



LUND UNIVERSITY

School of Economics and Management

Master's Programme in Economic Growth, Population and Development

## Domestic water supply policy evaluation

A comparative case study of Uganda and Madagascar between 1992  
and 2016

by

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*Abstract:* The purpose of the thesis is to understand which factors contribute to effective domestic water policies in developing countries. The study is carried out as a comparative case study of Uganda and Madagascar, which have, despite similar initial socio-economic conditions, experienced diverging trends in the domestic water supply between 1992 and 2016. The cases are assessed using a theoretical framework adapted for the purpose of evaluating water policies in developing countries. The factors that constitute the framework are policy and objectives, financial resources, capacity, accountability and external environment. The superior performance of Uganda compared to Madagascar is found to be a result of clear and comprehensive policies and goals, a strong and operational institutional system and a higher degree of accountability. In addition, the external environment of Uganda provided a prosperous setting for continuous development whereas Madagascar's performance was hampered by political unrest. The paper concludes that policy planning and objectives, institutional capacity and accountability are central aspects of effective domestic water supply policies in developing countries. Furthermore, the performance is affected by the social, economic and political environment. The study is, however, limited because of the external validity of the case study method.

*Keywords:* Water supply, policy evaluation, Uganda, Madagascar.

EKHS21

Master's Thesis (15 credits ECTS)

June 2019

Supervisor: Jeanne Cilliers

Examiner: Kristin Ranestad

Word Count: 16 148



# Acknowledgements

I would like to thank my supervisor Jeanne Cilliers for the guidance and helpful comments throughout the thesis. I would also like to thank Namé, Jasmin and Ellen for the constant support.



# Table of Contents

<b>1</b>	<b>Introduction .....</b>	<b>1</b>
1.1	Research Problem.....	1
1.2	Scope .....	2
1.3	Research aims.....	3
1.4	Outline of the Thesis .....	4
<b>2</b>	<b>Previous research .....</b>	<b>5</b>
2.1	Challenges to water policy reforms.....	5
2.2	Case studies of water policy reforms .....	7
<b>3</b>	<b>Theory .....</b>	<b>10</b>
3.1	Policy implementation framework.....	10
3.2	Water policy framework challenges.....	12
3.3	Adapted theoretical framework for water policy analysis .....	13
<b>4</b>	<b>Data and Method .....</b>	<b>16</b>
4.1	Data .....	16
4.2	Method .....	17
<b>5</b>	<b>Empirical Research .....</b>	<b>18</b>
5.1	Country background .....	18
5.1.1	Uganda .....	18
5.1.2	Madagascar.....	19
5.2	Uganda .....	20
5.2.1	Policy and objectives.....	20
5.2.2	Financial resources .....	22
5.2.3	Capacity.....	23
5.2.4	Accountability .....	24
5.2.5	Economic, social and political environment .....	25
5.3	Madagascar.....	26
5.3.1	Policy and objectives.....	26
5.3.2	Financial resources .....	28
5.3.3	Capacity.....	29
5.3.4	Accountability .....	30
5.3.5	Economic, social and political environment .....	31
<b>6</b>	<b>Discussion.....</b>	<b>32</b>
6.1	Limitations .....	35

**7 Conclusion..... 36**

# List of Tables

Table 1. Key Co-ordination gaps of the Multi-level Governance Framework (OECD, 2012, p.100).....	13
Table 2. The water policy evaluation framework. Adapted from Van Meter and Van Horn (1975) and OECD (2012). .....	15
Table 3. Performance of Uganda and Madagascar according to the water policy framework.	32

# List of Figures

Figure 1. Share of population living in households using an improved water source (ICF, 2019). .....	3
Figure 2. Change and consensus matrix (Van Meter & Van Horn, 1975, p.460).....	10
Figure 3. Model of policy implementation process (Van Meter & Van Horn, 1975, p.463)...	11
Figure 4. The share of population living in households that use improved water source in Uganda, divided into the urban and rural population (ICF, 2019). .....	19
Figure 5. The share of population living in households that use improved water source in Madagascar, divided into the urban and rural population (ICF, 2019). .....	20



# List of Abbreviations

ANDEA	Autonomous National Water and Sanitation Authority
CIDI	Community Integrated Development Initiatives
CSO	Civil Society Organization
DEPA	Directorate of Drinking Water and Sanitation
DWSS	Drinking Water Supply and Sanitation
GDP	Gross Domestic Product
HDI	Human Development Index
ICA	Institutional and Context Analysis
MAP	Madagascar Action Plan
MAPS	Mainstreaming, Acceleration and Policy Support
MDGs	Millennium Development Goals
MWE	Ministry of Water and Environment
NDPII	Second National Development Plan
NGO	Non-governmental Organization
NWP	National Water Policy
OECD	Organisation for Economic Co-operation and Development
PEAP	Poverty Eradication Programme
PNAEPA	National Programme for Access to Safe Water and Sanitation
SDGs	Sustainable Development Goals
SOREA	Water and Sanitation Regulation Body
SWAP	Sector-wide Approach
UN	United Nations
WAP	Water Action Plan



# 1 Introduction

Goal 6.1 of the Sustainable Development Goals (SDGs) states: “By 2030, achieve universal and equitable access to safe and affordable drinking water for all” (UN, 2015, p.20). This is an important part of the environment an individual requires for reaching their full potential and living a valuable life. Access to clean and affordable drinking water and sanitation has been recognised as a human right in the UN General Assembly (UN, 2010). The resolution urges states and international organizations to cooperate and assist in technological, capacity-strengthening and financial issues to fulfil the right. In addition to the recognition as a human right, water and development have been discussed in various world forums. The Dublin-Rio principles state freshwater as a “finite and vulnerable resource, essential to sustain life, development and environment”, and give states a central role for development in water management as well as acknowledge the economic value of water (ICWE, 1992).

Global water use has been increasing one percent annually since the 1980s, mostly attributable to the increased use in developing countries (UNESCO, 2019, p.13). The trend is expected to last until 2050 and is driven by demographic factors, economic development and changes in consumption trends. In addition, water stress and water scarcity are intensified by climate change. Despite improvements, 2.1 billion people lacked access to a safely managed water service in 2015 (WHO & UNICEF, 2017, p.3). Safely managed water source is defined as an improved water source, free from contamination and available at premises (WHO & UNICEF, 2017, p.52). Improved water sources include piped household connections, public taps or standpipes, boreholes, tube wells, protected dug wells, protected springs, rainwater, tanker trucks and bottled water, while unimproved sources include unprotected dug wells and unprotected springs (WHO & UNICEF, 2017, p.51). In order to improve the current figures and in a sustainable manner provide universal clean and affordable water, efficient water policies are required.

## 1.1 Research Problem

By recognizing water access as a human right, the UN laid a foundation for understanding the magnitude of the issue. Domestic water access is interlinked with health, education, labour market participation and poverty, and is therefore an important determinant of development (WWAP, 2019, p.24, 27-29). Domestic water access and economic development are interdependent topics, where the provision of a safe, accessible and affordable water service provides security and alleviates poverty (WWAP, 2015, p.19-20). On the other hand, economic development gives a country and its population more appropriate resources for improving the water sector. Understanding what makes water policies effective is, therefore, an important topic within development. Policymaking is a crucial determinant of the outcomes in the water

sector and achieving targets such as the SDGs. The current issues of climate change and population growth intensify the need for water policies for current and future sustainable development, especially in developing countries. The African population growth rate was the highest globally between 2000 and 2015, and the poorest are also highly vulnerable to the extreme weather conditions (UN DESA, 2017, p.3; WWAP, 2015, p.20). Thus, the impact on Africa's water supply services is significant.

## 1.2 Scope

The study will focus on water policies in Uganda and Madagascar. Both countries are located in Sub-Saharan Africa, where the coverage rate of water access is the lowest globally at 55% (UNDP, 2006, p.35). Between 1990 and 2015, 43% of the population of Sub-Saharan Africa gained access to an improved water source, but the absolute numbers have not improved due to population growth (Ritchie & Roser, 2018). A similar trend is expected to continue as the African population growth is estimated to contribute to more than half of the world's population growth between 2015 and 2050 (UN DESA, 2017, p.3). The unfavourable initial conditions together with increasing demand on the continent will result in high requirements from the water sector. The scope for improvement makes it an important and interesting region for this study.

The two countries, Uganda and Madagascar, were chosen on the basis of comparable initial socio-economic conditions at the beginning of the 1990s. In 1992, the GDP per capita of Uganda was US\$ 153 and the corresponding figure for Madagascar was US\$ 245 (World Bank, 2019b). The countries also had comparable figures of poverty headcount ratio (US\$ 1.25 a day), which was 71.3% in Uganda in 1992 and 68.9% in Madagascar in 1993 (World Bank, 2019b). Uganda and Madagascar were classified in the low human development category in 1992, as Uganda had a human development index (HDI) of 0.192 and Madagascar's HDI was 0.350 (UNDP, 1992, p.20). Thus, the countries were comparable in terms of relative economic development at the beginning of the 1990s. Moreover, access to water was similar in Uganda and Madagascar at the time but faced diverging trends in the following decades. The share of the population living in households that use an improved water source in both countries is shown in figure 1. Uganda and Madagascar experienced coverage rates between 40 and 50% at the beginning of the 1990s. However, the trends differ significantly, as Uganda continuously improved the coverage rate in the following decades, while Madagascar's performance was stagnant. In 2016 the share of the population using improved water access was 78% in Uganda and 43% Madagascar. It is therefore interesting to compare the two cases to identify why Uganda was more successful in increasing domestic water access during this time period and what factors contributed to the stagnating results in Madagascar.

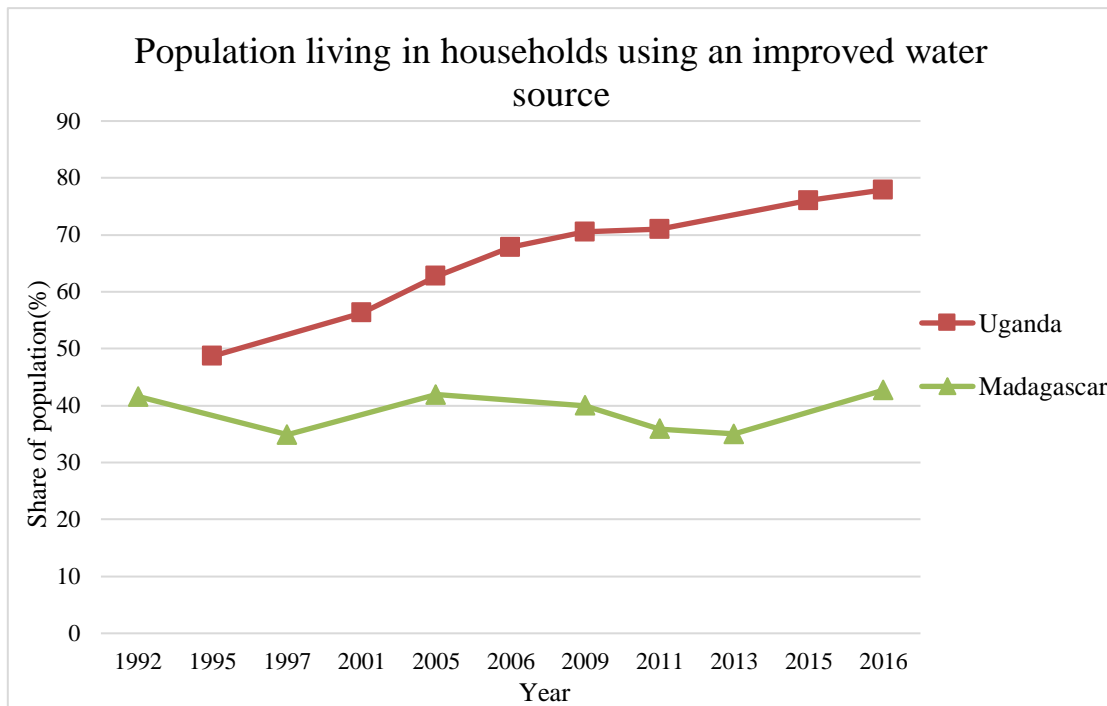


Figure 1. Share of population living in households using an improved water source (ICF, 2019).

