# EFFECT OF FUNDING SOURCES ON FINANCIAL SUSTAINABILITY OF WATER SECTOR INSTITUITIONS IN KENYA.

**BY:**

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## DECLARATION

This research project proposal is my original work and has not been submitted for a degree award at the University of Nairobi or any other university.

Signature ……Date …….

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This Research proposal has been submitted for presentation with my approval as University Supervisor.

Signed…….. Date ……

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## ABSTRACT

The rapid expansion of the water sector in recent years has made financing mix or capital structure an issue of growing importance. There is, however, a lack of academic study on the funding sources of Water Sector Institutions in Kenya and its effect on their financial sustainability. This paper addresses this gap. The Research Objective is to investigate the effect of funding sources on financial sustainability of Water Sector Institutions in Kenya.

This study will adopt a descriptive research design. The design is chosen since it is more precise and accurate since it involves description of events in a carefully planned way. It also portrays the characteristics of a population fully (Babbie, 2002). It will be a time series correlation study with Financial Sustainability as the dependent variable while the independent variables are: Equity (Share capital, Government grants, capital reserves and revenue reserves) and Debt (Long and Short term borrowings) Regression analysis will be used to find the relationship between Financial Sustainability and independent variables since the relationship expected is linear.

From the study findings and discussion, the study concludes that funding sources affects the financial sustainability of organizations. On the study objective, the ratio analysis revealed a strong positive relationship between internally generated funds as one funding source and financial sustainability of water sector institutions in Kenya. On the other hand the regression analysis revealed that when all factors are held constant a positive relationship is seen on financial sustainability with an increase in government grants, donor funding, internally generated funds and reserves.

## DEDICATION

I wish to dedicate my research to my wife, Maureen and daughter, Thandiwe Begley Rao for their never ending support and inspiration through the whole process.

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## ABBREVIATIONS AND ACRONYMS

| | |
|---|---|
| AiA | Appropriation in Aid |
| AWSB | Athi Water Service Board |
| AWSC | Annual Water Sector Conference |
| CAACs | Catchments Area Advisory Committees |
| CWSB | Coast Water Service Board DPs Development partners |
| FY | Financial year |
| IDA | International Development Association |
| IFAD | International Fund for Agriculture Development |
| IWRM | Integrated Water Resources Management |
| JICA | Japan International Cooperation Agency |
| KEWI | Kenya Water Institute |
| LVNWSB | Lake Victoria North Water Service Board |
| LVSWSB | Lake Victoria South Water Service Board |
| MWI | Ministry of Water and Irrigation |
| NIB | National Irrigation Board |
| NWCPC | National Water Conservation and Pipeline Corporation |
| O & M | Operations and maintenance |
| RVWSB | Rift Valley Water Service Board |
| SAGA | Semi-Autonomous Government Agencies |
| SIDA | Swedish International Development Agency |
| TWSB | Tana Water Service Board |
| TWSB | Tanathi Water Service Board |
| WAB | Water Appeal Board |

| | |
|---|---|
| WASREB | Water Services Regulatory Board |
| WSRP | Water Sector Reform Programme |
| WB-WSP | World Bank, Water and Sanitation Programme |
| WRM | Water Resources Management |
| WRMA | Water Resources Management Authority |
| WRUA | Water Resources Users Association |
| WSBs | Water Services Boards WSIs Water sector institutions |
| WSIP | Water Sector Investment Programme |
| WSPs | Water Services Providers |
| WSP-AF | Water and Sanitation Programme - Africa |
| WS | Water services |
| WSSP | Water Sector Strategic Plan |
| WSTF | Water Services Trust Fund |

# CHAPTER ONE:

# INTRODUCTION

## 1.1 Background of the Study

Achieving institutional financial sustainability is a goal that all water sector institutions strive for. Lack of Financial sustainability in the sector Institutions has resulted in a hard time covering administrative costs and development activities aimed at accomplishing its mission. The routine has been proposal writing to aide interminable negotiations with donors who may or may not agree with the vision or cost percentages (Leon, 2001).

Financial sustainability is a government's ability to manage its finances so it can meet its spending commitments, both now and in the future. It ensures future generations of taxpayers do not face an unmanageable bill for government services provided to the current generation. Financial sustainability is pegged on financial structuring which eventually leads to availability of capital as a key resource. Capital Innovations is indeed a new capital solution meeting current requirements in this case reliable capital. (South African Govt. Information paper-2012)Economists have argued that innovation is essential for firm survival, economic growth and development (Schumpeter, 1942; Ayyagari, Demirguc-Kunt and Maksimovic, 2006).

Financing of innovation is thus an important managerial and policy challenge. Indeed, a large body of research argues that financial development is a significant driver of economic growth and development (Levine, 1997). Capital is used by a corporation to finance its assets, daily operations, expansion and other activities that require financing beyond what can be provided by its on-going returns.

The types of financing available to corporations are extensive and each form of capital has a different set of conditions and rules associated with it.

Understanding the variety of funding types available is pertinent when weighing the pros and cons of each. Keeping these pros and cons in mind becomes imperative to making responsible choices when seeking financing options for a corporation's continued growth (Modigliani and Miller, 1958).

