissertation), almost the entire programmes and policy team has been replaced; only one out of eight of these members of staff remains.

required for community management, how this can be provided and who should contribute to paying for it. As I explained in Chapter Five, there have been recent acknowledgements from the national water directorate that there is a need to reflect on the progress of decentralisation in the water sector (DNH 2012c). This could represent an opportunity for discussing more openly the pros and cons of different possible forms of direct support to communities, since the existing approaches that I have set out in this thesis differ significantly in the activities they undertake, their costs and how they are financed. WaterAid's national-level policy work already includes promoting the model of municipal Technical Units as a way for local governments to fulfil their legal responsibility to ensure rural water supply. However, this advocacy has a broad objective of helping local governments lobby central government and donors for more funding, rather than discussing the details of how this funding might best be used to both deliver new investment and support existing services. If WaterAid is able to work with local actors to develop simple monitoring of service levels, as discussed above, this can also help feed into the debate about the relative merits of different approaches to service delivery and financing.

One specific possibility to discuss as part of this debate is the idea of sharing the costs of support provided by Technical Units (or a similar model) between different municipalities to benefit from economies of scale, while still providing a greater level of support to communities than the STEFI system. This approach is known as "*intercommunalité*" in Mali and is recognised as an option in policy (DNH 2007). WaterAid has already trialled this in two adjacent municipalities, which share a coordinator for the WASH Technical Unit.

The second recommendation is for WaterAid and others to use their advocacy work to promote national-level discussions which begin the process of clarifying the policy on capital maintenance and how it should be implemented. As a recent global review of financing practices for capital maintenance of rural water supply systems concludes, a key first step in improving capital maintenance is to clarify responsibility and the long-term financial implications (Fonseca et al. 2013). Where there is a lack of structured existing approaches and a country's sector is aid-dependent, Fonseca et al. suggest building on current *ad hoc* practices to develop a better-planned 'front-loading' approach. This entails any project for capital investment allocating a certain percentage of its funds to capital maintenance of existing infrastructure in the geographic area in question. This should be co-ordinated through pooling funds from different donors. Mali already adopts elements of this approach;

the national water directorate plans for a certain number of infrastructure rehabilitations to be undertaken every year, in addition to new construction. However, greater clarity on what WaterAid's partners termed "major repairs" is required i.e. those infrequent repairs which are not complete rehabilitations but are rarely funded by user contributions as intended in policy.

### **8.5. Directions for future research**

I conclude this thesis with suggestions for three areas of future research which could build on the work undertaken here. These are: applying the extended political economy analysis framework to the post-coup context; analysing approaches to influencing institutional change in other sectors and by other organisations; and assessing the recurrent costs of rural water services in different geographic contexts and for different technologies in Mali.

Firstly, I propose using the extended political economy analysis framework developed here to analyse in greater depth the changes in Mali since the coup d'état, such as the weakening of the government and the arrival of new NGOs and donors, and what these factors might mean for the future of the rural water sector. It may be that the political crisis represents a potential moment for outsiders to influence institutional change (Green 2008; Hickey 2009a; Andrews 2013). For example, the potential launch of new donor-funded programmes for the sector at a time when there are likely to be large numbers of water infrastructures requiring rehabilitation might represent an opportunity to discuss longer-term approaches to capital maintenance, as suggested in the recommendations. Such analysis could be undertaken as a collaboration between WaterAid's policy team and other actors, involving further interviews and discussions at sector level in Mali.

Secondly, the framework for understanding institutional change used in this thesis could be applied to other sectors and/or organisations, mapping other approaches and outcomes in a similar way to the method I presented in Figure 8.1. One example of direct relevance to WaterAid could be the adoption of the Community-Led Total Sanitation (CLTS) approach in the sanitation sector in Mali. CLTS has been promoted in Mali since 2008 and is now an approach officially endorsed by the sanitation directorate. WaterAid itself has piloted CLTS in selected villages since 2008 and undertaken initial evaluations of the process in 2010.

WaterAid and its partners explicitly state that they have “contextualised” CLTS, using elements of the CLTS approach together with aspects of marketing particular sanitation products such as concrete latrine slabs (workshop 10-12 Feb 2011). This strategy is in contrast to the national policy and the work of other actors in the sector, who use approaches much closer to the original form of CLTS (*The Bamako CLTS Consensus* 2010). The example of CLTS suggests that in this case WaterAid and its partners are more open about how their own local-level work involves adapting sector reforms, and could provide an interesting topic for analysing institutional change in another part of the WASH sector.

A third possibility for future research would be to investigate the recurrent costs and cost-sharing arrangements of rural water supply in different geographic areas of Mali and for different types of water infrastructure. This could include areas where there are fewer alternative unimproved sources of drinking water available (for example, areas where the hydrogeological characteristics mean there are fewer hand-dug wells), and therefore more reliance on improved sources. In terms of technology type, research could be extended to consider costs and cost-sharing for small piped systems (for villages with a population of over 2,000). I have discussed these systems in this thesis in reference to the STEFI model of direct support, which so far has focused on small piped systems. However, insufficient data was available from WaterAid’s areas of work about the costs of operation and minor maintenance and capital maintenance expenditure of such systems.

Two factors make this a relevant topic for future research. Firstly, the rate of installation of small piped systems is increasing in Mali relative to the development of new point sources such as boreholes fitted with handpumps (DNH 2012b). Secondly, the WASHCost project concludes that the recurrent costs of such systems are generally higher than for point sources such as handpumps (Burr et al. 2012). Understanding the likely additional costs (and hopefully higher service levels) is therefore important in the Mali context. Although I suggested in Section 8.4 that WaterAid should give priority to ongoing costs monitoring over further retrospective studies, an exception could be made for small piped systems. There are two reasons for this: most information will need to come from outside WaterAid’s own areas of work (but could inform their future planning), and useful data should already be available from the organisations operating the STEFI system. This may require some further analysis to categorise expenditures according to the WASHCost system, but not extensive additional fieldwork.

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## Appendix 1 - List of all research activities

### A1.1. List of interviews

*Note:*

- All interviewees have been anonymised.
- Repeat interviews with the same person are marked with a \*.

*Interviews as follow-up to Masters research:*

<b>Date</b>	<b>Position / affiliation of interviewee(s)</b>	<b>Gender</b>	<b>Location</b>
23 Sept 2010	Former Deputy Mayor	M	Yelekebougou
23 Sept 2010	Community member	M	Yelekebougou
23 Sept 2010	Former councillor	M	Yelekebougou
23 Sept 2010	Informal handpump attendants	MM	Yelekebougou
23 Sept 2010	Matron, clinic	F	Yelekebougou
23 Sept 2010	Community member	M	Yelekebougou
23 Sept 2010	Community member	M	Yelekebougou
27 Sept 2010	WASH coordinator, AMEPPE NGO	M	Bamako
30 Sept 2010	President and members of water management committee	MMF	Fansiracoro
01 Oct 2010	WASH field agent, AMEPPE NGO	M	Bamako
02 Oct 2010	President of water management committee	M	Guily
16 Oct 2010	Community member	M	Guily
16 Oct 2010	Members of water management committee	MM	Fansiracoro
17 Oct 2010	Handpump mechanic	M	Sanankoro

*Initial interviews for sector context, discussion of research ideas and case study selection:*

<b>Date</b>	<b>Position / affiliation of interviewee(s)</b>	<b>Gender</b>	<b>Location</b>
01 Oct 2010	WASH coordinator, municipal Technical Unit	M	Commune III, Bamako
04 Oct 2010	WASH coordinator, AMASBIF NGO	M	Bamako
07 Oct 2010	President of water management committee	M	Point G, Commune III
12 Oct 2010	WASH coordinator, JIGI NGO	M	Bamako
14 Oct 2010	WASH coordinator, municipal Technical Unit	M	Kolokani
15 Oct 2010	Innovations for Poverty Action	MF	Bamako
17 Oct 2010	Deputy President of Women's Association	F	Sanankoro
20 Oct 2010	WASH coordinator, AMPDR NGO*	M	Bamako
25 Oct 2010	Treasurer of water management committee	F	Kati
26 Oct 2010	WASH coordinator and Director, ALPHALOG NGO	MM	Bamako



*Interviews on national sector issues and self-supply:*

<b>Date</b>	<b>Position / affiliation of interviewee(s)</b>	<b>Gender</b>	<b>Location</b>
13 Jan 2011	WASH technical advisor, Direction National de l'Hydraulique	M	Bamako
19 Jan 2011	WASH manager, UNICEF	M	Bamako
14 Feb 2011	WASH technical advisor, Danish Embassy	M	Bamako

*Interviews on national sector issues after the coup d'état (undertaken remotely):*

<b>Date</b>	<b>Position / affiliation of interviewee(s)</b>	<b>Gender</b>	<b>Location</b>
21 Nov 2012	WASH Coordinator, Helvetas	M	Bamako
21 Nov 2012	WASH Coordinator, GWI	M	Bamako
28 Nov 2012	Coordinator, CAEPHA	M	Bamako
3 Dec 2012	Coordinator, CN-CIEPA	M	Bamako