The time period for this study will be from 1992 to 2016 because of the policy reform implementation in the water sectors of the chosen countries during the 1990s. The data on water access by ICF (2019) covers this time period, which further justifies the choice of this time period.

### 1.3 Research aims

The purpose of this study is to enhance development through increased understanding of water policy effectiveness in developing countries. By comparing case studies of Uganda and Madagascar, the key factors for sector performance, and more specifically the provision of water for domestic purposes, will be identified. Understanding and evaluating key factors of domestic water access is important for future policymaking and the development of existing policies in developing countries. Development in the water sector aids socioeconomic development and contributes to the fulfilment of human rights. In a broad sense, the thesis aims to answer the question of what factors are important for achieving effective domestic water supply policies in developing countries. Specifically, the research question of the thesis is as follows:

*How does Uganda compare to Madagascar in regard to which factors have been important for achieving effective domestic water supply policies from the 1990s?*

The research question will be answered by applying a theoretical framework on the case studies of Uganda and Madagascar. The water policy framework is adapted from frameworks by Van Horn and Van Meter (1975) and the OECD (2012) and key findings from the literature review.

The two cases will be evaluated qualitatively, first separately and then compared, to understand which factors caused divergent performance of the countries.

## 1.4 Outline of the Thesis

The thesis will continue with a literature review to understand the existing findings and identify a gap in the literature. The adapted theoretical framework is introduced in chapter three. Chapter four presents the data and method of the study. Brief backgrounds of Uganda and Madagascar will then be presented, after which the results for both countries will be given separately. The results are discussed and compared in chapter six to analyse the main factors affecting performance in the water sector. Finally, a conclusion will be provided.

## 2 Previous research

Previous literature on water policy evaluation has to a large degree focused on case studies and providing tools for policy evaluation. The literature review will begin by identifying general factors that are significant for achieving successful policy planning, implementation and maintenance. Thereafter case studies from the developing world will be discussed to explore and identify common difficulties in achieving desirable results in past cases of water policy implementation. The identified common hindrances are used as a foundation for developing a theoretical framework in the next chapter.

### 2.1 Challenges to water policy reforms

The sustainable development goals (SDGs) are often used as legitimate guidance for the targets within water access and distribution. It is, therefore, useful to understand which factors affect the achievement of the goals and in what way. The United Nations Development Programme (UNDP) (2018, p.5) provides “Mainstreaming, Acceleration and Policy Support” (MAPS) as a guiding framework for development. MAPS is divided into three categories, where the focus lies on creating national goals, identifying current and future threats to sustainable development, as well as integrated policy implementation. Integrated water system management aims to provide access to water in coordination with other uses of water and in the socio-economic environment present (GWP, 2005). The “Institutional and Context Analysis” (ICA) is provided as a part of MAPS (UNDP, 2018, p.6). ICA emphasises the importance of the main stakeholders’ incentives for the accomplishment of the SDGs and requires a change in power relations or incentives in order to generate a change in development (UNDP, 2018, p.9). In the context of water policies, this would require politicians’ incentives to be changed possibly through a change in political power, increased public or international demand or a change in the legal or institutional constraints placed on the decision makers.

MAPS and ICA are both used in real-life context, and it is, therefore, important to consider the political and economic factors that affect development. First, in the context of water distribution, important questions may include the geographical features, such as areas further away from natural water resources, that can be barriers to communication and distribution or isolation of certain groups or areas (UNDP, 2012, p.13). Second, large informal sectors and corruption can negatively affect policy effectiveness. Within the legal system, the importance placed on human rights, such as the right to clean and affordable water, the rate of change in the constitution, or major defects in the legal systems can affect water policies (UN, 2010; UNDP, 2012, p.14). Third, the social structure and the ethnic, linguistic or other divisions are of importance for understanding how the population benefits from water policies. Within the political structure, it is essential to consider which groups possess political or economic power,

and what are the expectations of those in power (UNDP, 2012, pp.14-15). In addition, outside forces, such as aid, foreign direct investment and the influence of donors play a role in achieving the SDGs (UNDP, 2012, p.13). MAPS and ICA thereby highlight the significance of the context for policy design and implementation for achieving targets.

Focusing on water policies, De Albuquerque (2012) applies a human rights perspective and discusses development from legal, institutional, financial, implementation and accountability angles. A step towards creating a functioning legal framework for water policies is recognizing the right to water in the national constitution, which can be seen as a sign of political will (De Albuquerque, 2012, p.51). In addition, this recognition has an underlying force in creating a legal and institutional setting for policy implementation (De Albuquerque, 2012, p.56). Flexible but strong legal and institutional frameworks are needed for robust policymaking and coordination of agencies. According to Bromley (1982), institutions determine who benefit from and who are responsible to pay for resources. Therefore, institutions can be viewed as incentive creating and affect economic and administrative decisions within water use.

Water and sanitation investments are economically justified due to their rate of return, as a one-dollar investment on average prevents future costs of eight dollars (Hutton et al., 2007). Important aspects of financing are the planning, budgeting and ability to predict accurate costs of construction, operation and maintenance together with the forces of urbanization and expanding demand (De Albuquerque, 2012, pp.75-77). Moreover, a central aspect is adjusting the payment of charges to a method preferred and available to the users in order to generate adequate revenue (De Albuquerque, 2012, p.81). Community involvement, full cost recovery and adequate budgeting are key challenges in the financing of domestic water supply.

The implementation of water policies can also be affected by technical constraints or the discrimination of certain groups (De Albuquerque, 2012, p.105). There are logistical differences in water provision to urban and rural areas, where the latter is hampered by long distances between households and administration, lack of information and issues regarding payments due to insufficient income or reliance on trading (pp.109, 112). Urban areas should, however, not all be considered equal as there are more neglected areas, including slums, where water is often provided at a higher price but lower quality (De Albuquerque, 2012, pp. 121-123). De Albuquerque (2012, pp.110-111) stresses understanding the possibilities and potential failures of both supply- and demand-led projects, where the first may not be suitable for the users' needs while the latter can be problematic from a management point of view and will not be realized without adequate information of opportunities. Finally, De Albuquerque (2012, pp. 177-179) emphasizes the accountability of rights and water policies, and advocates monitoring as a tool for evaluation of performance and non-discrimination to increase liability.

The MAPS and ICA frameworks by UNDP (2018; 2012) together with the water policy challenges discussed by De Albuquerque (2012) help us to understand common hindrances that can be applied to water access reforms. MAPS emphasizes the need for national goals adapted to the national context of possible threats and challenges and creating an integrated sector. For achieving targets within the water sector, the ICA framework includes social, political, geographical and external factors. The link between water policies and water as a human right is highlighted by De Albuquerque. Discrimination and accountability should be considered throughout the process together with the adjustment of programs to the demands of the users.



In order to further understand which factors affect water policies in developing countries, several case studies are presented.

## 2.2 Case studies of water policy reforms

The following case studies will highlight the various hinders in implemented water supply policies. Each case will be viewed as a lesson for understanding how water policies are affected by various factors depending on the context and the policy. The identified factors will validate the choice of factors for the adapted water policy framework of the thesis.

In their study, Barbosa et al. (2016) investigate water policy implementation in a case study of São Paulo, Brazil, to identify the main problems of the policy and to see how the water services could be improved. The study focuses on the time period starting in 1991 when São Paulo's Water Act was legislated, which meant a transformation from a centralized, supply-led system to a decentralised and more integrated system. Data was collected through interviews with government representatives within and outside of the water sector. Barbosa et al. (2016) find that the main challenges lie in the institutional, governance, and political areas. Problems include a lack of information flow between the committee and government decisions, resulting in inefficient decision-making. Members would in some cases focus more on the funding of own interests rather than cooperation and improvement of projects and were not always aware of their responsibilities. Furthermore, Barbosa et al. (2016) found implementation to be time-consuming due to weak incentives and political will, especially at the local government levels. Other challenges identified by the study were financial and technical challenges, such as insufficient qualifications of committee members. In conclusion, the study emphasized institutional, legal and political barriers in the implementation of a new water sector policy in São Paulo.

In another study regarding water reforms in Brazil, Ioris (2009) inspected the case of Paraíba do Sul river basin. Similarly to São Paulo, Paraíba do Sul underwent a transformation to an integrated water system. The data was collected through field trips and consisted of interviews and documents. The main failure of the policy transformation was, according to Ioris, the economic inefficiency and negligence to the sustainability of water infrastructure. Additionally, it was found that the environmental aspect of the system did not improve from previous problems of pollution and exploitation by industries and agriculture, and compensation for the caused problems was not taken into account in the new system. Moreover, the administration of funds was mismanaged as the charges were not distinguished from other taxes and thus the sector was unable to re-invest the income. These were contributing factors to the low accountability and delayed payments. In general, Ioris (2009) identified the main limitations in the Paraíba do Sul river basins to be within knowledge, operations and politics, with similarity to the findings of Barbosa et al. (2016). Unclear communication, the inability to recognise water as an economic resource and problems in integration resulted in inefficient water systems. There was hesitance to understand differences between social groups and how power relations in water management affected various groups, which confirms the issues of discrimination and negligence of human rights discussed by De Albuquerque (2012).

Ioris (2012) found similar issues concerning inequalities between social groups in a case study of a neoliberal water sector reform in Lima, Peru. The data was collected through fieldwork and includes interviews and documents. Problems of the reform include the technical provision as well as the financing from the public, who have experienced high increases in water charges with almost no increases in the water supply. Lack of management skills and insufficient political and legal institutions in Lima hamper the development of sustainable water services. The solutions provided by the reforms have been short-term and not been able to target the inequalities in the country but rather reinforced them. Thus, the study strengthens the conclusions from the studies by Barbosa et al. (2016) and Ioris (2009).

Investigating urban water management reforms in Ghana, Acheampong et al. (2016) attempt to find what political, economic and social forces affect the sector performance. They apply a multi-level perspective to understand the interrelations between different levels of water management and stress that political, institutional, technical and socio-economic characteristics together play a role in the process. The influence of international organizations and the financial dependence on them pushed Ghana's regime towards market-oriented policies and privatization of water services. However, the separation of the urban and rural systems resulted in negligence of the rural services, despite contrary needs. The users disapproved of the privatization and were instead in favour of a decentralised water system. The privatized system was unable to achieve adequate financial, technical or operational results and hence the system was reverted to public provision. In conclusion, Acheampong et al. (2016) highlight the need for understanding contextual social and political demand for reforms in the water sector. Another takeaway from this study is the differentiation of actors and their degree of influence in water reforms.

Also focusing on the different stakeholders' roles in water sector reforms, Baye et al. (2012) evaluate water and sanitation reforms in rural Southern Ethiopia and focus on differences between supply- and demand-driven water systems. For data collection, interviews, questionnaires and focus group discussions were conducted. Attempts of demand-driven water projects had inadequate outcomes and the users were dissatisfied. Reasons for the results were the inadequate household inclusion in decision-making and regulation. Furthermore, extending the management to beneficiaries would be necessary for sustainable outcomes. The results highlight the importance of incorporating the beneficiaries into all stages in order to create functioning and sustainable water systems. Gleitsmann et al. (2007) conducted a similar study in Mali, and despite the project being a positive step towards efficient water provision, they found the need for including beneficiaries in all stages of the process. Gleitsmann et al. (2007) conclude that flexible institutions and communication with the users are key factors for creating suitable solutions, long-term legitimacy and reductions in transaction costs. Similarly to Acheampong et al. (2016), these studies emphasize the need for knowledge of the demand and capacities of users and providers in order to create sustainable improvements in the sector.