### 1.1.1 Funding Sources

The oxford dictionary 2013 defines funding as an act of providing resources, usually in form of money (financing), or other values such as effort or time (sweat equity), for a project, a person, a business, or any other private or public institutions. Funds are injected into the market as capital by lenders and taken as loans by borrowers. There are two ways in which the capital can end up at the borrower. The lender can lend the capital to a financial intermediary against interest. These financial intermediaries then reinvest the money against a higher rate. The use of financial intermediaries to finance operations is called indirect finance. Lender can also go the financial markets to directly lend to a borrower. This method is called direct finance (Mishkin, 2012).

It is useful to analyze different sources of funding into two broad classifications: Restricted or unrestricted– an indicator of flexibility and Short- or longer-term– an indicator of continuity Unrestricted funds are exactly what they sound like – funds that come to the NGO without restriction on how they are used, providing of course, they are used to fulfill the NGO's objectives. In general, grants from donor agencies are restricted funds since they usually come with terms and conditions about what the funds may or

may not be used for. So it is the income that an NGO generates through its own efforts that tends to be in the unrestricted category – such as membership fees, fundraising events, general donations and bank interest. This 'free money' brings greater autonomy, flexibility and security for an NGO and is therefore central to a financing strategy (Kaplan & Norton 1992; ibid. 1997; ibid. 2001).

The funding mix addresses the following funding avenues. General fundraising: Short-term and relatively unrestricted income, such as one-off fundraising events and public donations. Useful for building up reserves or for gap funding (i.e. where a project funding agreement fails to cover 100% of costs) but not for long-term commitments. Project funding: Short-term and relatively restricted income, generally from institutional donor agencies. Being project-specific, these funds generally last for 1-3 years and are difficult to extend further leading to a loss of project continuity. This is the most common form of NGO financing (Norton, 1992).

Programme funding: Longer term with some restrictions, these are funds provided by funding partners where a strong working relationship has been established and where grants are based on program themes. Core funding: This is income which can be relied upon as regular and flexible, so is most likely to be used for the NGO's core operations. This type of financing helps to meet Norton's definition of financial sustainability: "The organisation and its core work will not collapse if external funding is withdrawn". Some of the metrics used to finance innovatively include. : Real Revenue Growth, Sustainable Revenue Growth, Pricing Policy and Pricing Index, Operating Expense Control, Comparing EBITDA to Actual Cash Flow, Debt Free Cash Flow, Excess Cash, Return on

Assets, Neutral, Negative, and Positive Working Capital Cash, Use of Debt Financing ,Net Trade Cycle, Cost of Capital.(Duffie; Rohit , 1995).

The funding mix calculates where an organization is, you will need the latest set of annual financial statements– i.e. the financial report including a balance sheet and an income and expenditure (sometimes called profit & loss) statement. To calculate the 'donor dependency' ratio: total donor income/ total income x 100 [result will be expressed as %]. To calculate the 'survival ratio' ratio: general reserves*/ total income x 52 or x 365 [result will be expressed in weeks or days].general reserves are the unrestricted reserve funds saved up since the organisation began. They will be listed on the balance sheet and may also be referred to as general purposes funds or general funds. If you cannot find this figure, use the figure for 'net current assets' instead. (Kaplan & Norton 1992; ibid. 1997; ibid. 2001).

### 1.1.2 Financial Sustainability

Financial sustainability refers to the ability to manage funding so it can meet its spending commitments both now and in the future (LGA, 2012). Regardless of an organization's for-profit or nonprofit status, the challenges of establishing financial capacity and financial sustainability are central to organizational function (Bowman, 2011). However, maintaining the ability to be financially agile over the long term may be especially important for nonprofits, given that many of them serve high-need communities that require consistent and continually available services. With this in mind, the goal of financial sustainability for nonprofits is to maintain or expand services within the

organization while developing resilience to occasional economic shocks in the short term (e.g., short-term loss of program funds, monthly variability in donations).

According to Bowman (2011), an organization sustainable in the long term but unsustainable in the short term will be chronically short of cash. Conversely, an organization sustainable in the short term but not in the long term may have adequate cash but inflation will cause the value of its assets to erode over time. This, in turn, will cause the quantity and quality of services to diminish unless capital campaigns periodically bring infusions of new assets. (p. 94) to understand differences in factors related to financial sustainability between for-profit and nonprofit organizations, it is important to identify and understand the long-term goals of the organization.

Four pillars of Financial Sustainability Include: Financial and Strategic Planning, Income Diversification, Sound Administration and Finance, Own Income Generation First Importance of being financially stable is an increased focus on your real work. You can do more of what you set out to do, because your focus can be on the mission, not just on day-to-day survival. Second becoming more competitive in your field. For example, more money allows you to hire more and better staff, which, again, allows you to do more to obtain your mission and third easier transitions. A plan can assist your organization in successful transition when current funding is depleted or dries up. (LGA I.P– November 2006)

Financial sustainability is measured through an analysis of various indicators. They include: Operating Surplus (the difference between day to day income and expenses for the period), Operating Surplus Ratio (by what percentage does the major controllable

income source vary from day to day expenses), Net Financial Liabilities( what is owed to others less (net of) money you already have or is owed to you), Net Financial Liabilities Ratio(how significant is the net amount owed compared with income), Interest Cover Ratio(how much income is used in paying interest on loans), Asset Sustainability Ratio(are assets being replaced at the rate they are wearing out), Asset Consumption Ratio(the average proportion of 'as new condition' left in assets). LGA web page: http://www.lga.sa.gov.au/goto/fsp (LGA 'Local Government Financial Indicators' Information Paper– November 2006)