*Interviews on self-supply with key informants at national and regional levels:*

<b>Date</b>	<b>Position / affiliation of interviewee(s)</b>	<b>Gender</b>	<b>Location</b>
02 Dec 2010	WASH field agent, municipal Technical Unit*	M	Kolokani
03 Dec 2010	Hygiene officers	MM	Kolokani
09 Dec 2010	WASH field agent, AMPDR NGO	M	Dialakoroba
05 Jan 2011	Chief of water section, Direction National de la Sante*	M	Bamako
24 Feb 2011	WASH field agent, AMPDR NGO	M	Dialakoroba
03 Mar 2011	WASH coordinator, AMPDR NGO*	M	Bamako
29 Mar 2011	Hygiene and Sanitation Officer, Regional Health Centre*	M	Dioila
10 June 2011	Hygiene and Sanitation Officer, Regional Health Centre*	M	Dioila

*Interviews on self-supply implementation at municipal and community levels:*

In two villages in the municipality of Dialakoroba where WaterAid and its partner NGO AMPDR piloted self-supply:

<b>Date</b>	<b>Position / affiliation of interviewee(s)</b>	<b>Gender</b>	<b>Location</b>
09 Mar 2011	Well-owner	M	Kola
09 Mar 2011	Well-owner	M	Kola
09 Mar 2011	Well-owner	M	Kola
09 Mar 2011	Well-owner	M	Kola
09 Mar 2011	Well-owner	M	Kola
10 Mar 2011	Well-owner	M	Bogola
10 Mar 2011	Well-owner	M	Bogola
10 Mar 2011	Well-owner	M	Bogola
24 Mar 2011	Well-owner	M	Kola
24 Mar 2011	Well-owner	F	Kola
25 Mar 2011	Well-owner	M	Bogola
25 Mar 2011	Well-owner	M	Bogola
25 Mar 2011	Well-owner	M	Bogola
25 Mar 2011	Well-owner	M	Bogola
13 Apr 2011	Mason	M	Kola

In three municipalities where UNICEF and the health services piloted self-supply:

<b>Date</b>	<b>Position / affiliation of interviewee(s)</b>	<b>Gender</b>	<b>Location</b>
30 Mar 2011	Mason	M	Massigui
30 Mar 2011	Former President, ASACO (health centre committee)	M	Massigui
31 Mar 2011	President, ASACO (health centre committee)	M	Ngolobougou
31 Mar 2011	Councillor	M	Sirakoro Djedala
31 Mar 2011	Masons	MM	Ngolobougou
08 June 2011	Presidents, ASACO (health centre committee)	MM	Banco
08 June 2011	Well-owner	M	Yaya, Tibougou
08 June 2011	Mason	M	Banco
09 June 2011	President, ASACO (health centre committee)	MM	Ngolobougou
09 June 2011	Well-owner	M	Djigibougou
09 June 2011	Village chief	M	Bafina

*Interviews on community fundraising:*

<b>Date</b>	<b>Position / affiliation of interviewee(s)</b>	<b>Gender</b>	<b>Location</b>
24 Mar 2011	Record-keeper, village fund	M	Kola
07 Apr 2011	Involved with village fund	M	Kola
07 Apr 2011	Involved with village fund	M	Kola
07 Apr 2011	Involved with agricultural association fund	M	Kola
07 Apr 2011	Involved with village fund	M	Kola
08 Apr 2011	Involved with agricultural association fund	M	Bogola
08 Apr 2011	Involved with agricultural association fund	M	Bogola
08 Apr 2011	Involved with village fund	M	Bogola
12 Apr 2011	Involved with agricultural association fund	M	Bogola
12 Apr 2011	Village Chief	M	Bogola
21 Apr 2011	Deputy Mayor with responsibility for WASH	M	Dialakoroba
04 May 2011	WASH coordinator, AMPDR NGO	M	Bamako
24 May 2011	Member of family which often completely funds repairs to the handpump near its home	M	Kola

<b>Date</b>	<b>Position / affiliation of interviewee(s)</b>	<b>Gender</b>	<b>Location</b>
24 Aug 2011	WASH field agent, municipal Technical Unit*	M	Kolokani
26 Aug 2011	WASH field agent, municipal Technical Unit*	M	Tioribougou

*Structured interviews and questionnaire on household finances:*

<b>Household code</b>	<b>Date interview 1: male household head re assets and financial instruments</b>	<b>Date interview 2: male household head re income and expenditure</b>	<b>Date interview 3: female household head re assets, instruments, income and expenditure</b>	<b>Location</b>
B7	22 June 2011	08 July 2011	-	Bogola
B5	22 June 2011	08 July 2011	17 Aug 2011	Bogola
B4	22 June 2011	22 July 2011	19 Aug 2011	Bogola
B8	22 June 2011	08 July 2011	22 July 2011	Bogola
B18	22 June 2011	15 July 2011	22 July 2011	Bogola
K12	23 June 2011	07 July 2011	21 July 2011	Kola
K31	23 June 2011	07 July 2011	18 Aug 2011	Kola
K1	23 June 2011	15 July 2011	18 Aug 2011	Kola
K28	23 June 2011	21 July 2011	19 Aug 2011	Kola
K5	06 July 2011	06 July 2011	18 Aug 2011	Kola
K15	23 June 2011	07 July 2011	21 July 2011	Kola

*Interviews and data collection on recurrent costs and municipal financing:*

<b>Date</b>	<b>Position / affiliation of interviewee(s)</b>	<b>Gender</b>	<b>Location</b>
08 Aug 2011	WASH field agent, AMPDR NGO*	M	Dialakoroba
01 Oct 2011	Deputy Mayor with responsibility for finances (previously WASH)	F	Dialakoroba
	Councillor and former Mayor	M	Dialakoroba
03 Nov 2011	Deputy Mayor with responsibility for WASH	M	Kolokani
04 Nov 2011	Handpump mechanic	M	Tioribougou
04 Nov 2011	General Secretary of municipality (civil servant)	M	Tioribougou
11 Nov 2011	Involved with multi-village fund	M	Kola
15 Nov 2011	Registrar for Expenditure of municipality (civil servant)	M	Dialakoroba
22 Nov 2011	Mayor	M	Tioribougou
	Deputy Mayor with responsibility for WASH	M	Tioribougou
	WASH field agent, municipal Technical Unit*	M	Tioribougou
	Registrar for Expenditure of municipality (civil servant)	M	Tioribougou
22 Nov 2011	WASH field agent, municipal Technical Unit*	M	Tioribougou
	Registrar for Expenditure of municipality (civil servant)	M	Tioribougou
22 Nov 2011	Handpump mechanic	M	Kolokani
	Handpump mechanic	M	Kolokani
23 Nov 2011	Deputy Mayor with responsibility for WASH	M	Kolokani
	Deputy Mayor with responsibility for education	M	Kolokani
	General Secretary of municipality (civil servant)	M	Kolokani
	WASH field agent, municipal Technical Unit*	M	Kolokani
23 Nov 2011	WASH field agent, municipal Technical Unit*	M	Tioribougou
23 Nov 2011	Former Deputy Mayor with responsibility for WASH	M	Yelekebougou
23 Nov 2011	Former Mayor	M	Yelekebougou

## A1.2. List of participatory exercises and group discussions

*In the two communities of Bogola and Kola in the municipality of Dialakoroba:*

Village	Date	Type and topic of exercise	Participants
Bogola	01 Mar 2011	Participatory exercise: Mapping water points and discussing usage	Water management committee
Kola	02 Mar 2011		
Bogola	08 Mar 2011	Discussion: sanitation access and community fundraising	Water management committee
Kola	09 Mar 2011		
Bogola	10 Mar 2011	Participatory exercise: typical household income and expenditure	Water management committee
Kola	24 Mar 2011		
Bogola	21 April 2011	Discussion: sharing the recurrent costs of WASH with other actors	Community members
Kola	21 April 2011		
Bogola	25 May 2011	Participatory exercise: categorising essential and desirable household assets	Community members
Kola	24 May 2011		
Bogola	11 Nov 2011	Community fundraising	Women's group
Kola	15 Nov 2011		

*In eight communities considered good examples of collective fundraising by WaterAid's partners in four municipalities (on water point mapping, water usage and community fundraising):*

Village	Municipality	Focus group by WaterAid's partners	Follow-up group interviews by me with water management committees and women's groups
Torokoroni	Kolokani	09 Oct 2011	03 Nov 2011
Yorobougou	Kolokani	07 Oct 2011	03 Nov 2011
Kanekeougou	Tioribougou	05 Oct 2011	04 Nov 2011
Bamabougou	Tioribougou	07 Oct 2011	04 Nov 2011
Tacko	Dandougou Fakala	07 Oct 2011	n/a
Konio Peulh	Dandougou Fakala	30 Sept 2011	n/a
Odioumabougou	Dialakoroba	03 Oct 2011	n/a
Freintoumou	Dialakoroba	05 Oct 2011	n/a

For security reasons I was not able to travel personally to Tacko and Konio Peulh. Follow-up visits were not arranged in Odioumabougou and Freintoumou because I decided additional research where community fundraising only took place after breakdowns would not be useful.