These studies give an overview of the existing literature on the topic of policy evaluation in the water sector. The main challenges identified in the presented frameworks and evaluations by UNDP and De Albuquerque include political, institutional, economic and social dimensions. These factors, together with legal, socio-economic and political factors were found to be central in the policy evaluation presented in the case studies. The studies highlight different obstacles experienced in developing countries and thereby help to create a varied picture of the sector

achievements and failures. In addition, the importance of including the user communities in all stages of the process for creating sustainable water services is emphasized. The existing literature helps us understand common challenges, but there is a gap in comparative studies and the use of a grounded framework in the analysis. In order to further understand problems and possible solutions, this study uses a comparative case method. The findings, together with the frameworks by Van Meter and Van Horn (1975) and OECD (2012) are used as a foundation for constructing a theoretical framework for the thesis.

# 3 Theory

A conceptual framework by Van Meter and Van Horn (1975) will first be presented for understanding effective policy implementation. Thereafter, challenges found by the OECD (2012) regarding water policies are presented. These two frameworks are used as a foundation for composing a water policy framework that is more suitable for the specific context of the water sector and specifically acknowledges the challenges in a developing country.

## 3.1 Policy implementation framework

Van Meter and Van Horn (1975) provide a conceptual framework for a policy implementation process. They define policy implementation as “those actions by public and private individuals (or groups) that are directed at the achievement of objectives set forth in prior policy decisions” (Van Meter & Van Horn, 1975, p.447). Van Meter and Van Horn sort policies according to the magnitude of change as the variance from previous policy and the required change in organizational systems, as well as the consensus of policy targets among the participating actors. These dimensions create a grid where policies can be placed, as shown in figure 2. According to Van Meter and Van Horn, policies with major change are more likely to have low consensus. The authors also hypothesise that policies with minor changes and high consensus are expected to be most effective and predict consensus over the policy goals to be of higher weight than the magnitude of change.

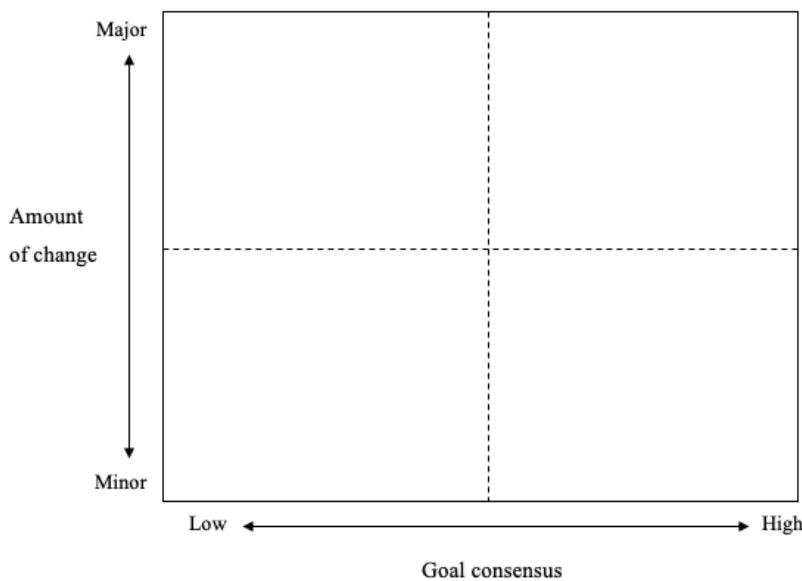
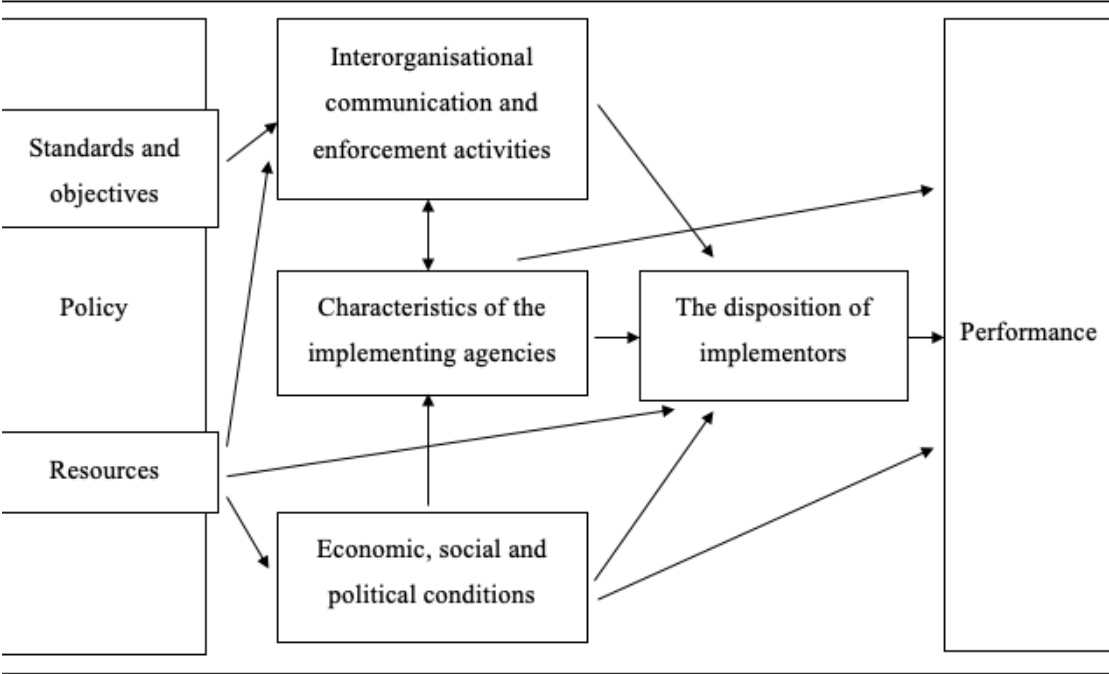


Figure 2. Change and consensus matrix (Van Meter & Van Horn, 1975, p.460).

The framework by Van Meter and Van Horn (1975) consists of six factors that directly or indirectly affect policy performance, as shown in figure 3. The policy standards and objectives need to be accompanied by performance indicators (Van Meter & Van Horn, 1975, pp.462, 464). The second factor consists of the resources for policy implementation, which can include funds, government budgeting or user charges (p.464). As a mediating factor in the process, inter-organizational communication and enforcement activities are included. Communication requires consistency, accuracy and clarity to establish a consistent vision of objectives for all involved parts and thus a more coherent process for achieving them. It is also important to have action-forcing mechanisms for the given directions, such as requirements for reporting and accounting of funds (Van Meter & Van Horn, 1975, pp.467-469). Furthermore, Van Meter and Van Horn (1975, pp.470-471) believe the characteristics of the implementing agencies to be of significance in the process. The organizational capacity of the implementers includes the competence of the staff, political resources, transparency and communication between all actors. The economic, social and political environment is another mediating factor in the model (Van Meter & Van Horn, 1975, pp.471-472). The availability of economic resources, the effect of the policy on economic and social conditions as well as the different opinions of social groups and their ability to mobilize in favour of their opinions are all factors that create a setting that can favour or impede the policy implementation. Finally, the disposition of the implementers depends on their understanding of the policy and the responses and the intensity of the response (Van Meter & Van Horn, 1975, pp.472-473).

Figure 3. Model of policy implementation process (Van Meter & Van Horn, 1975, p.463).



Van Meter and Van Horn (1975, p.474) hypothesise the linkages between the factors of the model to be dynamic. It should, therefore, be taken into account that the factors affect each other throughout the process and can change. The framework functions as a foundation for policy analysis but is not entirely suitable in the context of analysing water-related policies. The

framework is general and can be modified to include factors that are significant in the context of domestic water supply in developing countries. The framework focuses on policy implementation, and thus evaluation of the prior work regarding policy planning and setting of objectives is overlooked in their framework. In addition, the framework does not include all factors discussed in the case studies presented in the literature review.

## 3.2 Water policy framework challenges

Water policies are governed on several levels with multiple stakeholders and require therefore coordination of authority and responsibility in order to succeed (OECD, 2012, p.100). According to the OECD, the synchronizing of decisions, management and actions need to function in all directions; from regional agencies and ministries to state level as well as within each level (2012, p.100). The OECD provides a Multi-level Governance Framework for understanding this cooperation and identifies common challenges in water policy management. The gaps are identified from a broader framework for decentralized public policies but have been adapted for water service policies through a survey of 17 OECD countries.

The framework categorizes the challenges into seven “gaps”: policy, administrative, information, capacity, funding, objective and accountability gap, shown in table 1 (OECD, 2012, p.101). The policy gap refers to inefficient coordination between agencies and unclear allocation of responsibilities (OECD, 2012, p.102). To minimize the gap, coherent policy division, leadership and commitment are required from all involved actors. The administrative gap is caused by differences in geographical and administrative borders of water projects, where unclear coordination can affect the sustainability and the cost of the infrastructure (OECD, 2012, pp.101-102). It is important to consider the scale of investments together with other factors, such as water scarcity, in order to use resources efficiently. Asymmetric information between central and regional agencies cause the information gap. Especially the generation and publishing of data are important for creating more functioning water services. The capacity gap consists of scientific, technical, infrastructure and management capabilities of the actors, and can depending to the context need to be built before policy reforms or be acquired throughout the process (OECD, 2012, pp.102-103). The funding gap occurs when the revenues for policy implementation are unsatisfactory in size or constancy. The financing of water projects requires coordination between national and regional authorities for long-term planning and inclusion of maintenance costs. The objective gap refers to the discrepancy in the objectives of water policies between different levels or throughout time. Aligned targets and coordinated time-frames facilitate the realization of water-related goals. Finally, the accountability gap is an outcome of deficient transparency in water projects (OECD, 2012, pp.103-104). Involvement and awareness by the public and user-organizations aid the efficiency of policies.

*Table 1. Key Co-ordination gaps of the Multi-level Governance Framework (OECD, 2012, p.100).*

<b>Policy gap</b>	Inefficient coordination of policies and responsibilities between agencies.
<b>Administrative gap</b>	Geographical and administrative mismatch of borders causing higher costs and restricting sustainability.
<b>Information gap</b>	Asymmetric information and data between central and regional agencies.
<b>Capacity gap</b>	Lacking scientific, technical, infrastructure or management capabilities for water policy reforms.
<b>Funding gap</b>	Insufficient or unreliable revenue for water policy implementation on regional and national levels.
<b>Objective gap</b>	Differing objectives between agencies or time.
<b>Accountability gap</b>	Lack of transparency and user involvement in water-related projects.

This framework identifies key challenges for water policies but is not fully appropriate for the use of this thesis. The differing level of development between the OECD countries the framework is based on and the scope of this study creates a need for adapting this framework. The lack of contextual setting in the framework further strengthens this need.

### 3.3 Adapted theoretical framework for water policy analysis

The general policy implementation framework by Van Meter and Van Horn (1975) and the challenges in water policies identified by the OECD (2012) together with the findings from the literature review compose a foundation for analysing water policies. From these sources, a framework is constructed for this study in order to analyse water policy reforms in developing countries, in this case Uganda and Madagascar. The framework consists of five aspects, some of which have several subcategories. The aspects were identified by mapping the OECD challenges with the Van Meter and Van Horn framework for recognizing similar factors or connections. After the parallels were found, the literature review was re-read to see whether all the main themes fit into the constructed categories and alterations were made in order to take these findings into account. Although the framework is explained statically the aspects are

interdependent and are variable through the process. To which degree or in which directions is however beyond the scope of this study.