### 1.1.3 Relationship between Funding sources and Financial Sustainability

Financial sustainability means financial continuity and security. (A. Fowler).The organisation and its core work will not collapse if external funding is withdrawn. (M. Norton). In practice, organisations which fulfil these definitions first have a diversified funding base which emphasizes on the importance to have a financing strategy which produces several different sources of income. It does not make good sense to put "all your eggs in one basket". To rely on just one or two donors for your income makes you vulnerable to external threats. Diversification means securing funds from a wide base that includes sources such as the local business community, national and local government and the general public – and not just from external, institutional donors such as USAID.

Second availability of unrestricted funds are far much better than restricted funds of which an organization is legally obliged to use them for the reason that the donor gave them to you. In contrast, unrestricted funds can be used for anything at all that helps you to achieve your mission. The more unrestricted funds you have, the more freedom of action you have. You can choose and change the projects that you want to run and you

can cover costs that donors are reluctant to fund, like core costs. We have to look beyond institutional donors for sources of unrestricted funds, for example: membership fees, advertising income, fee income, general appeals and bank interest. Having a regular source of unrestricted income is essential for the next feature of a financial sustainable NGO.

Third availability of financial reserves which are resources that an organisation builds up during its lifetime (from surpluses of unrestricted income) and puts aside to meet unexpected events in the future. These funds are sometimes kept in a special 'reserves' bank account and are shown separately on the annual financial statements. Building up reserves has a number of obvious advantages for NGOs. It reduces their dependence on donors, helps during cash flow shortages and helps to withstand financial shocks and unplanned expenditure.

Finally Strong stakeholder relationships dictate the position an organization will be in. True 'partnerships' occur when back-up and financial support is provided in the good times and the bad times. The key to financial sustainability is to develop your relationships with an eye to the future as well as meeting today's needs. This means building the confidence of donors over time. For instance, it may not be appropriate to press them for funds today, if you believe that you might win more funds from them in the future. It is a mistake to take funds for projects that you cannot deliver, just because the money is available. This will harm your relationship with the donor and reduce the chance of winning funds that you really need next year or the year afterwards.

Different theories of capital structure suggest may affect the firm's debt-equity choice. These attributes are denoted asset structure, non-debt tax shields, growth, uniqueness, industry classification, size, earnings volatility, and profitability. The attributes of profitability best describes the relationship of capital innovation on financial sustainability. Myers (November1983), cites evidence from Donaldson ( 1961) and Brealey and Myers that suggests that firms prefer raising capital, first from retained earnings, second from debt, and third from issuing new equity.

He suggests that this behavior may be due to the costs of issuing new equity. These can be the costs discussed in Myers and Majluf that arise because of asymmetric information, or they can be transaction costs. In either case, the past profitability of a firm, and hence the amount of earnings available to be retained, should be an important determinant of its current capital structure. We use the ratios of operating income over sales (OI/S) and operating income over total assets (OIITA) as indicators of profitability.

### 1.1.4 Water Sector Institutions

The Water Act of 2002 gave legal force to the National Water Policy objectives. The key provisions of the Act allowed for the necessary reforms for management of water resources, strengthening the institutional framework of the water sector while eliminating the role of government in direct service provision and providing mechanisms for financing water resources and services. The Ministry of Water and Irrigation (MWI) was vested with the responsibility for overall sector oversight including policy formulation, coordination and resource mobilization. (Ministry of Water, 2010, Summary Description Booklet of Water Sector Institutions in Nairobi, Kenya and their Roles.)

The established water sector institutions include: Water Services Regulatory Board (WASREB) to set standards and regulate the sub-sector; Water Appeal Board (WAB) to adjudicate on disputes; Seven Water Services Boards (WSBs) to be responsible for the efficient and economical provision of water services; Water Services Trust Fund (WSTF) to finance pro-poor investments ; Water Services Providers (WSPs) to be agents in the provision of water and sewerage services; Water Resources Management Authority (WRMA) to manage and protect Kenya's resources.; Catchment Area Advisory Committees (CAAC) support the WRMAs at the regional Level.; Water Resource Users Associations (WRUA) established as a medium for cooperative management of water resources and conflict resolution at sub-catchment level. (Ministry of Water, 2010, Summary Description Booklet of Water Sector Institutions in Nairobi, Kenya and their Roles.)

The overall budgetary allocations to the water sector have increased by more than 200% in the last five years (2006/07 to 2010/11), with the development allocation increasing by 252%, while the recurrent budget has maintained a lower growth rate of 93%.This means more donor funding (Debt) is anticipated throughout the financial years compared to local funding i.e. internally generated funds and government support from taxpayers money. Currently Recurrent and capital expenditures are financed by Equity and Debt that include: share capital (paid up), Governments Grants/Irredeemable Loans, Capital Reserves, Revenue Reserves (Profit & Loss Account), Shareholders' Funds, Long term borrowing, Non-Current Creditor, Accounts payable, Short-term borrowings, Statutory

obligations(Ministry of water and irrigation Kenya , annual water sector review ,2009-2010 -2011-2012)

What is actually anticipated to be received and budgeted for during the financial year is financed by a small fraction. A funding gap is automatically seen. This means that implementation of work plans is a task due to lack of funding. About 57.3% of the funds earmarked for the period under review by donors was received ─ a reduction from 89% absorption in the previous financial year. However, KSh 4.0 billion earmarked for the period by one of the donors was released after the close of the financial year. Among the contributing factors to the limited absorption rate are the slow procurement process, slow and delayed disbursements from donors and GoK, and inadequate information on project implementation.