*In eight further communities in four municipalities (on water point mapping and water usage):*

Village	Municipality	Focus group by WaterAid's partners
Tongoye	Kolokani	09 Oct 2011
Mpella	Kolokani	06 Oct 2011
Soninkoro	Tioribougou	09 Oct 2011
Doribougou	Tioribougou	08 Oct 2011
Bougoula	Dandougou Fakala	07 Oct 2011
Konio Marka	Dandougou Fakala	02 Oct 2011
Sanambebe	Dialakoroba	03 Oct 2011
Sonkoria	Dialakoroba	04 Oct 2011

### A1.3. List of workshops and events attended

As participant and observer:

<b>Date</b>	<b>Event</b>	<b>Location</b>	<b>Key links to research</b>
23-25 Nov 2010	Six-Monthly Review of WaterAid and its partners	Bamako	<ul style="list-style-type: none"> <li>Getting to know WaterAid's partners and key current issues of concern.</li> </ul>
31 Jan - 4 Feb 2011	WaterAid West Africa Local Millennium Development Goal Initiative Conference	Ouagadougou, Burkina Faso	<ul style="list-style-type: none"> <li>Presenting results of the Masters research and follow-up.</li> <li>Learning more about approaches from other WaterAid country programmes and other organisations in the West Africa region.</li> </ul>
10-12 Feb 2011	WaterAid workshop on Community-Led Total Sanitation	Segou	<ul style="list-style-type: none"> <li>Understanding the debates within WaterAid and its partners related to financing rural sanitation.</li> </ul>
27-29 April 2011	Annual Review of WaterAid and its partners	Bamako	<ul style="list-style-type: none"> <li>Understanding the initial introduction of the Sustainability Framework to WaterAid's partners, before the workshop in Liberia.</li> </ul>
1-3 June 2011	WaterAid West Africa Sustainability Workshop	Monrovia, Liberia	<ul style="list-style-type: none"> <li>Understanding where the research related to common issues in the West Africa region.</li> <li>Supporting WaterAid in developing ideas for using the Sustainability Framework to help analysis of their work in Mali.</li> </ul>
28-30 Sept 2011	WaterAid workshop on sanitation marketing	Bamako	<ul style="list-style-type: none"> <li>Understanding the debates within WaterAid and its partners related to financing urban sanitation.</li> <li>Contributing to debates on how to analyse willingness to pay for WASH services.</li> </ul>
5-7 Oct 2011	WaterAid workshop on 'marketing' Sector Development Plans	Bamako	<ul style="list-style-type: none"> <li>Understanding the training and process for municipalities seeking funding from donors.</li> </ul>
15 Oct 2011	WaterAid workshop on water point mapping	Bamako	<ul style="list-style-type: none"> <li>Supporting the consultants undertaking the mapping survey in developing the data collection forms and training.</li> </ul>
16-18 Nov 2011	Forum of Mayors	Bamako	<ul style="list-style-type: none"> <li>Understanding how WaterAid approaches national-level advocacy.</li> </ul>

As joint facilitator for at least some sessions:

<b>Date</b>	<b>Event</b>	<b>Location</b>	<b>Key links to research</b>
12-13 Sept 2011	Initial workshop on Sustainability Framework with WaterAid's partners	Bamako	<ul style="list-style-type: none"> <li>• Discussing the initial responses of WaterAid's partners to a questionnaire on sustainability (including challenges defining and monitoring functionality; defining different recurrent costs and financing responsibilities; and evaluating users' willingness to pay).</li> <li>• Planning the field research to be undertaken based on the Sustainability Framework.</li> </ul>
12-14 Oct 2011	Six-Monthly Review of WaterAid and its partners	Bamako	<ul style="list-style-type: none"> <li>• Presenting the results of the Sustainability Framework research based on initial analysis.</li> <li>• Discussing underlying reasons for the challenges identified and initial ideas for addressing them.</li> <li>• Presenting lessons on monitoring and cost-sharing from the municipality of Dandougou Fakala.</li> </ul>
7-8 Dec 2011	Final workshop on Sustainability Framework with WaterAid's partners	Bamako	<ul style="list-style-type: none"> <li>• Agreeing actions to be taken by WaterAid's partners and WaterAid itself based on the results of the analysis, to be included in the planning for the next financial year (2012-13).</li> </ul>

## **Appendix 2 - Copies of research tools**

*Note:*

- All research tools have been translated into English from the original French versions.
- Minor formatting changes have been made to fit the requirements of the thesis layout.

### **A2.1. Outlines of semi-structured interviews**

#### ***Outline of semi-structured interviews with key informants on self-supply***

##### **Introductions**

Informed consent

Name, position, contact details

Brief explanation of my research

How long have you been in this position?

What are your main activities?

What is the structure of the NGO/Technical Unit here?

##### **Water supply situation in the commune**

What documentation exists on water supply in the commune now (numbers and locations of different types ie. forages, PT, PTA, PGD)?

How many people access drinking water from an improved source compared to those who use an unimproved source?

What documentation exists on the history of water supply?

What is the functionality level of handpumps?

##### **Self-supply projects**

What projects have taken place regarding self-supply? When? How many?

What has this involved?

Paying for demonstration wells? Or part-payment? Typical costs and sharing? How many?

Training masons? What level? How many?

Promoting just self-supply?

Making chlorine or javel available?

Who was involved? NGO/Technical Unit? CSCOM? ASACO? Municipality?

What happened afterwards?

Did some people pay for their own wells or improvements?

Did some people come to the NGO/Technical Unit/municipality to ask for help?

Were some communities more active than others?

What water quality monitoring was involved? And what still goes on?

Was it linked to any sanitation activities such as marketing latrine slabs?

What were the successes?

What were the difficulties?

What ideas could address the difficulties?

What is going on now with self-supply?

Does the NGO/Technical Unit/municipality have any budget for self-supply?

What are the general hygiene promotion activities done by the NGO/Technical Unit?



## ***Outline of semi-structured interview with owners of improved or partially improved hand-dug wells***

### **Introductions**

Informed consent  
Brief explanation of my research

### **Household identification**

Name of head of concession  
Name of head of ménage  
Name of interviewee  
Gender of interviewee

### **Quality and reliability**

What is your opinion of the quality of the water from the well? Better or worse than other sources?

What is your opinion of the reliability of the water from the well? Does it dry up? If so, for how many months? Better or worse than other sources?

### **Reasons for having a family well, costs and financing**

When was the well first dug? Why?

What source did you use before?

Who in the household made the decision?

When was the well improved? Why?

Who in the household made the decision?

How did you choose what improvements to make to the well? (own idea, copied demonstration project, copied someone else).

What advice did you seek/receive? (e.g. NGO project or promotion).

Was this done in stages?

Who did the work at each stage?

What was the cost of each stage? (materials and labour for each element)

Who paid? (head of household, someone else)

Did anyone else contribute? (other member of household, someone else e.g. other users)

How was the money raised? (saved, sold something, took loan).

Was it paid all at once or in instalments?

If needed, could you take a loan from someone in the community? (individual or group)

Who?

### **Maintenance of well and treatment of water**

What maintenance do you do to the well? (cleaning, deepening, repairing cement)

How often? How much does this cost?

Do you treat the water in the well? Why/why not?

When did you begin treating the water?

What prompted you to begin treating it?

What do you use?

When was the last time you treated the water?

How much and how often? (in the last 2 years)

Where do you buy it?

How much does it cost per purchase?

How much does it cost per month/year?

Has the water quality ever been officially tested (for example, by an NGO)?

Do you treat the water for drinking in the house? (boiling, filter, solar, chemical)

**Changes before/after improvements to well**

Did the number of people/households who use the well change after/before the improvements?

Did the uses of the water change before/after the improvements?

What are the benefits to the family of the well/the improvements?

What are the benefits to other users of the well/the improvements?

**Other people's views**

Do other people want to have wells like this? Why/why not?

Have you ever given advice to anyone about how to do this?

Why do you think that not everyone in the community has their own well like this?

**Future plans**

Do you plan to make any further improvements in future? What? Why/why not? (quality, reliability, cost).

## ***Outline of semi-structured interview with masons on self-supply***

### **Introductions**

Informed consent  
Name, position, contact details  
Brief explanation of my research

### **Key activities**

Do you work just as a mason or do you have other livelihoods (agriculture, livestock, small business)?  
What are your main activities as a mason? (mud brick houses, cement brick houses, cement plastering, well-improving, making latrine slabs)  
How much time do you spend as a mason?  
How many days did you do mason work in the previous month?  
What do you do in the rainy season?  
Do you work only in this village or in other villages too?  
Do you do other work such as digging wells or latrines?

### **Training**

Have you been trained by NGOs? What? When?  
What further training would you like?  
Have you been paid by NGO projects? What? When?

### **Self-supply projects** [questions draw on Sutton (2009)]

What do you think of the demonstration wells and what further improvements do they think could be made?  
Is the cost of prototypes proving affordable to individuals/communities?  
Could costs be reduced?  
Could credit be accessed by well-owners? If so, where?  
How many requests have there been to come and improve other wells? How many of these have already been implemented?  
Has anybody else copied some of the features (if not all) of the demonstration wells since these were constructed? If so what, and how many?