The water policy evaluation framework is comprised of the following five factors: policy and objectives, financial resources, capacity, accountability and external conditions, as shown in table 2. The policy and objectives factor refers to efficient policy coordination through the use of performance indicators for following the progress and by harmonization of the objectives. It is crucial that policy objectives are clearly understood by all actors and that they are prioritized in a consistent manner through time. Under the policy and objectives category is also the magnitude and consensus of the policy, analysed in the grid by Van Meter and Van Horn (1975) as shown in figure 2. The financial resources for the policy implementation have to be of relevant size and the collection or receiving of them has to be consistent over time. This can especially be a problem if the financing is through service charges, which can due to low user confidence or due to corruption be unreliable (Ioris, 2009; De Albuquerque, 2012, p.203). The budgeting has to include costs for all aspects of the policy, including maintenance, in order to achieve sustainable infrastructure (De Albuquerque, 2012, pp.75-77; OECD, 2012, p.103). The capacity of the policy implementation refers to the technological, infrastructure and management abilities and the institutional and legal frameworks of the water sector. Part of the management capabilities are the ability to appropriately scale the projects according to geographical and administrative borders and to target both urban and rural areas (OECD, 2012, pp.101-102). Altogether the capabilities create a foundation for implementing policies and are built through previous policies or acquired during the policy. The capabilities also determine the ability to communicate information to all involved actors for efficient interaction (Barbosa et al. 2012). The accountability of the policy depends on the transparency of the process together with the political will of the decision-makers. Additionally, the involvement of users in all steps of the process is important in order to meet their demands, as illustrated in the case studies by Bayer et al. (2012) and Gleitsmann et al. (2007). Finally, the external economic, social and political conditions are of importance because of the environment they create for policy implementation. Changes in any condition can affect policy performance directly or through any of the other aspects of the framework.



Table 2. The water policy evaluation framework. Adapted from Van Meter and Van Horn (1975) and OECD (2012).

<b>1. Policy and objectives</b>	Standards and performance indicators Coordination of objectives between actors and time Magnitude and consensus
<b>2. Financial resources</b>	Size of economic resources Reliability
<b>3. Capacity</b>	Technological and infrastructure capacities Institutional capacity Legal capacity Management and communication
<b>4. Accountability</b>	Transparency Inclusion of users Political will of implementers
<b>5. External environment</b>	Economic conditions Social conditions Political conditions

This framework will be used to analyse the performance of water policies in Uganda and Madagascar. Applying the framework on these cases helps us acquire an increased understanding of common challenges and influential factors in the sector. Each country will be classified to have low, satisfactory or high performance in each of the five factors and the included subcategories presented for comprehensive comparisons. Grading the performance will help to identify the factors that have a significant impact on the countries success or lack of thereof, and thus provide guidance for domestic water supply policies.

## 4 Data and Method

This chapter presents the data sources that are used for the thesis. The data availability and validity will be discussed for both countries. Thereafter, the method is presented to explain the reasoning and limitations.

### 4.1 Data

Analysis of the Ugandan and Malagasy water sectors is done using both qualitative and quantitative data. Qualitative primary and secondary sources are used to achieve a more nuanced picture of the performance of the sectors. Primary sources, such as policy plans and sector reports, present recent data and have a good insight into the needs of the sector and the failures experienced. These are complemented with secondary sources, including reports by the UN and the International Monetary Fund among other sources, for a more comprehensive overview. These documents provide an external point of view and evaluate the performance more objectively. The data is selected by identifying appropriate information from water sector-related documents according to the factors presented in the theoretical framework. Inclusion of different sources is used to confirm the presented information and for identifying the main challenges.

Sources for the Ugandan water sector are available for the time period of interest. However, there is a lack of both primary and secondary sources for the water sector performance in Madagascar after 2012. This provides a less clear picture of the recent progress in the Malagasy water sector. Because of the lack of data, the analysis of the Malagasy water sector performance is assessed using the most recent data available and based on an assumption of stagnant progress since then. Thus, the evaluation does not necessarily project the current development accurately and therefore the results are less reliable for Madagascar in comparison to Uganda. The long-term nature and implementation of infrastructure projects can, however, justify these assumptions to some degree. Furthermore, the analysis is compared to recent quantitative data from ICF (2019). Due to the slow progress in the Malagasy water sector according to the ICF data, the assumptions are relatively rational.

Progress in Uganda and Madagascar will be evaluated on the basis of the share of the population using improved water source. This data is from the ICF, which is based on surveys between the time period of 1992 and 2016. Using this data strengthens the qualitative results and aids in understanding the outcomes.

## 4.2 Method

This thesis will be conducted as a comparative study of the chosen countries' domestic water supply progress. Case studies are used because of the applicability of the case study method in investigating contemporary phenomena that are intertwined in the surrounding context (Yin, 2003, p.13). Case studies examine decisions; the reason for them, the implementation and the results. Since the examined water sector policies can be viewed as decisions, this is an applicable method. A case study method is suitable because of the intent to further understand the conditions and performance of water sectors in a contemporary and changing context.

For this thesis, the two cases of Uganda and Madagascar are chosen. Comparative case studies can be used to understand how events depending on the context resulted in the achieved outcomes and why similar outcomes were not achieved in other cases (David, 2009, n.p.). The countries were chosen because of the similar initial conditions but diverging performance in the water sector. Thus, a comparative case study is used to understand and compare the factors that contribute to the differences in outcomes.

Multiple sources are used for information collection in order to achieve construct validity (Yin, 2003, p.35). The performance is also validated with quantitative data for an objective comparison of the results. The analysis of the qualitative results is performed using a theoretical framework with five factors to achieve equal assessment. The framework is constructed for the purpose of analysing water policies in developing countries and is developed on the basis of the frameworks by Van Meter and Van Horn (1957) and OECD (2012) as well as the findings from previous literature. The evaluation of the performance according to the factors of the framework is aimed to be objective for accurate and reliable comparison and evolution. However, due to the nature of the subject, the assessment is somewhat relative. This is a limitation throughout the discussion of results. The performance is evaluated according to a low-satisfactory-high criterion for tangible comparison of the performances. The criteria help to identify the similarities and differences in performance, thus identifying critical factors for sector success.

A major critique of case studies is the lack of external validity (Yin, 2003, p.37). In this study, two cases are assessed to increase external validity. Understanding water policies and the performance in the sector in two different contexts is helpful for identifying central themes and the importance of factors depending on the setting. However, two cases are a small sample and the external validity is therefore a limitation.

# 5 Empirical Research

This section will give a brief background of both countries and present the results of the study. Each country will be analysed separately using the water policy framework in order to understand how the countries have performed according to each factor. The empirical results will first be presented for Uganda and then for Madagascar to achieve a clear picture of each country's hinders and achievements.

## 5.1 Country background

Backgrounds of Uganda and Madagascar are given to understand the context of the water reforms. It is of importance to place the water sector performance into the political-economy context to comprehend the availability of resources. Furthermore, data trends on domestic water access are presented for both countries.

### 5.1.1 Uganda

Uganda is a low-income country located in East Africa (World Bank, 2019a). Uganda is landlocked and shares borders and water resources, such as the Nile River and Lake Victoria, with its neighbouring countries. After gaining independence in 1962 the country experienced turbulent decades politically and economically (UNESCO, 2006). Uganda has since 1986 recovered through macro-economic reforms with a focus on liberalization and rationalized public expenditures, and thereby achieved higher rates of economic growth, more controlled inflation rates and increased tax revenues (UNESCO, 2006). In 2017, Uganda had a Human Development Index (HDI) of 0.516 and is considered to be in the low development category (UNDP, 2018, p.24).

The share of the population using an improved water source in Uganda has increased from 48.7% to 77.9% between 1995 and 2016, as shown in figure 4 (ICF, 2019). The population living in rural areas has continuously lagged behind in water access coverage compared to the urban areas, but the gap has reduced from 34% in 1995 to 16% in 2016 (ICF, 2019). Improvements have especially been made in increasing the access to improved water sources for the lower wealth quantiles. Uganda has managed to increase the access to improved water sources significantly during the past decades and simultaneously diminished the inequalities in safe water supply.

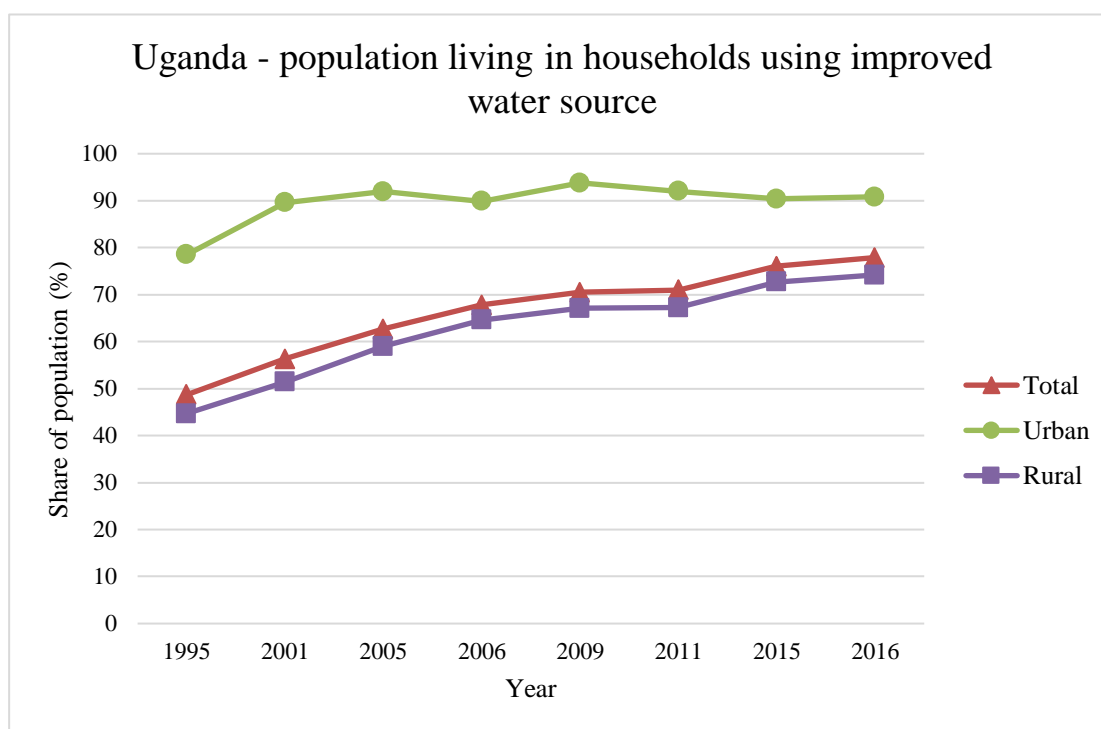


Figure 4. The share of population living in households that use improved water source in Uganda, divided into the urban and rural population (ICF, 2019).

### 5.1.2 Madagascar

Madagascar is the world's fourth largest island, located on the south-east coast of Africa (GWP, 2009). According to the World Bank (2019a), Madagascar is a low-income country and had a HDI of 0.519 in 2017 (UNDP, 2018, p.24). After gaining independence in 1960 the country has suffered from political turbulence and had four political socio-political crisis which have hampered the country's economic growth and development (UNDP, 2019). The crisis took place 1972, 1991, 2002 and 2009 and are reflected in the average GDP per capita growth rate of -0.45% between 1990 to 2017 (UNDP, 2019; World Bank, 2019b). Democratic elections have, however, been held after the most recent crisis and institutional and legal frameworks have been developed by the government for improvements in public financing and administration (UNDP, 2019).