Current challenges facing the water sector institutions include: Water sector Institutions are not financially stable to cover salaries, Slow disbursement of funds by Development Partners as Budgeted for, Inadequate development of investment plans by institutions, as indicated by underestimation of revenues and expenditures and Poor reporting on DP-funded projects by the implementing agencies, especially on actual expenditures. (Ministry of water and irrigation Kenya , annual water sector review ,2009-2010 -2011-2012)

**1.2 Statement of the Problem.**

There are two main ways to address the financing gap in the water sector where it appears: in the long-run, structural reforms are needed to improve the sector's revenue-generation potential so as to fill the financing gap. In the short to medium term, access to repayable finance (such as loans, bonds and equity) will be critical so as to bridge the

financing gap. Given a number of structural issues in the sector, innovation is required so as to increase the attractiveness of the sector to providers of repayable finance, particularly those bringing private sector funds.

There is a considerable amount of literature with respect to the optimal capital structure of corporate firms (See for example, Faulkender and Petersen (2006); Harris and Raviv (1991); Titman and Wessels (1988); Bradley, Jarrell, and Kim (1984)). Depending on the relevant considerations (tax advantages, bankruptcy costs, agency costs, transaction costs, asymmetric information, or corporate control), one can point to an optimal capital structure in terms of a corporate firm's value. Yet, the application of the Modigliani-Miller (MM) theorem and other corporate finance theorems to lending institutions is less straight-forward. The basic MM principles are applicable to lending institutions, but only after accounting for the fundamental differences in how lenders and corporations operate (Cohen, 2003). The relationship between the levered and unlevered betas, the manner in which revenues are generated, and the natures of regulation for a lending institution are markedly different from that of a corporate firm.

As Froot and Stein (1998) and Cebenoyan and Strahan (2004) have shown, risk management objectives also influence the capital structure of lending institutions. Consequently, the theoretical notion of an optimal capital structure for a lending institution is not very well-defined. The issue of grant money adds another layer of complication to the capital structure question for lending institutions. Does grant money create moral hazard or incentive issues with respect to banking operations? Thus, within the context of the lending institution capital structure discussion, one is required to consider issues similar to the grant versus concessional loan debate in the foreign aid

literature (For example, see Gupta et al. (2003), Schmidt (1964)). This paper attempts to shed light on these issues through a study of Water Sector Institutions in Kenya.

Further, no study has been done in Kenya to determine the effect of funding sources in this case the proportion of Government funding, internally generated funds, long-term borrowing and revenue reserves on the financial sustainability of water sector Institutions. It is in the line of the above argument that this study intends to identify and understand ways of being innovative in financing decisions and the effect it has on financial sustainability.

The rapid expansion of the water sector in recent years has made financing mix or capital structure an issue of growing importance. There is, however, a lack of academic study on the funding sources of Water Sector Institutions in Kenya and its effect on their financial sustainability. This paper addresses this gap.

### 1.3 Research Objective

To investigate the effect of funding sources on financial sustainability of Water Sector Institutions in Kenya.

### 1.4 Value of the Study

No study has shown the effect of capital innovation on financial sustainability in the context of water sector institutions specifically in Kenya. This study wishes to fill this gap by analysing the effect of capital innovation on financial sustainability of water sector institutions in Kenya. In theory linking of the pillars, requirements and indicators of financial sustainability to capital innovation. This is because the whole aim of the

study is to attempt to show the relationship between capital innovations and the effect it has on financial sustainability of water sector institutions in Kenya. Pillars of financial sustainability include: strategic and financial planning, income generation, sound administration and finance and own income generation. Requirements of financial stability include: investment of resources of monetary value, long term commitment and business planning. Indicators of financial stability include: strategic vision and leadership, income generating capability and financial administration capability. (Leon, 2001)

In practice achieving institutional financial sustainability is a goal that all water sector institutions strive for. Financial sustainability will enable water sector institutions to cover their administrative costs and to prioritize their activities so as to accomplish their missions, without undergoing interminable negotiations with various financing decisions. The effect of funding sources (Best mix of funding) with reference to capital theories on financial sustainability will be clear to Water sector institutions. This study will indeed add value as it will be a reference point when it comes to financing decisions.

# CHAPTER TWO:

# LITERATURE REVIEW

## 2.1 Introduction

This chapter discusses the Trade-off Theory, the Pecking Order theory and Market Timing Theory. The discussion of these theories provides the theoretical literature review for this research. The second part looks at the empirical literature of Local and International studies highlighting the objectives and findings.

## 2.2 Theoretical Literature Review

There are many theories that attempt to explain the determinants of funding sources. These theories are significant steps towards the development of a systematic framework for funding mix geared towards financial sustainability.