### **Payment**

How much do you typically get paid per day?  
Is payment always in cash or sometimes in-kind?  
Does this change for different activities?  
Is there a market for improving traditional wells? Would it be profitable for you? What price would you charge people for improving their well? How would you promote it?

## ***Outline of semi-structured interview with key informants and community groups on collective fundraising***

Introduction

Informed consent

Questions for us?

### **Name, position, how long held**

#### **How does the group function?**

- Members – number and criteria
- Committee and meetings
- When was it set up and by who?
- What is the current support from NGOs or the municipality?
- Have the activities changed over time?

#### **Mechanisms of raising money**

- Types of mechanism
- How much per time
- How much per season/year
- Regularity or not
- Actual money available at the moment
- Money flowing in and out in last year [checking previous focus group figures]
- Anything in-kind?

#### **Types of expenditure – water/other**

- Examples
- Loans / gifts / saving and amounts of these
- If loans, what are the rates?
- Financial links to individuals
- Actual written records and if I can see them

#### **Links to other local funds**

- Community fund / chief's fund / youth fund / agricultural association / others.
- In general, what is the most common need for a lump sum of money?
- What is the village's most common way of getting together a lump sum of money?

#### **For water management committee only, for further background:**

- Composition of committee (M/F)
- When was the committee formed? How? Were there previous committees or groups?
- How does the committee function now? What the key activities? How often does it have meetings? How are decisions made? How are other villagers or leaders involved? What records are kept?
- Is the committee just for water, or for sanitation too? Are there separate committees?
- What training have members of the committee received? Who was this? Did other members of the community receive training too?
- What do NGOs do in the village? Construction activities? Training? Awareness?

***Outline of semi-structured interview with municipal officers on 'marketing' to donors***

Current position in the municipality  
Position when he or she received the training  
Date of training

Can you describe the marketing training that the municipality has received?  
... and you personally?

What is your definition of marketing?

What were your goals for the marketing process, after the training?

What did you do?

For example:

- Raising awareness of others in the municipality.
- Identification of donors, private companies, associations of migrants.
- Making contact and arranging meetings with potential donors.
- Promotion or use of the Sector Development Plan.
- Preparation and submission of project proposals.

What support have you received from WaterAid and its partner NGOs?

Who was involved in the process?

At what levels did you undertake activities? (local / national / collaboration with other municipalities)

How much money have you raised?

Have you received in-kind donations as well?

What elements of success did you have?

What were the challenges?

What process of monitoring and follow-up did you use?

Was money raised (if any) used for investment or operating costs?

Do you have any lessons or advice for other municipalities?

**A2.2. Forms for collecting data on recurrent costs**

**Form for collecting data on recurrent costs at municipal levels: operating and minor maintenance and capital maintenance expenditure**

**Expenditures made by municipalities or WaterAid's local NGO partners on rural water services: new installations, rehabilitations and repairs**

Commune :		Name and position of person filling in form :				
Year	Village	Type of infrastructure	Type of expenditure	Intervening actor :	Amount (CFA)	Comments
Fill in for the form for the years <b>2008, 2009, 2010</b> and <b>2011</b> if possible		<p><i>Options :</i></p> <ul style="list-style-type: none"> <li>• Small piped system.</li> <li>• Tapstand on small piped system.</li> <li>• Borehole fitted with handpump.</li> <li>• Modern well.</li> <li>• Improved traditional well.</li> </ul>	<p><i>Options :</i></p> <ul style="list-style-type: none"> <li>• New installation</li> <li>• Rehabilitation</li> <li>• "Major repair" (= more than 50,000 FCFA)</li> <li>• "Minor repair" (= less than 50,000 FCFA)</li> </ul>	<p><i>Options :</i></p> <ul style="list-style-type: none"> <li>• Municipality / Technical Unit.</li> <li>• NGO partner of WaterAid</li> <li>• State (<i>if known</i>)</li> <li>• Other NGO (<i>if known</i>)</li> <li>• Users (<i>if known</i>)</li> </ul>	Give the total amount, including labour costs	
Example : 2009	Baga	Borehole fitted with handpump.	"Minor repair" : replacing chain in handpump, including labour	Technical Unit	35 000 FCFA	

(Continue overleaf if necessary with a similar table)

**Form for collecting data on recurrent costs at municipal levels: expenditure on direct support**

**Expenditures made by municipalities or WaterAid's local NGO partners on rural water services: new installations, rehabilitations and repairs**

Commune :	Name and position of person filling in form :			
	2008	2009	2010	2011
Staff salaries of the municipal Technical Unit or WaterAid's local NGO partner				
Others (e.g. transport and office costs)				
<b>Total</b>				

### A2.3. Forms for group interviews and household surveys

#### *Form for group interviews with representatives of the water management committee and users (by WaterAid's partners)*

**Study on sustainability, recurrent costs and willingness to pay: form for group interviews with representatives of the water management committee and users**

WaterAid Mali and its partners, Sept - Oct 2011

Municipality	
Village	
Date	
Name(s) of surveyor(s)	

List of participants, including their position in the water management committee (if applicable):

<b>Name</b>	<b>Position in the water management committee or other village association (if applicable):</b>

(Continue overleaf if necessary)



**1. Simple profile of the village**

Population	
Number of households	

Religions (principal)	
Religions (other)	
Ethnic groups (principal)	
Ethnic groups (others)	

Principal agricultural activities	
Principal non-agricultural activities	
Principal livestock-rearing activities	
Other economic activities	

## 2. Participatory community mapping, including:

- All 'modern' water points.
- Other traditional communal water points or those shared by multiple households, even if these are unimproved sources.  
(**Give a number or specific name to each water point** on the map, at use the same numbers or names to write the lists on the following pages)
- The boundaries to the area of the villages where homes are situated.
- The names of different neighbourhoods (if applicable).
- All the public sanitation facilities.
- Public buildings (for example, the school, the mosque, the church, the health centre)  
(**It is not necessary to include individual households on the map**)

**3(a). List of 'modern' water points (handpumps, modern wells, tapstands)**

Note of definitions of functionality:

- A. The water point functions and is used as a source of drinking water by the population
- B. The water point functions, but only during certain periods of the year.
- C. The water point functions, but it is not used as a source of drinking water by the population (for example for reasons of distance or taste).
- D. The water point does not function and has not functioned for at least one month.
- E. The water point does not function, but became non-functional within the last month.

Number or name of water point (to correspond with the community map)	Neighbourhood	Year of installation	Source of financing for capital investment	Contribution of the village (Specify the amount and if the contribution was cash or in-kind)	Functionality : A, B, C, D or E (see categories above)	If the water point is not functional or not used for drinking water, why?

(Continue overleaf if necessary)

**3(b). Opinion of the population on 'modern' water points**

In general, what is the opinion of the population on the modern water points regarding the following factors? If there are significant differences between the different water points, you can note them in the spaces for comments:

<p><b>Perception of water quality</b></p> <p><input type="checkbox"/> Good = potable without treatment, and for others uses too  <input type="checkbox"/> Average = for cooking and other domestic uses but not drinking  <input type="checkbox"/> Not good = for other uses, but not drinking or cooking</p>	<p><b>Perception of water quality</b> – other comments</p>
<p><b>Accessibility in terms of distance</b></p> <p><input type="checkbox"/> Accessibility is good for all households  <input type="checkbox"/> Accessibility is good for some households, but not all  <input type="checkbox"/> Accessibility is difficult for all households</p>	<p><b>Accessibility in terms of distance</b> – other comments</p>
<p><b>Reliability according to seasonal changes</b></p> <p><input type="checkbox"/> Adequate during the whole year  <input type="checkbox"/> Adequate only during certain seasons or periods</p>	<p><b>Reliability according to seasonal changes</b> – other comments</p>
<p><b>Reliability according to the frequency of breakdowns</b></p> <p><input type="checkbox"/> Breakdowns are rare and repairs are made without delay  <input type="checkbox"/> Breakdowns are rare but repairs are not made quickly  <input type="checkbox"/> Often broken down</p>	<p><b>Reliability according to the frequency of breakdowns</b> – other comments</p>
<p><b>Types of uses</b> (tick all that apply)</p> <p><input type="checkbox"/> Drinking  <input type="checkbox"/> Cooking  <input type="checkbox"/> Other domestic uses (e.g. bathing, washing clothes)  <input type="checkbox"/> Productive uses (e.g. watering animals, gardens)</p>	<p><b>Types of uses</b> – other comments</p>

**4(a). List of principal alternative water points (traditional wells, streams, ponds)**

Note of definitions of functionality:

- A. The water point functions and is used by the population
- B. The water point functions, but only during certain periods of the year.
- C. The water point functions, but it is not used by the population (for example for reasons of distance or taste).
- D. The water point does not function and has not functioned for at least one month.
- E. The water point does not function, but became non-functional within the last month.

Number or name of water point (to correspond with the community map)	Neighbourhood	Year of installation	Source of financing for capital investment	Contribution of the village (Specify the amount and if the contribution was cash or in-kind)	Functionality : A, B, C, D or E (see categories above)	If the water point is not functional or not used for drinking water, why?