The population share using improved water sources has only slightly increased from 41.6% in 1992 to 42.7% in 2016, as illustrated in figure 5 (ICF, 2019). While the access in rural areas has increased from 33% to 37.6% between 1992 and 2016, the coverage in urban areas has remained unimproved, slightly shrinking from 87.3% to 86% during the same time period. However, the gap between urban and rural areas is still sizeable. Similarly, the inequalities between wealth quantiles are large and the gap between the lowest and highest quantiles has substantially increased. Thus, it is clear that Madagascar has not been successful at increasing the access to improved water sources despite minor improvements in some areas. The sector has experienced increasing inequalities during the past decades. Despite the lack of overall

progress in statistics between 1992 and 2016, the last surveys show an improvement in the population share using an improved water source. Between 2013 and 2016 the share of the population increased from 35% to 42.7%, which could imply a beginning of progress in the sector. It should, however, be taken into account that the figures have also fluctuated during the time period.

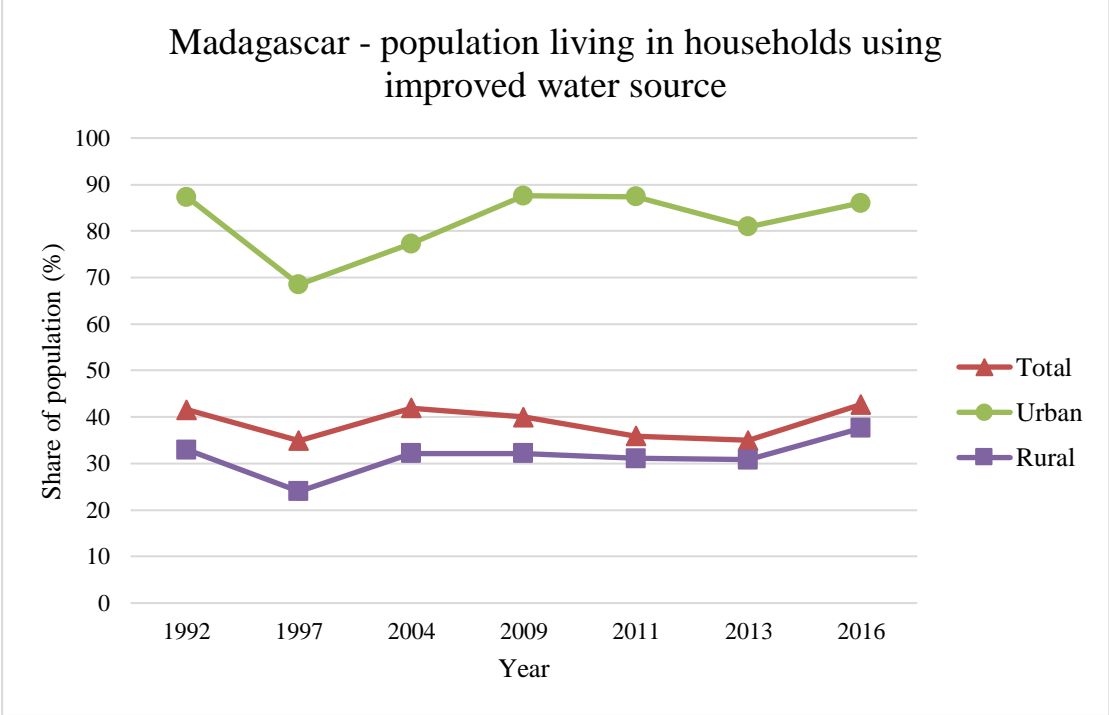


Figure 5. The share of population living in households that use improved water source in Madagascar, divided into the urban and rural population (ICF, 2019).

## 5.2 Uganda

The Ugandan water sector will be assessed according to the factors presented in the water sector framework in table 2. Each factor and subcategory will be evaluated to understand the effects on the water sector performance.

### 5.2.1 Policy and objectives

The Ugandan water sector has during the past decades undergone a reform to a more decentralised delivery of water services and higher private sector participation (World Bank, 2002). A Water Action Plan (WAP) was initiated in 1993 to manage and develop the sector for the upcoming challenges (UNESCO, 2006). The WAP was used as a foundation for the subsequent reforms. The Ugandan water sector reform is based on assessment studies of the urban and rural areas in order to adapt the reform to the national development context (World

Bank, 2002). The reform was, unlike in many other cases, initiated by the Government of Uganda rather than external sources. Stakeholders within the sector were involved in the planning of the reform in order to produce a more effective, coordinated and reliable approach (World Bank, 2002). The assessment studies and planning of the reform launched in 1998 and are closely linked to the national targets of poverty alleviation, especially the Poverty Eradication Programme (PEAP). The participatory method together with the well-executed studies have been reasons for the many positive reviews of the reform (World Bank, 2002). The main strategies of the reform are the mentioned decentralisation and increased private sector participation together with creating a sector-wide approach (SWAP) and building trust and harmony among the stakeholders.

The National Water Policy (NWP) is the first documented national water policy in Uganda and aims to link water policies with socio-economic development and environmental sustainability (Ministry of Lands, Water and Environment, 1999). The NWP states the main objective of the water sector as following: “to manage and develop the water resources of Uganda in an integrated and sustainable manner so as to secure and provide water of adequate quantity and quality for all social and economic needs for the present and future generations with the full participation of all stakeholders” (Ministry of Lands, Water and Environment, 1999, p.8). Environmental and health protection, institutional reforms with an integrated approach, increased community responsibility of the management and demand-driven distribution are all included as principles for establishing more sustainable and inclusive water services.

Uganda is currently on its’ second National Development Plan (NDPII), reaching from 2015/16 to 2019/20 (2015, p.xvii). The objective of the National Development Plan is to achieve the Uganda Vision 2040 and achieving middle-income status in 2020. The NDPII defines the Ministry of Water and Environment as responsible for the coordination of the sector, policy preparation and legislative commencement as well as defining standards, inspection and monitoring of the water provision and technical support (2015, p.202). Furthermore, the local governments’ role in the distribution is recognized together with the private sector and the assistance from Civil Society Organizations (CSOs). Despite this, the lack of adequate coordination has been a hindering factor for achieving the targets (UNESCO, 2006). The problems in coordination have been present at both national and local government levels.

The NDPII provides key targets for development, including the targets of urban safe water coverage to be increased from 77 % (baseline 2012/13) to 100 % in 2019/2020, and rural safe water coverage to be increased from 65 % (baseline 2012/13) to 79 % in 2019/2020 (2015, p.102). In addition, a target of 100 % coverage is outlined in both urban and rural areas for reaching the Uganda Vision 2040. The development of the sector is assessed using “Golden Indicators” to evaluate annual changes in various standards within the functionality, school sanitation, equity and gender among others (MWE, 2017). The presented targets are ambitious, which reflects the aspiration of the nation for attaining the right to clean and affordable water as well as confidence for national development. However, high targets can also be hindering because of reduced effectiveness (World Bank, 2002). Unrealistic targets can cause more emphasis to be placed on new investments, and the sustainability, operation and management may thereby be overlooked. The most recent data from ICF (2019) shows the coverage rates for improved water sources to be 90.8% in urban areas and 74.2% in rural areas in 2016. Thus, the targets for 2019/2020 are unlikely to be met. Water access is an important target, but the

available resources may need to be compromised with other developmental matters, such as education or health care. As discussed more elaborately in the next chapter, the water sector is not highly prioritized from a financial point of view. The magnitude of improvement could, therefore, be described as large but the consensus among the issue relatively weak. Applying the framework by Van Meter and Van Horn (1975) in figure 2, the Ugandan water policy reform could be placed in the upper left square or in the upper middle area. According to Van Meter and Van Horn, the probability of achieving the goals is relatively low, which is supported by the current outcomes in the sector.

### 5.2.2 Financial resources

The NWP states that the sector financing is to be carried out with efficient management and suitable technologies (Ministry of Lands, Water and Environment, 1999). The allocation of public funds is prioritized for the least endowed and those willing to be involved in the process. The financial resources for the water sector in Uganda are divided into on-budget funding and off-budget funding, where the first includes government revenue from taxation and budgeted funding support and the latter includes funds external to the government system, such as funds from funding partners or CSOs (MWE, 2017, p.22). The overall trend of sector financing has been increasing during the past 10 years and the water sector is considered one of the key priorities (UNESCO, 2006). The Poverty Action Fund has been a significant financial contribution through PEAP, which stresses the importance of the water sector for national development (UNESCO, 2006). Debt relief funds were planned to be a major source of financing for the water sector reform (World Bank, 2002). A previously important but decreasing part of the financial resources has been donor funding through projects (UNESCO, 2005). The donor financing has decreased from 77% of the total funding in 2000 to 19% in 2017 (UNESCO, 2006, p.27; MWE, 2018, p.10-11). This is in accordance with the SWAP, where the strategy is to create more comprehensive financing within the sector because project-based approaches often result in duplicated and inefficient efforts (World Bank, 2002). According to the latest report, in addition to the donor funding of 19%, the current sources of the water sector funding are Appropriation in Aid of 51%, government contribution of 26% and off-budget funding of 6% (MWE, 2018).

The intention is to meet the decreasing share of donor funding by increasing government share, thereby creating more self-sufficient financing (UNESCO, 2006). This has been done through increased public awareness, meetings with water permit holders and compliance monitoring visits (Kiggundu, 2017). Additionally, a more effective water sector is expected to attract more investments from both the government and external sources (World Bank, 2002). This was proven to be the case during the first years of the reform when the funding tripled between 1997 and 2002 (World Bank, 2002).

Important aspects of the domestic water sector financing are finding reasonable pricing and appropriate solutions for collecting service charges (De Albuquerque, 2012, p.81). Kampala, the capital city of Uganda, has found an effective solution for collecting service charges from the users. A new policy allows for easier payment with banks, direct debit, mobile banking and mobile money in addition to the geographical ease of payment at supermarkets and gas stations (De Albuquerque, 2012, p.81). The simplicity makes it possible for users to make smaller



payments more frequently and is therefore more convenient, especially for the poorest. These actions can improve the reliability of a consistent flow of revenue in the sector. Despite these improvements, users still face challenges with payment due to corruption (De Albuquerque, 2012, p.204).

The general trend shows increasing funds to the water sector, but the government's contribution to the national budget has been approximately 3% from 2011 onwards (MWE, 2017). The 3 % share of the budget is low compared to other sectors and is according to Denise Le Sève (2018) a result of the low relative productivity of the sector. The budget share has slightly decreased during the past three years with 0.1% decreases per year (MWE, 2017). This financing is considered insufficient for reaching the goals and targets of the sector, where most resources are allocated to operation and maintenance rather than new investments (MWE, 2017; MWE, 2018). Inadequate financial resources are identified as one of the key challenges (MWE, 2017; UNESCO, 2006).

The SWAP framework promotes integrated financing and has resulted in more funding through general budget support from the included partners. Integrated financing is more efficient for flexible allocation of resources according to the demands and priorities of the nation. Improvements within the management and planning of financial resources have been made in the recent years, as the budget of the fiscal year of 2017 was the first to be based on program-based budgeting system (MWE, 2017). Program-based budgeting systems refers to budgeting being planned on the expected outcomes of the succeeding budget cycle and is believed to improve resource allocation, target realization and increase efficiency in the mobilization of funds.