### 2.2.1 Trade off Theory

The original version of the trade-off theory grew out of the debate over the Modigliani-Miller theorem that stated "under a certain market price process, in the absence of taxes, bankruptcy costs, agency costs, and asymmetric information, and in an efficient market, the value of a firm is unaffected by how that firm is financed" . When corporate income tax was added to the original irrelevance, this created a benefit for debt in that it served to shield earnings from taxes. Since the firm's objective function is linear, and there is no offsetting cost of debt, this implied 100% debt financing. Several aspects of Myers' definition of the trade-off merit discussion. First, the target is not directly observable. It may be imputed from evidence, but that depends on adding a structure. Different papers add that structure in different ways.

Second, the tax code is much more complex than that assumed by the theory. Depending on which features of the tax code are included, different conclusions regarding the target can be reached. Graham (2003) provides a useful review of the literature on the tax effects.

Third, bankruptcy costs must be deadweight costs rather than transfers from one claimant to another. The nature of these costs is important too. Haugen and Senbet (1978) provide a useful discussion of bankruptcy costs.

Fourth, transaction costs must take a specific form for the analysis to work. For the adjustment to be gradual rather than abrupt, the marginal cost of adjusting must *increase* when the adjustment is larger. Leary and Roberts (2005) describe the implications of alternative adjustment cost assumptions.

### 2.2.2 The Pecking Order Theory

The pecking order theory does not take an optimal capital structure as a starting point, but instead asserts the empirical fact that firms show a distinct preference for using internal finance (as retained earnings or excess liquid assets) over external finance. If internal funds are not enough to finance investment opportunities, firms may or may not acquire external financing, and if they do, they will choose among the different external finance sources in such a way as to minimize additional costs of asymmetric information. The latter costs basically reflect the “lemon premium” (Akerl, 1970) that outside investors ask for the risk of failure for the average firm in the market.

The resulting pecking order of financing is as follows: internally generated funds first, followed by respectively low-risk debt financing and share financing. In Myers and Majluf model (1984), outside investors rationally discount the firm's stock price when managers issue equity instead of riskless debt. To avoid this discount, managers avoid equity whenever possible. The Myers and Majluf model predicts that managers will follow a pecking order, using up internal funds first, then using up risky debt, and finally resorting to equity. In the absence of investment opportunities, firms retain profits and build up financial slack to avoid having to raise external finance in the future.

The pecking order theory regards the market-to-book ratio as a measure of investment opportunities. With this interpretation in mind, both Myers (1984) and Fama and French (2000) note that a contemporaneous relationship between the market-to-book ratio and capital structure is difficult to reconcile with the static pecking order model. Iteration of the static version also suggests that periods of high investment opportunities will tend to push leverage higher toward a debt capacity.

To the extent that high past market-to-book actually coincides with high past investment, however, results suggest that such periods tend to push leverage lower. Empirical evidence supports both the pecking order and the trade-off theory. Empirical tests to see whether the pecking order or the trade-off theory is a better predictor of observed capital structures find support for both theories of capital structure (Shyam -Sunder and Myers, 1999; Fama and French, 2002).

### 2.2.3 Market Timing Theory

The market timing theory of capital structure argues that firms time their equity issues in the sense that they issue new stock when the stock price is perceived to be overvalued, and buy back own shares when there is undervaluation. Consequently, fluctuations in stock prices affect firm's capital structures. There are two versions of equity market timing that lead to similar capital structure dynamics.

The first assumes economic agents to be rational. Companies are assumed to issue equity directly after a positive information release which reduces the asymmetry problem between the firm's management and stockholders. The decrease in information asymmetry coincides with an increase in the stock price. In response, firms create their own timing opportunities.

The second theory assumes the economic agents to be irrational (Baker and Wurgler, 2002). Due to irrational behavior there is a time-varying mispricing of the stock of the company. Managers issue equity when they believe its cost is irrationally low and repurchase equity when they believe its cost is irrationally high. It is important to know that the second version of market timing does not require that the market actually be inefficient. It does not ask managers to successfully predict stock returns. The assumption is simply that managers believe that they can time the market. In a study by Graham and Harvey (2001), managers admitted trying to time the equity market, and most of those that have considered issuing common stock report that "the amount by which our stock is undervalued or over- valued" was an important consideration.

This study supports the assumption in the market timing theory mentioned above which is that managers believe they can time the market, but does not immediately distinguish between the mispricing and the dynamic asymmetric information version of market timing. Baker and Wurgler (2002) provide evidence that equity market timing has a persistent effect on the capital structure of the firm. They define a market timing measure, which is a weighted average of external capital needs over the past few years, where the weights used are market to book values of the firm. They find that leverage changes are strongly and positively related to their market timing measure, so they conclude that the capital structure of a firm is the cumulative outcome of past attempts to time the equity market.

### 2.3 Empirical Literature Review

Githinji ( 2009 ) concluded that majority of microfinance institutions in Kenya are not financially sustainable if measured by the return on assets or return on equity. It is also concluded that the most significant factor that influenced sustainability of microfinance institutions in Kenya is the size of savings. The study further concludes that the major challenges facing microfinance institutions in Kenya are funding, repayment default and government regulations. The study recommends that the microfinance institutions in Kenya need to work on being financially sustainable. The study also recommends that since the levels of sustainability are positively influenced by the average size of savings, the microfinance institutions need to explore ways of increasing ember savings. This study is relevant since it looks at a variable to financial sustainability which is capital innovation.