(Continue overleaf if necessary)

**4(b). Opinion of the population on the alternative water points**

In general, what is the opinion of the population on the modern water points regarding the following factors? If there are significant differences between the different water points, you can note them in the spaces for comments:

<p><b>Perception of water quality</b></p> <p><input type="checkbox"/> Good = potable without treatment, and for others uses too  <input type="checkbox"/> Average = for cooking and other domestic uses but not drinking  <input type="checkbox"/> Not good = for other uses, but not drinking or cooking</p>	<p><b>Perception of water quality</b> – other comments</p>
<p><b>Accessibility in terms of distance</b></p> <p><input type="checkbox"/> Accessibility is good for all households  <input type="checkbox"/> Accessibility is good for some households, but not all  <input type="checkbox"/> Accessibility is difficult for all households</p>	<p><b>Accessibility in terms of distance</b> – other comments</p>
<p><b>Reliability according to seasonal changes</b></p> <p><input type="checkbox"/> Adequate during the whole year  <input type="checkbox"/> Adequate only during certain seasons or periods</p>	<p><b>Reliability according to seasonal changes</b> – other comments</p>
<p><b>Reliability according to the frequency of breakdowns</b></p> <p><input type="checkbox"/> Breakdowns are rare and repairs are made without delay  <input type="checkbox"/> Breakdowns are rare but repairs are not made quickly  <input type="checkbox"/> Often broken down</p>	<p><b>Reliability according to the frequency of breakdowns</b> – other comments</p>
<p><b>Types of uses</b> (tick all that apply)</p> <p><input type="checkbox"/> Drinking  <input type="checkbox"/> Cooking  <input type="checkbox"/> Other domestic uses (e.g. bathing, washing clothes)  <input type="checkbox"/> Productive uses (e.g. watering animals, gardens)</p>	<p><b>Types of uses</b> – other comments</p>

### 5. Usage of different water points

Approximately how many households use <b>modern</b> water points as their principal source of drinking water?	
Approximately how many households use <b>alternative</b> water points as their principal source of drinking water?	
If there are households which use alternative water points as their principal source of drinking water, <b>why</b> do they use alternative water points over modern water points?	<input type="checkbox"/> Cheaper <input type="checkbox"/> Closer to the home <input type="checkbox"/> Perceived better quality <input type="checkbox"/> Greater reliability <input type="checkbox"/> Other - <i>specify</i> :

### Payment and fundraising

Describe the system of payments or fundraising which has been adopted by the village to cover the costs of operation, maintenance and repairs of water points	
Does the community use the same system to raise money for the expenditures for each water point in the village or are there different systems according to the water point?	
Is there money saved and kept by the water management committee or by other persons to serve as funds for the operation, maintenance and repairs of water points?  If yes, how much money is saved and available at the moment?	

**6(a). History of community contributions to the repairs of water points since 2006 (if known)**

**By the community, for all the modern water points in the community:**

*Note the following definitions:*

“Small repair” = Spare parts and labour costing < 50,000 FCFA.

“Large repair” = Spare parts and labour costing > 50,000 FCFA.

“Rehabilitation” = Complete replacement of the whole lifting mechanism and/or the surrounding superstructure.

“Major rehabilitation” = Complete rehabilitation of the whole works (including e.g. clearing borehole or excavating collapsed well).

	2006	2007	2008	2009	2010	2011
List of the water points (according to the names or numbers on the map) which needed a repair or rehabilitation during each year						
Total number of “small repairs”						
Total number of “large repairs”						
Total number of “rehabilitations”						
Total number of “major rehabilitations”						
Total cost of “small repairs” (FCFA)						
Total cost of “large repairs” (FCFA)						
Total cost of “rehabilitations” (FCFA)						
Total cost of “major rehabilitations” (FCFA)						
Other costs of the water management committee						
Comments on how the funds were raised						

(Continue overleaf if necessary)



**6(b). History of contributions by other actors to the repairs of water points since 2006 (if known)**

**By other actors, for all the modern water points in the community:**

*Note the following definitions:*

“Small repair” = Spare parts and labour costing < 50,000 FCFA.

“Large repair” = Spare parts and labour costing > 50,000 FCFA.

“Rehabilitation” = Complete replacement of the whole lifting mechanism and/or the surrounding superstructure.

“Major rehabilitation” = Complete rehabilitation of the whole works (including e.g. clearing borehole or excavating collapsed well).

	2006	2007	2008	2009	2010	2011
List of the water points (according to the names or numbers on the map) which needed a repair or rehabilitation during each year						
Total number of “small repairs”						
Total number of “large repairs”						
Total number of “rehabilitations”						
Total number of “major rehabilitations”						
Total cost of “small repairs” (FCFA)						
Total cost of “large repairs” (FCFA)						
Total cost of “rehabilitations” (FCFA)						
Total cost of “major rehabilitations” (FCFA)						
Other costs of the water management committee						
Comments on how the funds were raised						

(Continue overleaf if necessary)

## 7. Mechanisms for collective fundraising in the community

*Include all the mechanisms or relevant groups, for example:*

Water management committee	Village elders	Women's groups
General village fund	Farming groups	Youth groups Others

Name of mechanism or group (whether a local tradition or proposed by an NGO)	Name and position of key informant (e.g. village chief, committee president, treasurer)	Who participates in this system? (e.g. heads of households / all the village / women / young men etc.)	Description of how funds are raised through this system	What types of expenditures are paid with this system (if possible, give specific examples of what the money was spent on and how much)	Typical amount raised per year (FCFA)	Actual amount raised in the last year (FCFA)

(Continue overleaf if necessary)

**8. Other community organisations**

Name of groups, associations or community organisations	Year of creation	Who participates in this system? (e.g. heads of households / all the village / women / young men etc.)	Objectives	Activities and key achievements

(Continue overleaf if necessary)

**Form for rapid household survey including Mali Poverty Scorecard indicators and basic water and sanitation issues (by WaterAid's partners)**

[Questions 1-10 are based on Mali Poverty Scorecard indicators. Questions A-G are on basic water and sanitation issues]

Date	Hamlet	Name of head of concession
Time	Code of concession	Name of head of ménage
Commune	Latitude	Name and gender of interviewee
Village	Longitude	Code of ménage

Q	Question	Options
A	In this survey, we define 'household' as the 'alimentary unit' of people who live together and prepare and consume meals together. How would you describe your 'alimentary unit'?	1. A single ménage which is not part of a larger concession 2. A ménage which is part of a larger concession which is made up of more than one ménage 3. A concession made up of more than one ménage
B	How many people live in the household?	#
1	How many household members are 11 years old or younger?	#
2	How many members of the household usually work as their main occupation in agriculture, animal husbandry, fishing, or forestry?	#
3	What is the main construction material of the roof of the residence?	A. Tile or thatch / B. Mud, corrugated metal sheets, concrete, or other
4	What is the main construction material of the roof of the residence?	A. Partly cement or others / B. Cement
C	Does the concession have its own hand-dug well in or near the house (not just for gardens?)	1. No 2. Yes, unimproved traditional well 3. Yes, semi-improved 4. Yes, improved to national norms

Q	Question	Options
5	What is the household's main source of drinking water?	<p>A1. Other unimproved source (pond, stream etc)  A2. Neighbour's unimproved hand-dug well  A3. Own family's unimproved hand-dug well  A4. Neighbour's semi-improved hand-dug well  A5. Own family's semi-improved hand-dug well</p> <p>B6. Neighbour's improved hand-dug well  B7. Own family's improved hand-dug well  B8. Community improved traditional hand-dug well  B9. Community large-diameter modern well  C10. Handpump on protected borehole</p>
D	Do you treat drinking water?	<p>1. No  2. Boiling  3. Filtering  4. Chlorination in the well  5. Chlorination at home  6. Other</p>
E	What is the household's main source of domestic non-drinking water (bathing and washing)?	<p>A1. Other unimproved source (pond, stream etc)  A2. Neighbour's unimproved hand-dug well  A3. Own family's unimproved hand-dug well  A4. Neighbour's semi-improved hand-dug well  A5. Own family's semi-improved hand-dug well</p> <p>B6. Neighbour's improved hand-dug well  B7. Own family's improved hand-dug well  B8. Community improved traditional hand-dug well  B9. Community large-diameter modern well  C10. Handpump on protected borehole</p>
6	What toilet arrangements does the household have?	<p>A. Others  B. Latrine (private or shared with other households) or flush toilet (private inside, private outside, or shared with other households)</p>
F	How many improved latrines does the concession have?	#
G	How many traditional latrines does the concession have?	#
7	Does the household own any television sets?	A. No / B. Yes
8	Does the household own any radios?	A. No / B. Yes
9	Does the household own any irons?	A. No / B. Yes
10	Does the household own any motorbikes?	A. No / B. Yes

**Form for questionnaire and semi-structured interview with male household head on household finances (interview 1)**

- Introductions.
- Reminder of purpose of study – understand how people manage finances, but not a project.
- Responses will be anonymous and can decline any question, or leave the study at any time.
- We will return in 2 weeks if that is ok.
- Are there any questions for us?