### 5.2.3 Capacity

Together with the NWP, the Water Statute (1995) is a significant principle law for the reform in Uganda. The flexibility in regard to changes in conditions makes the law modern (UNESCO, 2006). The law compromises the provision of adequate water supply and the protection of the environment. The key objectives of the Water Statute (1995) include the promotion of rational water management and use through standards, coordination of public and private actors and the delegation of responsibilities over water resources. Additional objectives of the Water Statute are the prevention and control of pollution and the improvement of the quantity and quality of water provision.

An important step in achieving universal water access is the formal adjudication of the right to water, as discussed by De Albuquerque (2012, p.194). Legal recognition can give accountability and help to accomplish the targets. Uganda has recognised the right to water in their 1995 Constitution. It states that “The State shall endeavour to fulfil the fundamental rights of all Ugandans to social justice and economic development and shall, in particular, ensure that ... all Ugandans enjoy rights and opportunities and access to education, health services, clean and safe water, work, decent shelter, adequate clothing, food security and pension and retirement benefits.” In addition, the Constitution states that the state is responsible for promoting adequate management of the water sector at all levels. Uganda has therefore established clear legal underpinnings for achieving safe water coverage for all.

The legal capacity functions as a ground for the institutional capacity of the sector. The water sector reform proposed in the NWP and the Water Statute among other supporting documents build the institutional framework and the required reforms. A central function of the SWAP is to create a comprehensive institutional framework for the water sector, including topics such as gender equality, health and social and economic development (UNESCO, 2006). The framework strengthens the coordination between all involved stakeholders at the different stages of planning and implementation. Part of this has been the creation of the Sector Working Groups for more efficient resource allocation between involved stakeholders (Kiggundu, 2017). Increased coordination and stakeholder involvement create trust, which is beneficial for efficiency and has been helpful in gathering the funding through the government budget for more coordinated financing of projects (UNESCO, 2006). The local governments' act (1997) provided further clarity on the strategy for decentralisation and the roles and responsibilities of the different levels of government in the provision and management of water. However, a problem on the district level has been the increasing number of districts, which often arise from ethnic or political motives (Denise Le Sève, 2018). The formation of a new district implies that the existing resources have to be divided between two districts, which halves the financial resources and is a disadvantage to the economies of scale in the water provision (Denise Le Sève, 2018; UNESCO, 2006). In addition, the increased number of districts creates problems within the districts' institutional, technical and management capacities.

Lack of financial and human resources is a problem at both the national and local levels of the water sector (UNESCO, 2006). Relevant skills and knowledge have hindered the management of the sector and therefore training has been provided for employees. Unsatisfactory financial and human resources have also been a problem with the operation and maintenance of services at the local level. Inadequate contract and financial skills in rural areas result in underutilized funds and deprioritization of operation and maintenance, leading to unsustainable outcomes (Denise Le Sève, 2018; UNESCO, 2006). The Ministry of Water and Environment (MWE) recognize technical skills, leadership and management to be major challenges in their annual report of the water sector (MWE, 2017).

The infrastructure construction in Uganda is nearly outpaced by the high population growth of the country (MWE, 2018). The population growth results in overcrowded informal settlements with increasing demand for water services in rural areas (NDP II, p.202). This is demonstrated by the unchanged coverage in rural areas from 2017 to 2018 despite managing to increase the number of households with safe water access (MWE, 2018). The large unmet demand for infrastructure in the rural areas, partly due to lack of funding, is a contributing factor in the increasing urbanisation in Uganda. The urbanisation is a current issue in the country and is expected to increase according to the Vision 2040 (MWE, 2018). The high population and urbanisation growth rates are factors that affect Uganda's ability to reach targets in the water sector.

#### 5.2.4 Accountability

The water sector reform, including the SWAP framework, recognises the need for trust and involvement of stakeholders for efficient progress (World Bank, 2002). The Sector Working Groups and Water User Committees are examples of the initiatives taken to include all actors

in the process (Kiggundu, 2017; MWE, 2017). In order to achieve targets and create a functioning system, ownership needs to be extended beyond the government. Awareness and consistency of the ownership of water services result in more involved stakeholders and thereby better coordination and allocation of resources (World Bank, 2002; Kiggundu, 2017). This is one of the targets of the Water User Committees, which aim for more self-sufficient management and operation by communities through training from the MWE (MWE, 2017). Of the constructed facilities between 2000 and 2017, 28% are under community-based management with support from the government (MWE, 2017). Another way of involving the users in Uganda has been through Community Integrated Development Initiatives (CIDI) (Bouchane, 2011). CIDI uses Citizen Report Cards for collecting information about the users' satisfaction with water services through questionnaires. The results are shared with the government and service providers in order to create a mutual understanding of the existing services and their condition for effective resource allocation (Bouchane, 2011). A higher degree of stakeholder inclusion also makes the process more transparent.

Despite the recognition of the subject and strategies for coping with community and stakeholder involvement the work still needs constant improvements. According to UNESCO (2006), the water sector has been unsatisfactory in involving the local communities in all parts of planning and implementation. The local councils are the lowest administrative units in rural areas but have inadequate capacities or power for realising requests for improvement (Denis Le Sève, 2018). The positions in the councils are often held by the richest, which amplifies the social and economic inequalities. Thus, although the reforms have focused on accountability on a national level, the local levels are less advanced in that aspect.

### 5.2.5 Economic, social and political environment

Uganda has experienced relatively high GDP growth rates from 1990 onwards, with an average growth rate of 6.5% (World Bank, 2019b). However, the growth rates have not met the NDPII targets. The target GDP growth rate between 2010 and 2013 was set at 7.2% while the country achieved an average growth rate of 5.5% (NDPII, 2015). It is also important to consider the GDP per capita growth rate, which between 1990 and 2017 was on average equal to 3% (World Bank, 2019b). The growth has provided a sufficient foundation for development in the water sector. The high population growth rate of 3.3% is above the average rate of Sub-Saharan Africa and hinders the expansion of water access coverage directly and indirectly. As discussed earlier, the growth in water infrastructure investments barely manages to keep up with the population growth and therefore the development in relative numbers is stagnant (MWE, 2018). In addition, more people will share the existing water sources and therefore the system will require higher levels of maintenance, adding a further cost in the already deficient budget resources. The NDPII strategy emphasises the need for macro-economic stability and capacity to raise sufficient resources (NDPII, 2015). Despite the inability to meet the goals for economic growth, Uganda can be seen as successful in creating a sound economic atmosphere for development and water service provision.

Uganda has been targeting poverty alleviation through the PEAP among other projects. According to the NDPII (2015), the national poverty rate has declined by 36% between 1992 and 2012. Poverty is however still an issue and has increased in the recent years. The latest

figures from 2016 show the poverty headcount ratio to be 40.2% (\$1.90 a day) (World Bank, 2019b). Poverty can be considered both an outcome and a cause of water access. Without adequate water services, it is difficult for individuals to escape poverty as their basic needs are not met. Poverty can also hinder water projects due to the lower revenues in poor areas. Additional work is still required to alleviate poverty and reduce inequalities between urban and rural areas as well as between socio-economic classes. The Gini index of Uganda was 0.395 in 2012 and showed higher inequalities in urban areas compared to the rural areas (NDPII, 2015). High inequalities reduce accountability in water projects, as discussed earlier by Denis Le Sève (2018).

Politically, the water sector requires more attention, especially through financing. The water sector is not prioritised in the budgeting, as demonstrated by the 3% share of the budget (Denis Le Sève, 2018). Another political issue has been the formation of new districts, which reduce the technical and management capacities as well as the financial resources. The formation of districts is found to escalate before elections (Denis Le Sève, 2018). Furthermore, the geographical location of Uganda and the transboundary water resources create additional political pressure and dependency. This has influenced the institutional and legal frameworks with the aim of sustainable use and sharing of resources (UNESCO, 2006). There are several shared programs between the neighbouring countries, but conflicting interests are still an issue. The transboundary resources also make Uganda reliant on the political stability of the neighbouring countries.

## 5.3 Madagascar

In the following section, the performance of the Malagasy water sector will be analysed using the water sector framework in table 2. Each factor of the framework will be evaluated to see how the factors affected domestic water access in the country.

### 5.3.1 Policy and objectives

The Malagasy Drinking water supply was between 1990 and 2008 managed by the Ministry of Energy and Mines (Rasolofomanana, 2012). The placement of water supply and sanitation under the Ministry of Energy and Mines resulted in under-prioritization of water access because of the economic importance of mining and energy for the country. In 2008, the Ministry of Water became responsible for the water supply and sanitation management after pressure from technical and financial partners (Rasolofomanana, 2012). The Ministry of Water is responsible for the planning and implementation of water policies and the coordination, budgeting and monitoring of activities within the sector (USAID, 2010). The Autonomous National Water and Sanitation Authority (ANDEA) is responsible for integrated water management. Furthermore, a regulatory agency, Water and Sanitation Regulation Body (SOREA), is to be provided but is not yet operational (USAID, 2010). The legal directives order each commune the responsibility for water services provision (Rasolofomanana, 2012). Communes can delegate this to public service through contracts or leasing. JIRAMA, a semi-public company, is responsible for water

service provision in most urban areas, while rural areas are covered by NGOs and private actors (Rasolofomanana, 2012).

An important strategy for achieving poverty alleviation and economic growth and reaching the Millennium Development Goals (MDGs) has been the Madagascar Action Plan (MAP), launched in 2006 (World Bank, 2007). Following various poverty reduction plans, MAP is the first strategy constructed by the Malagasy government and is adapted to the socio-economic and political context of the country. The main aims of the MAP include resource mobilization and the promotion of growth in the public and private sectors (World Bank, 2007). The targets presented in MAP are ambitious, including a target of 65% coverage of safe water access for 2012. The political crisis of 2009 caused a disruption in the MAP. Currently, a revised Project Development Objective (PDO) is followed in order to re-establish and improve the MAP, particularly focusing on “public financial management and social accountability at the central government and the Communal levels” (World Bank, 2012, p.5). The revised PDO, despite aiming to improve the institutional and financial frameworks, does not provide sector-specific goals and thus no current targets for water access coverage are presented. In addition, Madagascar has a National Programme for Access to Safe Water and Sanitation (PNAEPA), which was created in 2005. An updated version of PNAEPA was made in 2008 in order to align the targets and strategies with MAP (Rasolofomanana, 2012).

Operation in the Malagasy water sector is largely achieved through projects. In the rural areas, the National Rural Drinking Water Supply and Sanitation (DWSS) Programme was applied from 2005 to 2015 for the realisation of the MDGs and to alleviate poverty (Rabarison et al. 2016, p.61; African Development Fund, 2005). The rural DWSS programme was initiated by the African Development Bank and received financial support from the World Bank among other partners (African Development Fund, 2005). Targeting the rural areas is of crucial because of the inequalities between urban and rural areas. The programme aimed to improve the planning and management of policies, infrastructure recovery and capacity of the water sector. The expected result of the programme for 2015 was a 52 % coverage rate of safe water access in rural areas (African Development Fund, 2005).

Monitoring of the sector is insufficient for tracking progress and does not provide enough evidence for future policy-making (Rasolofomanana, 2012). In an attempt to improve the monitoring of the sector, harmonisation between different actors was carried out to ensure coherency. Coordinated monitoring of the infrastructure and the quality of services was carried out. Service providers’ results are in many cases not presented to authorities and the monitoring of the quality of water is both inadequate in regard to the methods and the quantity carried out (UN, 2014). Despite attempts to improve the monitoring, the results have not been considered adequate for quantitative or qualitative evaluation in accordance with the legal framework (GWP, 2009).