Munene (2009) concluded that real estate companies engage in either or both of the following activities: assets growth which is long term and/or profit maximization that is short term. The life of real estate companies follows a life cycle similar to the product life cycle and their capital structure changes at each stage of the life cycle dependent on the time orientation of firm. As real estate "firms approach the mature phase in the life cycle, they tend to change their time orientation to incorporate both short-and long-term objectives. His overall study identified determinants of capital structure .My study tends to link the indicators of financial sustainability with capital innovation.

Mwangi, Omollo and Amenya (2012) explains that conflicting assessments about how firms choose their capital structures, with the trade off, pecking order and market timing hypothesis all receiving some empirical support. The study's objectives were to determine whether firms in Kenya have an optimal target leverage, whether an adjustment towards this target takes place and finally to ascertain the speed of adjustment towards this target leverage. This study tends to looks at the degrees of leverage with reference to debt and equity proportions opted by water sector institution's in Kenya to achieve financial sustainability.

Tiwari, Mohnen, Palm and Sybrand Schim van der Loeff (2011) Concluded that First, financial constraints adversely affect a firm's R&D intensity as measured by ratio of R&D expenditure to capital asset. Second, firms that are highly leveraged are more likely to be financially constrained, and that highly leveraged firms are less likely to be

innovators. Third, the propensity to innovate with respect to leverage is lower when a firm is not financially constrained as compared to a firm that is. Fourth, the propensity to innovate with respect to leverage, conditional on no financial constraint is almost constant, while the propensity to innovate with respect to leverage conditional on being financially constrained varies over the distribution of firm characteristic such as age, size, and leverage. Fifth, the decision to innovate, the financial constraints faced, and the choice of capital structure are endogenously determined. Sixth, the R&D intensity of firms with different characteristics, conditional on being financially constrained and conditional on not being unconstrained are different. Seventh, the sensitivity of R&D investment to cash flows is higher for financially constrained firms.

Leiponen, jiahong and zhang (2012) emphasized the importance of internal finance for innovation investment and, in particular, that innovation is rarely financed with debt. However, relatively little is known about the effects of other forms of external finance on innovation investment. This paper investigates the relationship between firm's capital structure and innovation activities in a large sample of firms in East Asian, South Asian, Central Asian and Eastern European emerging economies. We argue that access to external financial resources plays a critical role for financially constrained firms. Our dataset enables more detailed analyses of different sources of external finance than previous studies. To resolve the causality problem, we utilize instrumental-variable methods for identification. Our empirical analyses demonstrate that a broad set of primarily privately-held firms benefit from external finance for innovation activities. Not only equity finance but also funding from family and friends are significant enablers of

innovation activity, whereas we do not find a significant relationship between debt finance and innovation. We also find that the effects of external finance on innovation depend on the institutional environment in which firms operate. In particular, the quality of political institutions appears to moderate the asymmetric information problem between firms and potential investors. Policy implications point to the importance of efficient financial markets and institutions that potentially reduce information asymmetries between investors and innovators.

Hovakimian, Hovakimian and Tehranian (2004) examined whether market and operating performance affect corporate financing behavior because they are related to target leverage. Our focus on firms that issue both debt and equity enhances our ability to draw inferences. Consistent with dynamic trade-off theories, dual issuers offset the deviation from the target resulting from accumulation of earnings and losses. Our results also imply that high market-to-book firms have low target debt ratios. On the other hand, consistent with market timing, high stock returns increase the probability of equity issuance but have no effect on target leverage.

Jalilvand and Harris (1984) examined the issuance of long term debt, issuance of short term debt, maintenance of corporate liquidity, issuance of new equity, and payment of dividends. Given costs and imperfections inherent in markets, a firm's financial behavior is characterized as partial adjustment to long run financial targets. Individual firm data are used so that speeds of adjustment are allowed to vary by company and over time. The

results suggest that financial decisions are interdependent and that firm size, interest rate conditions, and stock price levels affect speeds of adjustment.

Marsh (1982) accounts for the fact that firms may face impediments to movements toward their target ratio, and that the target ratio may change over time as the firm's profitability and stock price change. A separate analysis of the size of the issue and repurchase transactions suggests that the deviation between the actual and the target ratios plays a more important role in the repurchase decision than in the issuance decision.

Myers (1977) integrated an earnings-based capital structure model into a simple real options framework to analyze the effects of managerial optimism and overconfidence on the interaction between financing and investment decisions. Several empirical implications follow from solving the model. Notably, my analysis reveals that managerial traits can ameliorate bondholder–shareholder conflicts, such as the debt overhang problem. While debt delays investment inefficiently, mildly biased managers can overcome this problem, even though they tend to issue more debt. Similar properties and results are discussed for other real options, such as the asset stripping or risk-shifting problems

Titman and Tsyplakov (2007) presented a continuous time model of a firm that can dynamically adjust both its capital structure and its investment choices. In the model we endogenize the investment choice as well as firm value, which are both determined by an

exogenous price process that describes the firm's product market. Within the context of this model we explore cross-sectional as well as time-series variation in debt ratios. We pay particular attention to interactions between financial distress costs and debt holder/equity holder agency problems and examine how the ability to dynamically adjust the debt ratio affects the deviation of actual debt ratios from their targets. Regressions estimated on simulated data generated by our model are roughly consistent with actual regressions estimated in the empirical literature.