**1. Household identification**

Date	Commune	Name of head of concession	
Time	Village	Name of head of ménage	
Region	Hamlet	Code of concession	
Cercle	Neighbourhood	Code of ménage	

Name of man who knows most about household finances	
Name of woman who knows most about household finances	
Occupations	
General availability and willingness for interviews	
Names of persons interviewed today	
In general, are you aware of all financial transactions of the household or just those made yourself?	

## 2. Household assets

Type of asset	Asset	Number	Est. value if sold (FCFA)	Approx cost when bought (FCFA)	Who was involved in the decision to buy the asset?	How bought? - Cash saved (where?) - Loan (from who?) - Gift (from who?) - Sold something (what?) - Other
<b>Animal</b> (cow, sheep, goat, donkey, chicken, other)						
<b>Transport</b> (car, motorbike, bicycle, cart, other)						
<b>Electrical</b> (radio, TV, mobile phone, car battery, solar panel, other)						
<b>Machinery</b> (pump, agricultural machinery, other)						
<b>Other significant assets</b> (as defined by owner)						

### 3. Financial instruments used

Type of instrument	Instrument	Who in household uses it?	Used now or before and stopped?	How does it work? - Requirements / membership - Frequency - Amounts - Rates	Why used? (benefits) ... or why not? (drawbacks / blockages)
<b>Saving</b> (bank account, tontine etc, other)					
<b>Taking loans</b> (bank, micro-credit, tontine etc, village caisse, friend or family, purchase on credit, other)					
<b>Insurance</b> e.g. funeral, agriculture, medical (formal, informal)					
<b>Giving loans</b> (tontine etc, village caisse, friend or family)					



#### 4. Other factors and discussion

	Do you have any other ways of managing money that we have not discussed yet?
	Are there differences in the responsibilities of men and women for paying for different things?
	Are there differences in the ways men and women manage money (save, borrow give loans, insure etc)?
	What is your most common need for a lump sum ( <i>versement unique</i> ) of money?
	What is your most common way of getting together a lump sum of money?
	Are there other ways that money flows between the people in the household and community groups than those that we have discussed? (eg. <i>cotisation</i> , feasts)
	Further comments

- Are you happy for us to return in 2 weeks to discuss your income and expenditure patterns?
- Are you happy for us to discuss with one man and one woman separately for the future interviews?
- Do you have any questions for us?

**Form for questionnaire and semi-structured interview with male household head on household finances (interview 2)**

- Introductions, thank yous and reminders from last time.
- Reminder of purpose of study – understand how people manage finances, but not a project.
- Responses will be anonymous and can decline any question, or leave the study at any time.
- We will return in 2 weeks.
- Are there any questions for us now? Or can ask questions at end if preferred.

**1. Household identification**

Date		Commune		Name of head of concession	
Time		Village		Name of head of ménage	
Region		Hamlet		Code of concession	
Cercle		Neighbourhood		Code of ménage	

Name of man who knows most about household finances	
Name of woman who knows most about household finances	
General availability and willingness for interviews	
Names of persons interviewed today	

2. Income – past year and last two weeks

Type of income	Description of income	Amount (FCFA)	Who was involved in creating this income?	In last year and/or last two weeks?	Typical frequency of this income	What was done with the money? - Cash saved (where?) - Spent (on what?) - Other
<b>Paid employment</b> (agricultural work, other work in village inc. self-employment, work outside village)						
<b>Agricultural income</b> (main crops, garden produce, selling animals)						
<b>Other small business</b> (selling wood, karité, soap etc)						
<b>Remittances or gifts</b> (from village, Dialakoroba, Bamako, abroad)						
<b>Other</b> (dowry, renting or selling land, social or NGO welfare, in-kind income or gifts, other)						

### 3. Expenditure – past year and last two weeks

Type of expense	Description of expense	Amount (FCFA)	Who was involved in the decision, and who took the final decision?	In last year and/or last two weeks?	Typical frequency of this expense	How paid? - Cash saved (where?) - Loan (from who?) - Gift (from who?) - Sold something (what?) - Other
<b>Agricultural inputs</b> (seeds, fertilisers, land payments, labour, animals)						
<b>Medical</b> (consultation fees, traditional / modern medicines)						
<b>Food</b> (staples, extras)						
<b>Household</b> (fuel, phone credit, electrical goods, house repairs, other)						
<b>WASH</b> (water payments / cotisation / work, eau de javel, soap for dishes, soap for bathing, toilet / emptying)						

Type of expense	Description of expense	Amount (FCFA)	Who was involved in the decision, and who took the final decision?	In last year and/or last two weeks?	Typical frequency of this expense	How paid? - Cash saved (where?) - Loan (from who?) - Gift (from who?) - Sold something (what?) - Other
<b>Social expenses</b> (marriage, baptism, funeral, other)						
<b>Community expenses</b> (feast, association etc)						
<b>Gifts to others</b> (e.g. for their social expenses)						
<b>Transport</b> (moto fuel, other expenses)						
<b>Education</b>						
<b>Tax</b> (national, local)						
<b>Pleasures</b> (tea, cigarettes etc)						
<b>Other significant expenses</b> (as defined by interviewee)						

4. Shocks and events causing unexpected loss of income or extra expense in the last year

Type of shock or event	Description of shock or event	Approx date	Amount lost or expense incurred (FCFA)	What was the response taken? - Used cash saved (where?) - Loan (from who?) - Gift or help (from who?) - Sold something (what?) - Other e.g. reduced other expenditure or consumption, increased work	Who decided the response?	What was the impact on the household finances? (little effect, some effect, severe effect)	How long did it take the household to recover from this shock?
<b>Agricultural shock</b> (crop failure, death / illness / theft of livestock etc)							
<b>Other income loss</b> (job loss, business failure, remittance stopped)							
<b>Illness, injury or death</b> (income loss and/or extra expense)							
<b>Depart of member, divorce</b>							
<b>Social expenses</b> (marriage, baptism, funeral, other)							
<b>Community expense</b> (feast, pump repair etc)							
<b>Damage or theft of property</b>							
<b>Other significant shock</b> (as defined by interviewee)							

**5. Use of financial instruments - past year and last two weeks**

Type of instrument	Instrument	Who in household uses it?	Money flowing in/out of this instrument in the last year	Money flowing in/out of this instrument in the last two weeks
<b>Saving</b> (bank account, tontine etc, other)				
<b>Taking loans</b> (bank, micro-credit, tontine etc, village caisse, friend or family, purchase on credit, other)				
<b>Giving loans</b> (tontine etc, village caisse, friend or family)				

**6. Further comments and discussion**

Are there any important items of income or expenditure which we have not discussed?	
Are there any important items which are 'in-kind' rather than cash?	
Further comments?	

- Do you have any questions for us?

***Form for questionnaire and semi-structured interview with female household head on household finances***

- Introductions.
- Reminder of purpose of study – understand how people manage finances, but not a project.
- Responses will be anonymous and can decline any question, or leave the study at any time.
- We will return later for discussions with the women's group
- Are there any questions for us?

**1. Household identification**

Date		Commune		Name of head of concession	
Time		Village		Name of head of ménage	
Region		Hamlet		Code of concession	
Cercle		Neighbourhood		Code of ménage	

Name of man who knows most about household finances	
Name of woman who knows most about household finances	
General availability and willingness for interviews	
Names of persons interviewed today	



2. Household assets – where the woman was involved in the decision AND / OR raising the money

Type of asset	Asset	Number	Est. value if sold (FCFA)	Approx cost when bought (FCFA)	Who was involved in the decision to buy the asset, and who took the final decision?	How bought? - Cash saved (where?) - Loan (from who?) - Gift (from who?) - Sold something (what?) - Other
<b>Animal</b> (cow, sheep, goat, donkey, chicken, other)						
<b>Transport</b> (car, motorbike, bicycle, cart, other)						
<b>Electrical</b> (radio, TV, mobile phone, car battery, solar panel, other)						
<b>Machinery</b> (pump, agricultural machinery, other)						
<b>Other significant assets</b> (as defined by owner)						

3. Financial instruments used – by woman and others, if she interacts with the instruments used by others

Type of instrument	Instrument	Who in household uses it (and has control of its use)?	Used now or before and stopped?	How does it work? - Requirements / - Frequency - Amounts - Rates	Why used? (benefits) ... or why not? (drawbacks / blockages)	Money flowing in/out of this instrument in the last year	Money flowing in/out of this instrument in the last two weeks
<b>Saving</b> (bank account, tontine etc, other)							
<b>Taking loans</b> (bank, micro-credit, tontine etc, village caisse, friend or family, purchase on credit, other)							
<b>Insurance</b> e.g. funeral, agriculture, medical (formal, informal)							
<b>Giving loans</b> (tontine etc, village caisse, friend or family)							

4. Income – past year and last two weeks – generated by the woman, either to be spent by her or the household

Type of income	Description of income	Amount (FCFA)	Who was involved in creating this income?	In last year and/or last two weeks?	Typical frequency of this income	What was done with the money? - Cash saved (where?) - Spent (on what?) - Other
<b>Paid employment</b> (agricultural work, other work in village inc. self-employment, work outside village)						
<b>Agricultural income</b> (main crops, garden produce, selling animals)						
<b>Other small business</b> (selling wood, karité, soap etc)						
<b>Remittances or gifts</b> (from village, Dialakoroba, Bamako, abroad)						
<b>Other</b> (dowry, renting or selling land, social or NGO welfare, in-kind income or gifts, other)						