The lack of current water sector targets is alarming for future development in the water sector as well as for poverty alleviation and economic development. The previous targets presented in the rural DWSS programme and the MAP were, however, ambitious (African Development Fund, 2005; USAID, 2010). In a national WASH Program, the targets for urban and rural drinking water supply were 62% and 61% respectively, to be reached in 2018 (WHO, 2015). The targets were not achieved for any of the previous programme plans, and the data from 2016

suggests that the 2018 WASH targets were unlikely to have been reached. The African Development Fund recognized the need for several other improvements including policy planning, institutional capacity as well as human resources in order to achieve the goals presented in the rural DWSS programme for 2015. A large contributing factor for the lack of success has been the interruptions caused by political unrest in the country. As discussed earlier, unrealistically high targets can also cause less efficient progress and negligence of management and sustainability (World Bank, 2002). This would place Madagascar in the upper left corner of the matrix presented by Van Horn and Van Meter (1975) in figure 2. The matrix would thereby predict low probability of reaching the targets, which is confirmed by the results in Madagascar.

### 5.3.2 Financial resources

Funding of the water sector in Madagascar constitutes of water and sanitation project funding, intergovernmental transfers, communes' funds and user contributions, and off-budget funding (Rasolofomanana, 2012). A major share of the financing is through project-based funding which is allocated within the budget. Moreover, off-budget funding is significant, contributing to over 20% of the total funding and consisting of investments at the site for new water services as well as for capacity strengthening of communes and villages. A possible source of future funding for the communes could be intergovernmental transfers, but they have not yet been large enough to notably affect the sector performance (Rasolofomanana, 2012). The main source of funding in the water sector is provided by the African Development Bank, which also had its' own safe water and sanitation programme for rural areas between 2008 and 2012 under PNEAPA (Rasolofomanana, 2012; USAID, 2010). Together with the project-based funding and large off-budget funding, this demonstrates the Malagasy water sector's dependence on external financing.

The water sector in Madagascar suffers from low levels of funding as well as inadequate mobilisation of the available funds (IMF, 2017; Rasolofomanana, 2012). In 2008, the Ministry of Water only spent approximately 30% of the available funding, indicating the lack of capabilities for financing the sector efficiently (Rasolofomanana, 2012). Furthermore, the budget share for water and sanitation has been decreasing, despite the budget planning recognising water and sanitation as a key focus for development (Ministry of Finance, 2017; Rasolofomanana, 2012). The Ministry of Water received 2.77% of the budget in 2010 while the budget for 2017 has decreased to 1.32% (Rasolofomanana, 2012; Ministry of Finance, 2017). A reason for the inadequate volumes of financing is that the sector is unable to defend its ground for financing in budget planning (Rasolofomanana, 2012). Miakatra (2014) identified reasons for the inadequate financing to stem from administrative incompetence of the state and institutional weakness, which prohibit the sector from large investment accumulation and result in the incapability to implement large programmes. Additionally, the budgeting is not adapted to account for the interrelated issues of poverty and vulnerability and is therefore insufficient for building sustainable infrastructure (Rasolofomanana, 2012). Similar challenges have been identified in some of the large projects, such as the rural DWSS project, where the exclusion of cost recovery and lack of financing have hindered development (African Development Fund, 2005).

As part of the decentralisation of the sector, taxation and recovery cost collection is delegated to community responsibility (Rasolofomanana, 2012; Miakatra, 2014). The recovery cost is to be comprised of contributions from each service point, as legislated in the Water Code (1999). Although not yet fulfilled, the Water Code targets to include investment, maintenance, management and social costs in addition to the recovery costs. The taxation levels are determined by the commune councils and the tax revenues are re-invested in the sector (Rasolofomanana, 2012). However, the law defines 10% as the maximum tariff rate due to the crucial role of water access in development (Water Code, 1999). The revenue from taxation could be a contributing factor for creating sustainable infrastructure, but this is due to low taxes and low collection rates not the case today. In the urban areas where JIRAMA is in charge, the charges are paid by monthly sums for operation and management of the infrastructure. JIRAMA adjusts the prices accordingly to consumption, distribution and the economic context (Rasolofomanana, 2012). The urban areas contribute to the recovery costs through labour and material provision. Overall, Madagascar has adequately planned the recovery cost collection but is not able to operationalize the strategies efficiently.

### 5.3.3 Capacity

The legal framework for the Malagasy water sector lies on the Water Code (1999). The Water Code outlines the strategies for domestic water supply and sanitation and defines the taxation and provision responsibilities of water services. The law defines water as an economic resource by requiring all water sources to collect revenue through tariffs. It recognises full cost-recovery, including operation and maintenance costs while also willing to adjust to low-income citizens' payment capabilities. Furthermore, the communes are responsible for the delivery of water services in the area and thus the strategy for decentralization is outlined in the legal framework. If the commune lacks the capacity to deliver services this will be the responsibility of the Ministry of Water, which is the case in many communes (Water Code, 1999; Rasolofomanana, 2012).

The Water Code (1999) provides a comprehensive foundation for the water sector, but the implementation is incomplete (Rasolofomanana, 2012). The operation of supplementary ministries and agencies, such as SOREA, is not complete. This creates confusion between the current actors regarding the functions of regulation, operation and control. The Water Code must be implemented to the full extent in order to create a sustainable and functioning water sector in Madagascar.

Delays in the establishment of the supplementary structures and the consequential confusing regarding roles in the sector are a reason for the inadequate institutional capacity of the sector (Rasolofomanana, 2012). As part of the realisation of the Water Code is the operation of ANDEA, which is responsible for rational development and integrated management of the sector, examining current and future demands and challenges in the sector, planning of national programmes and setting national standards (Rasolofomanana, 2012; African Development Fund, 2005). The institutional capacity of ANDEA has however been criticized as weak and has therefore received supportive funding from the African Development Fund (African Development Fund, 2005). The Directorate of Drinking Water and Sanitation (DEPA) is another structure within the water sector, and functions to manage the sector and the

programmes. DEPA works together with ANDEA and ministries of population and social welfare for more comprehensive action. Overall, the performance of the legal and institutional segments is mainly hindered by insufficient implementation rather than the planning of structure and legislation.

The issues of implementation can also be found when assessing the decentralization strategies of the Malagasy water sector (Rasolofomanana, 2012). Despite clear geographical division in political areas, the funding is insufficiently delegated to the divisions. 95% of the sector budget is controlled by the central administration, which impedes the authority of communes to operate and develop the communal water infrastructure and administrate the system (Rasolofomanana, 2012; WaterAid Madagascar, 2016). Thus, the budgetary and administrative scopes in the water sector do not match. Many districts are undersupplied due to the low administrative capacity of the state and the low level of financing to implement the planned decentralization strategies (Rasolofomanana, 2012; Miakatra, 2014). The sector possesses the strategies and instruments for planning and monitoring but is unable to use them efficiently or lacks the financial capacity to use them. Additionally, inadequate infrastructure is a hinder for reaching all areas. This is, for example, the case with the monitoring of the sector, which is to be carried out by the Ministry of Water. Despite large human resource expansions, the task is problematic due to the inability to reach many deprived areas (Rasolofomanana, 2012). In the rural DWSS programme this issue was tackled by dividing the country into 13 areas on the requirements of geographical and socio-economic setting (African Development Fund, 2005). The areas would thus be more suitable for providing suitable technical solutions and administrative coordination within each area.

The Ministry of Water and the Water Code recognize the crucial role of the communes for efficient sector management (Water Code, 1999; Ran'Eau, 2011). The insufficient decentralization together with the lack of skills in the communities result in deficient construction of new water infrastructure and insufficient maintenance of the existing services. With adequate authority, financing and skills, the sustainability could be improved, and the services could be more efficiently moulded to fit the demands of the users. In addition to the deficient capacities of the communes in the rural areas, the JIRAMA has also experienced problems in the form of financial and structural problems, hindering the company from meeting the existing demand in the urban areas (Rasolofomanana, 2012). Currently, the communication between various stakeholders in the sector is a hinder for cooperation and quick process of water infrastructure implementation (GWP, 2009).

#### 5.3.4 Accountability

Madagascar promotes the inclusion of communities as an important factor for achieving a functioning and efficient water sector (Miakatra, 2014). The Water Code states grassroots community involvement to be essential for sustainable sector development (1999). Despite ambitions for community involvement at all stages of the process, users' engagement is hindered by central decision-making and lack of communication between central and local levels (Miakatra, 2014; WaterAid Madagascar, 2016). One reason for the low inclusion of users is the lack of political will and limited approaches for providing the communes authority over water services. Thus, the matter of implementing is the issue, despite the adequate planning



presented in the legislation. The accountability of the sector is further reduced due to the low availability of information made public. Performance reviews or user satisfaction surveys are not published, which hinders the development of the sector and reduces transparency to stakeholders who cannot see whether and how progress is made (UN, 2014).

Madagascar has projects for improving user inclusion in the water sector. The second phase of the Local Initiative Support Programme has funded water and sanitation infrastructure projects and worked towards creating more community involvement in management (Miakatra, 2014). The aim is to include communities as participants and other actors through better communication between actors and areas. A demand-driven structure was applied to adapt to the political and social environments and to command to the users' priorities and problems.

### 5.3.5 Economic, social and political environment

A large factor affecting the Malagasy water sector performance has been the political turbulence, which has had a negative impact on the growth and development of the country (IMF, 2017). The poverty levels have remained high and the social conditions are poor. In 2012, the poverty headcount ratio of \$1.90 a day was 77.6% (World Bank, 2019b). The high level of poverty is unevenly distributed and stems from different reasons in urban and rural areas (African Development Fund, 2005). In the urban areas, the main causes of poverty include the lack of education and the functionality of the labour market, whereas the rural poverty is linked to infrastructure shortage, including water services, and insufficient access to land, education, health services and capital. Additionally, the average population growth of 2.9% a year, creates pressure on domestic water demand (IMF, 2017; World Bank, 2019b). The trend in GDP per capita growth has turned positive after 2013, but the consequences of the crisis often require long-term support (World Bank, 2019b).

The MAP recognizes the need for a sound macro-economic context for achieving the outlined targets (World Bank, 2007). It is essential for economic growth, revenue generation and accumulation of investments. Linked to the socio-economic performance and the lack of accountability, the rate of tax collection is below the targeted rates for acquiring adequate financing. Furthermore, Madagascar has experienced extreme weather events, which have destroyed infrastructure and created social and economic problems for the nation and its population (WaterAid Madagascar, 2016). Overall, external factors such as the natural catastrophes and political crisis have affected the country and the water sector significantly during the past decades.

## 6 Discussion

The discussion compares the results of Uganda and Madagascar from the previous chapter. The performances are assessed comparatively to find factors that caused the outcomes. This is done using the water policy framework, from which main factors are identified to explain the diverging trend in past decades. The performance of the countries is summarised below in table 3 and is graded according to a scale of low, satisfactory and high. The grading is used comparatively but is to some degree relative to the circumstances of each country. At first glance, the table may give an impression of relatively alike performance, but there are crucial differences especially in the policy and objectives and the external environments of the countries.