Bogan (2009) examined the existing sources of funding for MFIs by geographic region, and explores how changes in capital structure could improve the efficiency and financial sustainability of MFIs. Using panel data, I establish a link between capital structure and key measures of MFI success. Notably, I find causal evidence supporting the assertion that an increased use of grants by large MFIs decreases operational self-sufficiency. Capital Structure and Sustainability: An Empirical Study of Microfinance Institutions: The capital structure of lending institutions has become an increasingly prominent issue in the world of finance. Contemporaneously, Microfinance Institutions (MFIs) have risen to the forefront as invaluable lending institutions in the development process. Since capital constraints have hindered the expansion of microfinance programs and microfinance organizations have had various degrees of sustainability, the question of how best to finance these organizations are a key issue.

## 2.4 Chapter Summary

The empirical studies reviewed have shown that operating performance is strongly affected by the capital structure: A balance of either debt or equity (funding mix). However, the relationships are not universal, but context dependent. None of the studies has shown the rate at which capital innovation affects financial sustainability in Kenya. This study wishes to fill this gap by analysing the effect of funding sources on financial sustainability of water sector institutions in Kenya.

# CHAPTER THREE: RESEARCH METHODOLOGY

## 3.1 Introduction

This chapter presents the methodology that will be used to conduct the study. It specifies the research design, what the target population will be, how data will be collected and the method of data analysis.

## 3.2 Research Design

This study will adopt a descriptive research design. The design is chosen since it is more precise and accurate since it involves description of events in a carefully planned way. It also portrays the characteristics of a population fully (Babbie, 2002). Further, Mugenda and Mugenda (2003) opined that the descriptive research collects data in order to answer questions concerning the current status of the subject under study.

It will be a time series correlation study with Financial Sustainability as the dependent variable while the independent variables are: Equity (Share capital, Government grants, capital reserves and revenue reserves) and Debt (Long and Short term borrowings) Regression analysis will be used to find the relationship between Financial Sustainability and independent variables since the relationship expected is linear.

## 3.3 Target Population

According to Ngechu (2004), a population is a well-defined or set of people, services, elements, and events, group of things or households that are being investigated. Further, Mugenda and Mugenda (2003) explain that the target population should have some observable characteristics, to which the researcher intends to generalize the results of the

study. The target population will compose of water sector institutions in Kenya that include: WSTF, WAB, WASREB, WRMA, NWCPC, KEWI, NIB, WSB's and WSP's.

### 3.4 Sampling Procedure

Ngechu (2004) underscores the importance of selecting a representative sample through making a sampling frame. From the population frame the required number of subjects, respondents, elements or firms was selected in order to make a sample. Due to the population size of Water Sector Institutions, the research will take a sampling approach. A sample is where data is collected from selected members of the population (Hair, Celsi, Money, Samouel, & Page, 2011).

### 3.5 Data collection

Secondary data will involve the collection and analysis of published material and information from other sources such as the Ministry of Water And Irrigation and Ministry of Finance (Treasury). The data required for this study include statement of comprehensive income, recurrent annual budget, capital budget being feasibility study data, statement of financial position, cash flow statement and investment of surplus funds. The sample data for this study will be for the period spanning 2004 to 2013. Only the annual values for the period will be used for the analysis. The data will be obtained from the Ministry of water and Finance either in soft or hard copy.

### 3.6 Data Analysis

Data analysis will be in two steps. First the financial sustainability of an organisation within the population will be measured through the ratios indicated below.

Operating Surplus Ratio (%) =Net Operating Surplus/Operating Revenue (Demonstrates the extent to which operating revenues cover operational expenses only or are available for capital purposes.

Net Financial Assets/Liability Ratio (%) =Total Liabilities less Current Assets/Operating Revenue (Demonstrates the extent to which the net financial liabilities can be services by its operating revenues.

Interest Coverage Ratio (%) =Net Interest Expense/Operating Revenue (Demonstrates the extent to which operating revenues are being used to meet the financial charges associated with debt servicing obligations.

Working Capital Ratio (Target between 1 and 4) =Current Assets/Current Liabilities (Demonstrates the extent to which liquid assets are available to meet short term debt obligations.)

Ratio analysis model will be used to identify how donor dependent an organisation currently is and how long it could survive if all external aid were suddenly withdrawn. These indicators will give a picture of the financial vulnerability of an organisation. Through these ratios the funding mix and survival days of sampled water sector institutions will be analysed to know its effect on their financial sustainability.