5. Expenditure – past year (or last two weeks if regular) – where the woman was involved in the decision AND / OR raising the money

Type of expense	Description of expense	Amount (FCFA)	Who was involved in the decision, and who took the final decision?	In last year and/or last two weeks?	Typical frequency of this expense	How paid? - Cash saved (where?) - Loan (from who?) - Gift (from who?) - Sold something (what?) - Other
<b>Agricultural inputs</b> (seeds, fertilisers, land payments, labour, animals)						
<b>Medical</b> (consultation fees, traditional / modern medicines)						
<b>Food</b> (staples, extras)						
<b>Household</b> (fuel, phone credit, electrical goods, house repairs, other)						
<b>WASH</b> (water payments / cotisation / work, eau de javel, soap for dishes, soap for bathing, toilet, vessels)						
<b>Social expenses</b> (marriage, baptism, funeral, other)						
<b>Community expenses</b> (feast, association etc)						
<b>Gifts to others</b> (e.g. for their social expenses)						

Type of expense	Description of expense	Amount (FCFA)	Who was involved in the decision, and who took the final decision?	In last year and/or last two weeks?	Typical frequency of this expense	How paid? - Cash saved (where?) - Loan (from who?) - Gift (from who?) - Sold something (what?) - Other
<b>Transport</b> (moto fuel, other expenses)						
<b>Education</b>						
<b>Tax</b> (national, local)						
<b>Pleasures</b> (tea, cigarettes etc)						
<b>Other significant expenses</b> (as defined by interviewee)						

6. Shocks and events causing unexpected loss of income or extra expense in the last year – for the household

Type of shock or event	Description of shock or event	Approx date	Amount lost or expense incurred (FCFA)	What was the response taken? - Used cash saved (where?) - Loan (from who?) - Gift or help (from who?) - Sold something (what?) - Other e.g. reduced other expenditure or consumption, increased work	Who decided the response?	What was the impact on the household finances? (little effect, some effect, severe effect)	How long did it take the household to recover from this shock?
<b>Agricultural shock</b> (crop failure, death / illness / theft of livestock etc)							
<b>Other income loss</b> (job loss, business failure, remittance stopped)							
<b>Illness, injury or death</b> (income loss and/or extra expense)							
<b>Depart of member, divorce</b>							
<b>Social expenses</b> (marriage, baptism, funeral, other)							
<b>Community expense</b> (feast, pump repair etc)							
<b>Damage or theft of property</b>							
<b>Other significant shock</b> (as defined by interviewee)							

## 7. Other factors and discussion

Do you have any other ways of managing money that we have not discussed yet?	
Are there differences in the responsibilities of men and women for paying for different things that we have not discussed yet?	
Are there differences in the ways men and women manage money (save, borrow give loans, insure etc)?	
What is your most common need for a lump sum (versement unique) of money?	
What is your most common way of getting together a lump sum of money?	
Are there other ways that money flows between the people in the household and community groups than those that we have discussed? (eg. cotisation, feasts)	
Are there any important items which are 'in-kind' rather than cash?	
Further comments	

- Are you happy for us to return later to discuss the issues with the women's group?
- Who is the President of the women's group(s) that you are part of?
- Do you have any questions for us?

## Appendix 3 - Additional documentation on process and analysis

### A3.1. Summary of the process of using the Sustainability Framework with WaterAid

[Originally written as an example for other WaterAid country programmes]

## Using WaterAid's Sustainability Framework to analyse the challenges for sustainable water services at local government levels in Mali

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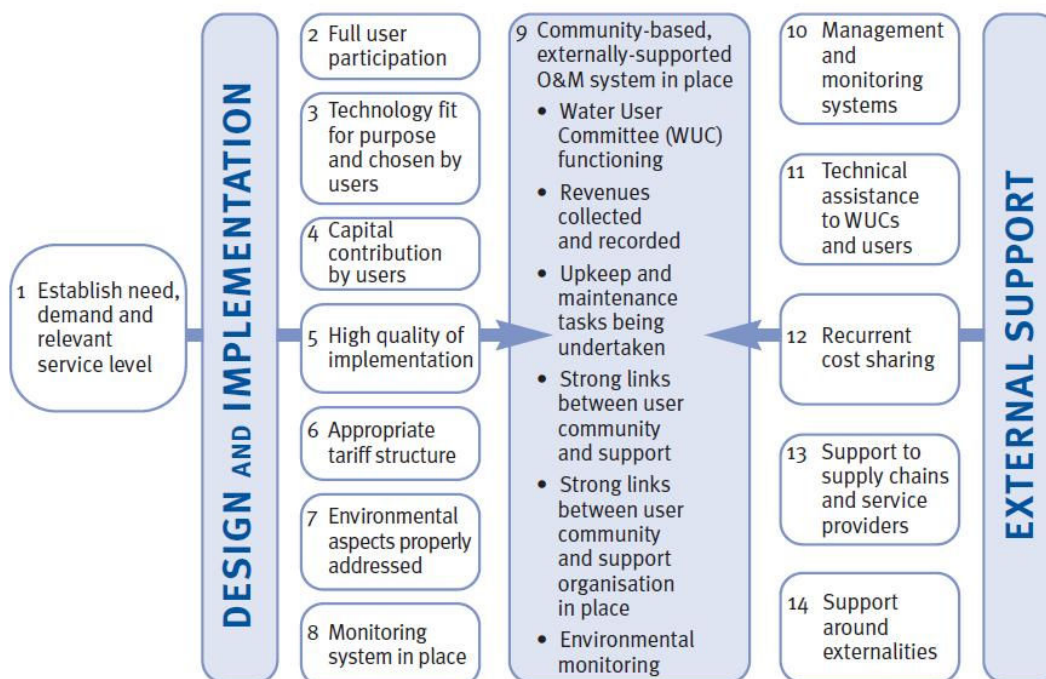
January 2012

### 1. Overview

This Briefing Note summarises the progress made by WaterAid in Mali and its partner NGOs and local governments (municipalities) in rural areas of Mali during 2011 towards:

- Understanding WaterAid's Sustainability Framework, as shown below.
- Using the Sustainability Framework to help analyse the challenges faced in achieving sustainable water services in each of these rural municipalities.
- Developing approaches at commune levels to respond to these challenges.

*WaterAid's conceptual framework for sustainable rural water supply services:*



(WaterAid (2011). Sustainability framework.)



## 2. First steps in using the Sustainability Framework in Mali

WaterAid Mali and its partners undertook the following key activities during 2011 to analyse the elements affecting the sustainability of rural water services in their zones of intervention:

- a) **An initial analysis of sustainability issues facing the whole rural water sector in Mali, and a more detailed analysis of one case study commune where WaterAid works.** Representatives of WaterAid and the case study commune took this preparatory study to a WaterAid West Africa workshop in Liberia. This enabled peer review and development of a broad action plan for the country programme to address issues of sustainability at levels of service-delivery and policy levels. The remaining activities described here focus on issues at local service-delivery levels.
- b) **A desk review and workshop with all WaterAid's partners in rural areas to discuss the existing data on sustainability, current approaches, and how the Sustainability Framework could be used to help their analysis and planning.** Some tools were adapted from those created for the workshop in Liberia. Others were developed specifically for the Mali context based on the data initially collected.
- c) **Field research by each rural partner to i) use the Sustainability Framework and interviews with key stakeholders to analyse sustainability overall in their commune, using a simple 'traffic-light system' to assess each element of the framework, and ii) perform case study research in four villages in their commune.** The village case studies focused on community fundraising and cost-sharing of recurrent costs, which had been identified as key themes. In each commune, partners chose two villages which represented positive examples of sustainability and two examples known to be more challenging.
- d) **A workshop to review the progress made and identify the key areas which may require further resources and support from WaterAid and can be considered during the next planning cycle in early 2012.**

## 3. Summary of the factors which show most success and greatest difficulties:

Factors of the Sustainability Framework where WaterAid's partners have most success:	
<b>Initial demand, participation and contribution</b>	Establish demand, need and relevant service level
	Full user participation
	Capital contribution by users

Factors of the Sustainability Framework where WaterAid's partners have most difficulties:	
<b>Monitoring, especially of environmental aspects</b>	Environmental aspects
	Monitoring system, especially of environmental issues
<b>Tariffs and revenues (from users) and sharing recurrent costs (with other actors)</b>	Appropriate tariff structure
	Revenues collected, recorded and accounted for
	Cost sharing
<b>Preventive maintenance and support to supply chains</b>	Maintenance
	Support to supply chains and service providers
<b>Externalities</b>	Support around externalities

The challenges regarding monitoring and cost-sharing are widespread among WaterAid's partners and have led to the key actions described below. The need for better support to supply chains is a particular issue in municipalities which are further from urban centres. The challenge of support in coping with external trends and shocks has not yet been addressed.