*Table 3. Performance of Uganda and Madagascar according to the water policy framework.*

<b>Factors of the water policy framework</b>	<b>Uganda</b>	<b>Madagascar</b>
1. Policy and objectives: <ul style="list-style-type: none"> <li>- Standards and performance indicators</li> <li>- Coordination of objectives between actors and time</li> <li>- Magnitude and consensus</li> </ul>	High High Satisfactory	Low Low Satisfactory
2. Financial resources: <ul style="list-style-type: none"> <li>- Size of economic resources</li> <li>- Reliability</li> </ul>	Low Satisfactory	Low Low
3. Capacity: <ul style="list-style-type: none"> <li>- Legal capacity</li> <li>- Institutional capacity</li> <li>- Technological and infrastructure capacities</li> <li>- Management and communication</li> </ul>	High Satisfactory Satisfactory Satisfactory	High Low Satisfactory Low
4. Accountability: <ul style="list-style-type: none"> <li>- Transparency</li> <li>- Inclusion of users</li> <li>- Political will of implementers</li> </ul>	Satisfactory Satisfactory Satisfactory	Low Satisfactory Low
5. External environment: <ul style="list-style-type: none"> <li>- Economic</li> <li>- Social</li> <li>- Political</li> </ul>	Satisfactory Satisfactory Satisfactory	Low Low Low

The two countries differ significantly on the policies and objectives of the water sectors. Uganda has several frameworks, including SWAP, NWP and NDPII, which are all aligned and complementary for the planning of the sector. While Madagascar also has MAP and DWSS among other plans, the policies are not to the same degree nationally implemented for comprehensive outcomes. Uganda defines clear medium and long-term targets for the sector together with evaluation criteria, which contribute to unified striving towards targets. Similar targets are not presented by Madagascar, which is alarming for the development of the sector. When comparing earlier targets in the Malagasy water sector with the Ugandan targets it can be seen that both are ambitious, but the consensus is relatively low. Madagascar's targets can be seen as somewhat less achievable according to the Van Meter and Van Horn (1975) matrix, partly due to the political instability which resulted in the disruption of programmes. Nevertheless, both countries would require a higher consensus among stakeholders and higher prioritization of the sector for achieving targets. It should also be noted that overly ambitious targets can result in negligence of operation and maintenance, and a balance is required for sustainable improvements. Overall, the policies and objectives of the water sector are a key difference between the countries.

Financial resources were identified to be a key challenge for both countries and would need higher prioritization for the achievement of goals in the sector. Financial resources are a key aspect for the overall performance because of the restrictions they put on all factors of the process, including human resources, project implementation, management of existing infrastructure and the scale of programmes. A difference between Uganda and Madagascar is the mobilization of the funding, where Madagascar struggled to efficiently use the existing resources. In addition, Madagascar has been less successful at implementing the decentralised strategy within the financial planning and collecting service charges from the users. Despite recognising the importance of community involvement for cost-recovery of in the Water Code, this is not followed in practice. Furthermore, the project-based operation in Madagascar is less efficient due to the overlapping use of resources. For better performance in the sector, both Uganda and Madagascar require more financial resources. However, the poor financial performance in both countries indicates the factor to be less central for domestic water supply progress, as proven by the financially constrained water sector of Uganda.

The legal capacities of Uganda and Madagascar are high. Both countries have clear documentation that acknowledges the right to clean and affordable water access and delegates the responsibility of water provision. This is an important foundation for programme planning and institutional construction. The institutional capacity is however also dependent on the operational efficiency of agencies and ministries. Uganda outperforms Madagascar regarding the institutional capacity of the water sector. In Uganda, the SWAP framework provides clear guidelines for the operation of the agencies and institutional structures, but the work is hindered by the formation of new political districts and lacking knowledge and skills. In the case of Madagascar, the institutional system is adequately planned for achieving development of the sector. The planned institutional structures are however not all operational, which causes confusion of the roles and responsibilities between the existing actors. The institutional performance is also dampened by poor communication between actors in the sector. These findings are similar to those by Barbosa et al. (2016), who also emphasized the institutional challenges in the São Paulo water reform, including unclear responsibilities and inefficient communication between local and central levels. A common challenge for Uganda and

Madagascar is the high population growth rates, which nearly outpace the water infrastructure growth. Another issue in the Malagasy water sector is the lack of general infrastructure for reaching all areas. Overall, both countries have had a relatively acceptable water sector capacity, although differing in some details. A difference that can explain the differences in water coverage rates could be the less successful implementation of the legislation and planned institutional structures and the inefficient communication in Madagascar.

Considering the accountability of the water sector, Uganda has been more successful in establishing a more transparent and inclusive process. This is for example reflected in the publishing of annual reports of sector performance, while Madagascar lacks similar documents. In addition, Uganda is more transparent regarding user surveys whereas in Madagascar these are not carried out to the same extent and remain unpublished. Both countries have acknowledged the importance of demand-driven approaches and the key role of the communities in creating a sustainable system. Despite this, neither have entirely succeeded in suitable inclusion of the users and thus the outcomes are comparable to the studies by Baye et al. (2012) and Gleitsmann et al. (2007). Both Uganda and Madagascar are not able to fully include users in the decision-making because of hierarchy on the local level and central decision-making. For a more functioning domestic water supply, the users need to be included throughout the process, including the planning. Additionally, the incomplete and inefficient decentralisation is a large constraint in the Malagasy water sector.

In their national development plans, both Uganda and Madagascar recognize the importance of a sound economic setting for achieving progress in the water sector. A significant cause of the stagnant performance of the Malagasy water sector was the socio-political turbulence. This has a negative effect on the economic, political and social environment for water policy planning and implementation. Projects were in some cases stopped and resources were reprioritized. This is in line with the explanation offered in ICA (UNDP, 2018), according to which a change in policy requires a change in political power. In the case of Madagascar, the change during the crisis was negative. Uganda, on the other hand, has provided a suitable foundation for the sector, despite not reaching the targeted economic goals. The absence of large turbulence creates a safer setting for investments and projects, allowing for consistent development in the sector. The external environment is, therefore, a contributing reason to the higher degree of implementation of legal and institutional planning in the sector and thus a significant factor in the water sector performance.

The countries' performances differ most in regard to the policy and objectives, the institutional capacity, the accountability and the external environment. Uganda performs at an equal or higher level than Madagascar in all these factors. This is indicative of the factors' importance for the success of domestic water policies, as Uganda succeeded in improving the coverage of domestic water access to a greater degree than Madagascar between 1992 and 2016. Interpreting the policy and objectives factor, the countries' performances differ concerning the standards and the continuity of objectives between actors and time. By setting and publishing more defined goals and following steady objectives over time, Uganda managed to create a more comprehensive view of the objectives in the sector. This is related to the capacity of the sector and the communication skills, which in Uganda allowed for better coordination of goals and objectives. In addition, Madagascar was unable to implement the proposed institutional structures in the sector. Unclear communication and inactive structures caused confusion and

incoherent views of objectives, hampering Madagascar's development. Transparency in the Malagasy water sector was lower than Uganda's. Uganda published sector evaluations, user surveys and other documents more frequently and has thus created a more comprehensive understanding of the goals and progress in domestic water supply. Similar documents and information are not provided by Madagascar to the same extent. A reason for this is the lacking political will in Madagascar, also affected by the external setting and turbulence. An underlying determinant for all the differences between Uganda and Madagascar is the political instability of Madagascar. The economic, social and political setting is thus of great significance for successful water sector performance.

## 6.1 Limitations

The unavailability of data regarding the recent policy plans, targets and sector evaluation in Madagascar is a limitation of the thesis. Despite the justification of long-term change and confirming the outcomes with quantitative data, the analysis would have benefitted from a deeper insight into the recent operation of the Malagasy water supply. The results and the comparison are therefore not completely accurate. Furthermore, the comparison is not fully objective due to the somewhat relative grading of the cases. This can affect the identification of key factors, particularly through the low-satisfactory-high grading criterion application. An additional limitation of the thesis is related to the case study method, which has low external validity. The results cannot be generalized beyond developing countries, and all generalization should be confirmed with careful context-specific information. Therefore, possible future research could focus on replicating the study on other cases to confirm or contradict the results of this study.

## 7 Conclusion

Access to clean and affordable water is a human right, as acknowledged by the UN (2010). Effective water policies play a vital part in fulfilling this right and achieving sustainable development. Climate change and population growth intensify both current and future demand for water services, especially in developing countries. The purpose of the study was, therefore, to evaluate water policies in Uganda and Madagascar in order to identify the main factors that caused their diverging performance. Understanding the key factors in water policy performance is valuable for the development of current and future policies, resulting in increased domestic water supply in developing countries.

The theoretical framework for evaluating water policies was adapted from the frameworks by Van Meter and Van Horn (1975) and OECD (2012). In addition, the main challenges identified with regard to effective water policy implementation in the literature review were incorporated into the framework. The adapted framework is appropriate for the purpose of the thesis because it is specific for water policies in developing countries. The theoretical water policy framework includes five factors that are assessed in the cases of Uganda and Madagascar between 1992 and 2016. The factors that constitute the framework are: i) policy and objectives, ii) financial resources, iii) capacity, iv) accountability and v) external environment. The countries' performances were graded for each factor on a scale of low, satisfactory, and high. Grading the performance allowed for tangible comparison of the cases and identification of key differences. The key factors affecting domestic water supply policies were identified to be policy and objectives, the institutional capacity of the sector, the accountability and the external environment.

The research question of the thesis was: "How does Uganda compare to Madagascar in regard to which factors have been important for achieving effective domestic water supply policies from the 1990s?". The policy and objectives, institutional capacity, accountability and the external environment are found to be key factors for effective water policies. With more comprehensive policies and clear targets, a functioning institutional system and better involvement of all actors in the process, Uganda was able to increase the share of the population using improved water services from 49% to 78% between 1995 and 2016. Moreover, Uganda provided a stable socio-economic and political setting for development. With a lower performance in all the mentioned factors, and particularly a turbulent external environment, Madagascar suffered from stagnating figures in the domestic water supply coverage during the time period.

Uganda's water supply policies are connected to the national development plans and allow for continuous improvements and unified targeting of goals. On the contrary, Madagascar does not provide clear policies for the water sector and has discontinued projects because of the political unrest. The lack of goals in the sector and the disruptions in progress are reflected in the stagnating performance of the country. The policy and objectives, including the coordination

of objectives and the setting of standards, were found to be critical for achieving increased domestic water supply coverage. Strong policies provide a foundation for the water sector but have to be adequately applied and communicated to achieve the desired results. The capacity of the Ugandan water sector exceeded the Malagasy water sector's, particularly regarding the aspects of institutional capacity and communication. Without functioning institutional structures, the Malagasy water sector faced problems of unclear responsibilities, causing inefficiencies. Furthermore, the lack of transparency and the low political will in Madagascar were harmful to the development. Due to central decision-making, the programmes were unable to take into account the users' demands. Finally, the social, political and economic setting in Uganda was more reliable and prosperous for continuous development of the water sector. The external environment is found to have a substantial impact on water policies and can cause stagnating or deteriorating progress in domestic water supply coverage.

The results of the thesis indicate that the Malagasy water policies should focus on creating a comprehensive plan for the water sector, including clear targets and harmonization with the development strategies of the country. The institutional capacity of the water sector needs strengthening, which can be achieved by operationalizing the planned institutional structures, such as SOREA. Furthermore, both Madagascar and Uganda require enhanced inclusion of the users and communities, especially in the decision-making, for creating more suitable development in accordance with the demand. Overall, the empirical research suggests that emphasis should be placed on policy planning and objectives to establish clear underpinning for progress in domestic water supply coverage. Effective domestic water policies require a strong and functioning institutional system and transparency in the implementation of policies. Moreover, progress is significantly affected by the external setting.

The low external validity of the case study method is a limitation of the study. Further research could, therefore, investigate the robustness of the results to understand whether the identified factors are only significant in the comparison of Uganda and Madagascar or whether same factors are the crucial differences for successful performance in other cases. Furthermore, this study only briefly notes that the factors in the framework are interconnected and influence one another. For example, the external environment in Madagascar, including the socio-political crisis, likely affected the performance in other factors. The relationships could be studied further to understand the magnitude of each factor and thereby better identify how each factor both directly and indirectly affect the performance of the sector.

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