#### 4. Challenges in mainstreaming the Sustainability Framework in WaterAid's work

- **Internal marketing – all WaterAid and partner staff understanding and committing to the principles of sustainability – is a slow process, especially given the other demands on people's time.** For example, it was difficult to gather all WaterAid programme staff together at the same time with all the coordinators and field staff of WaterAid's partners for the workshops and discussion required, so reaching common understandings and agreements was slow.
- **Data collected is not always consistent and comparable across different municipalities.** This problem also emerged because of the difficulty of bringing people together to discuss and reach common interpretations of different elements of the Sustainability Framework.
- **Over-reliance on particular individuals as 'champions'.** For example, the coordinator of the WASH Technical Unit of WaterAid's partner commune of Dandougou Fakala had shown great initiative and commitment in analysing costs, setting up cost-sharing mechanisms and supporting local mechanics in order to achieve near-100% rates of water point functionality in the commune. Throughout this process he was encouraged to share his ideas and approaches with other partners. However, it may be unrealistic to expect all local governments or NGOs to have staff with such high levels of initiative.
- **Internal planning, monitoring and reporting systems are not yet aligned to sustainability.** However, the adoption of a system of Post-Implementation Surveys will help address this, and the last workshop in this process aimed to ensure that the areas of the Sustainability Framework identified as key challenges

would be addressed and allocated appropriate funds in the budgeting process for 2012-13.

- **Lack of engagement so far on wider policy issues concerning sustainability.** Although the initial action plan developed after the workshop in Liberia included elements of engaging with other actors on national policy issues, the time needed to gather evidence from WaterAid's work and staff turnover issues in the Policy team have delayed this engagement.

## **5. Actions resulting from the sustainability analysis**

Actions taken so far:

- Sharing of the simple approach and tools for monitoring functionality and costs developed by one partner (the commune of Dandougou Fakala) with all other partners.
- Research on how recurrent costs (operation, maintenance, rehabilitation) are shared between users, local government and NGOs, and how this sharing could be improved to help sustainability.
- Research on methods of community fundraising and how this can be taken into account when estimating the ability and willingness to pay of users.
- Updating the GPS and functionality data for all water points in the rural municipalities.

*Note that full analysis of the data from the research on recurrent costs and community fundraising is ongoing during January-April 2012.*

Actions provisionally identified for 2012-13, to be planned in detail during the budgeting process with each partner:

1. Developing a long-term monitoring system which fulfils the needs of local actors, the national water point database, and WaterAid's own post-intervention monitoring procedures, and includes a consideration of environmental issues.
2. Supporting a mechanism for ensuring that the key elements of sustainability and the up-to-date mapping and functionality data are taken into account:
  - a. In the direct activities of WaterAid's partners.
  - b. In the next revisions of the Local Sector Development Plans for WASH, to inform the activities of other actors. These must take into account the issues identified in the analysis as particularly relevant in that commune (such as distance to spare parts providers).
3. Developing an improved tool for predicting the life-cycle costs of water services in each commune, and for analysing the ability and willingness of users to pay their contribution.
4. Developing more detailed approaches to improve preventative maintenance and support to supply chains which are appropriate to the geographic context of each commune.

### A3.2. Explanation of sources of data and calculation of recurrent costs

[A version of this explanation was originally written for WaterAid in Mali at their request]

The tables below show how the cost per person per year for each type of life-cycle cost component (according to the WASHCost definitions) was calculated in four municipalities, based on data from WaterAid in Mali and its partners. The process was:

- A) Collect the information from each municipality, for each year where information is available.
- B) Note the number of years for which information is available.
- C) Calculate the total cost for the whole municipality in the period for which information is available.
- D) Note the total population of the municipality for reference.
- E) Note the estimated population covered by all “modern” water points (*points d’eau moderne*) according to national norms AND the estimated population covered by handpumps and “modern” wells, excluding small piped systems (in both cases according to calculations which were made based on the GPS survey of all water points in WaterAid’s rural zones of intervention in 2011). This distinction is made because:
  - Operating and minor maintenance expenditure (OpEx) and capital maintenance expenditure (CapManEx) are calculated for handpumps and “modern” wells (although OpEx was not in fact reported for “modern” wells).
  - Expenditure on direct support (ExpDS) is calculated on the basis of supporting services from all types of water points, since some of WaterAid’s partners’ activities include support to the management of small piped systems too. However it was not possible to disaggregate expenditure on direct support between different types of infrastructure.
- F) Calculate the total cost per person per year in FCFA by dividing the total cost (C) by the population covered (E) and by the number of years for which information is available (B).
- G) Calculate the total cost per person per year in USD by dividing the total cost (C) by the population covered (E) and by the number of years for which information is available (B) and by 510 (the approximate exchange rate is 510 FCFA : 1 USD).
- H) Express the costs per person per year as an approximate range for all the municipalities, in line with guidance from the WASHCost project (Burr et al. 2012).

**Operating and minor maintenance expenditure (OpEx)** - Operating costs, maintenance and repairs which typically occur at least once a year at a cost of up to US\$ 100 per intervention, for handpumps and “modern” wells (although OpEx was not in fact reported for “modern” wells).

Municipality	Source of information	Years for which information was available	Total costs of OpEx in period of information available	Total population (for reference only)	Estimated population covered by all “modern” water points according to national norms	Estimated population covered by handpumps and “modern” wells according to national norms	Cost of OpEx per person covered per year (FCFA)	Cost of OpEx per person covered per year (USD)	Approximate range per person served per year (to 1 d.p., in line with Burr et al. 2012)
<b>Dandougou Fakala</b>	Records of Co-ordinator of Technical Unit	3.75 years (2008 – Sept 2011)	298,500 FCFA	9,770	9,399	7,899	10 FCFA	US\$ 0.02	
<b>Kolokani</b>	Estimates and some records kept by pump mechanics	4 years (2008 – 2011)	5,636,000 FCFA	39,722	35,518	24,012	59 FCFA	US\$ 0.12	< US\$ 0.1
<b>Tioribougou</b>	Records kept by pump mechanics	4 years (2008 – 2011)	661,080 FCFA	14,251	13,264	8,722	13 FCFA	US\$ 0.03	
<b>Dialakoroba</b>		<i>No information available</i>		18,746	18,746	14,865	<i>No information available</i>	<i>No information available</i>	

**Capital maintenance expenditure (CapManEx)** - Costs which go beyond routine maintenance or small repairs, typically occurring less frequently than every year and costing more than US\$ 100 per intervention, for handpumps and “modern” wells. Includes the costs of renewal, replacement and rehabilitation of infrastructure. These costs are highly dependent on the timing of donor and government projects to rehabilitate old infrastructure.

Municipality	Source of information	Years for which information was available	Total costs of CapManEx in period of information available	Total population (for reference only)	Estimated population covered by all “modern” water points according to national norms	Estimated population covered by handpumps and “modern” wells according to national norms	Cost of CapManEx per person covered per year (FCFA)	Cost of CapManEx per person covered per year (USD)	Approximate range per person served per year (to 1 d.p., in line with Burr et al. 2012)
<b>Dandougou Fakala</b>	Records of Co-ordinator of Technical Unit	3.75 years (2008 – Sept 2011)	480,000 FCFA	9,770	9,399	7,899	16 FCFA	US\$ 0.03	
<b>Kolokani</b>	Records of Municipality	4 years (2008 – 2011)	6,709,900 FCFA	39,722	35,518	24,012	70 FCFA	US\$ 0.14	
<b>Tioribougou</b>	Records of Municipality and pump mechanics; mapping survey	4 years (2008 – 2011)	11,985,300 FCFA	14,251	13,264	8,722	315 FCFA	US\$ 0.62	<b>US\$ 0.1 to 1.6</b>
<b>Dialakoroba</b>	Estimates by partner NGO	4 years (2008 – 2011)	48,400,000 FCFA	18,746	18,746	14,865	814 FCFA	US\$ 1.60	

**Expenditure on direct support (ExpDS)** – These are the costs of a WASH Technical Unit of 1-2 staff (salaries, transport, office expenses) to support the planning, implementation and monitoring of WASH services, either as part of the municipality’s staff (where WaterAid provides direct budget support) or as local NGO partner staff. Each WASH Technical Unit has similar absolute costs, so the costs per person per year are sensitive to the population of the municipality. These costs cover support to the management of handpumps, “modern” wells and small piped systems.

Municipality	Source of information	Total costs of direct support (salaries and overheads of Technical Unit or partner NGO) for FY 2010-2011	Total population (for reference only)	Estimated population covered by “modern” water points according to national norms	Cost of direct support per person covered per year (FCFA)	Cost of direct support per person covered per year (USD)	Approximate range per person served per year (to 1 d.p., in line with Burr et al. 2012)
Dandougou Fakala		6,500,000 FCFA	9,770	9,399	654 FCFA	US\$ 1.28	
Kolokani	WaterAid Mali financial data for FY 2010-2011	<ul style="list-style-type: none"> <li>17,359,593 FCFA for Kolokani and Tioribougou combined.</li> <li>Therefore 8,679,797 FCFA for each municipality if the costs are shared between them.</li> </ul>	39,722	35,518	244 FCFA	US\$ 0.48	
Tioribougou			14,251	13,264	585 FCFA	US\$ 1.15	US\$ 0.5 to 1.4
Dialakoroba		11,036,967 FCFA	18,746	18,746	692 FCFA	US\$ 1.36	