'Donor Dependency' ratio:Total Donor Income/Total Income * 100 (result will be expressed as %)

'Survival Ratio' ratio:General Reserves/Total Income * 365 (result will be expressed in days)

Second a regression analysis model in which the dependent variable will be the Financial Sustainability of Water Sector Institutions in Kenya will be used. The independent variables will be Government grants/Irredeemable loans, Revenue reserves, Long-term and Short-Term borrowings. The regression model will be used to determine how each of the dependent variables relates to the Financial Sustainability. The regression analysis taking the form below:

$$Y = \alpha + \beta_1(X_1) + \beta_2(X_2) + \beta_3(X_3) + \beta_4(X_4) + \epsilon$$

Where,

| | | |
|---|---|---|
| $Y$ | = | Financial sustainability measured by the Operating Surplus Ratio. |
| $X_1$ | = | Fraction of Government grants to the total funding. |
| $X_2$ | = | Fraction of Internally generated funds to the total funding. |
| $X_3$ | = | Fraction of long-Term borrowing to total funding. |
| $X_4$ | = | Fraction of revenue reserves to the total funding. |
| $\alpha$ | = | The constant of regression |
| $\beta_i$ | = | The sensitivity of Financial Sustainability to the independent variable $i$ |
| $\epsilon$ | = | The error term. |

The $t - tests$ at 95 % confidence level was used to determine the statistical significance of the constant term, $\alpha$, and the coefficient terms, $\beta_i$. The $F - tests$ will be used to determine whether the regressions is of statistical importance at 95 % confidence level. The coefficient of determination, $R^2$, and the Adjusted $R^2$ will be used to determine how much variation in Financial Sustainability is explained by variation in the independent variables. The analysis will be done using SPSS version 21.0. The results obtained from the models will be presented in tables to aid in the analysis and ease with which the inferential statistics will be drawn.

# CHAPTER FOUR

# DATA ANALYSIS, RESULTS AND DISCUSSIONS

## 4.1 Introduction

This chapter focuses on the presentation of data and interpretation. The first part presents the analysis of the data ending with the ratio analysis results. The second part of this section deals with the summary and the interpretation of the findings.

## 4.2 Data Presentation

### 4.2.1 Water Sector Financial Out-Turn

Since the commencement of reforms, the growth of the water sector budget has been encouraging (Table. 4.1) with the development budget recording the highest upward progression. This substantial increase in the sector's budget and particularly the development vote confirms the confidence that Government and DPs have in the water sector reform agenda, and the commitment to increase investments in the sector to improve water availability, increase coverage of water and sanitation services, as well as to increase reclaimed and irrigable land. The overall budgetary allocations to the water sector have increased by more than 200% in the last five years (2006/07 to 2010/11), with the development allocation increasing by 252%, while the recurrent budget has maintained a lower growth rate of 93%.

**Table 4.1: Seven-year progress in approved sector budget**

| Fiscal Year | Recurrent vote | Development vote | Total | %Recurrent expenditure on total. | % Development expenditure on total. |
|---|---|---|---|---|---|
| 2004/05 | 100 | 100 | 200 | 50.00% | 50.00% |
| 2005/06 | 97 | 202 | 299 | 32.44% | 67.56% |
| 2006/07 | 129 | 109 | 238 | 54.20% | 45.80% |
| 2007/08 | 179 | 155 | 334 | 53.59% | 46.41% |
| 2008/09 | 201 | 213 | 414 | 48.55% | 51.45% |
| 2009/10 | 195 | 273 | 468 | 41.67% | 58.33% |
| 2010/11 | 193 | 352 | 545 | 35.41% | 64.59% |

(Source: Prepared by Researcher with Data from Ministry of Water)

Between 2009/10 and 2010/11, the approved total budgetary allocation for the sector increased by 39%. In the same period the development allocation increased by 41% and comprised 85% of the total approved sector budget, while the recurrent allocation increased by 28.5% ─ an indication by the MWI to increasingly implement development activities while controlling spending on recurrent provisions. In overall, budget increment to the water sector has grown by more than three times ─ using 2006/07 as the base year to measure growth. During the same period, the recurrent budget has almost doubled, while the development budget has more than tripled.

The actual sector expenditure over the last five years since 2006/07 has increased by 322%, which is an indication of increased investment. In the period under review, 69% of the total receipts to the sector were channeled directly to the WSIs. It should be noted that the other 31% of the funding goes to pay for staff salaries (including those in WSIs), irrigation and land reclamation programs, emergency programs and payment of utilities

for programs managed by the Ministry. Government contribution to the WSIs was 57% of the total GoK water sector budget, while the donor contribution was equivalent to 82% of the total donor budget for the sector. Of the actual receipts to the WSIs, 12% came from internally-generated funds. The total actual expenditure by the WSIs in financial year 2010/11 amounted to KSh 20.8 billion; this was 63% of the approved budget to the WSIs.

**Table 4.2: Financing of state corporations in 2010/11 (actual receipts in KSh millions including contributions from donors)**

| Water Sector Institution | WAB | WASREB | WRMA | WSTF | AWSB | CWSB | LVNWSB |
|---|---|---|---|---|---|---|---|
| Internally generated funds (A-in-A) | 0.2 | 101 | 299 | 4.5 | 824 | 476 | 20 |
| GOK | 15 | 2 | 60 | 220 | 210 | 126 | 271 |
| Donors | - | - | - | 528 | 3,027 | 1,306 | 2,925 |
| Total amount | 15 | 103 | 359 | 753 | 4,061 | 1,908 | 3,216 |
| % of A-in-A to total amount | 1.3 | 98 | 83 | 0.6 | 20 | 25 | 0.6 |
| % of GOK to total amount | 99 | 2 | 17 | 29 | 5 | 7 | 8 |
| % of DPs to total amount | - | - | - | 70 | 75 | 68 | 91 |

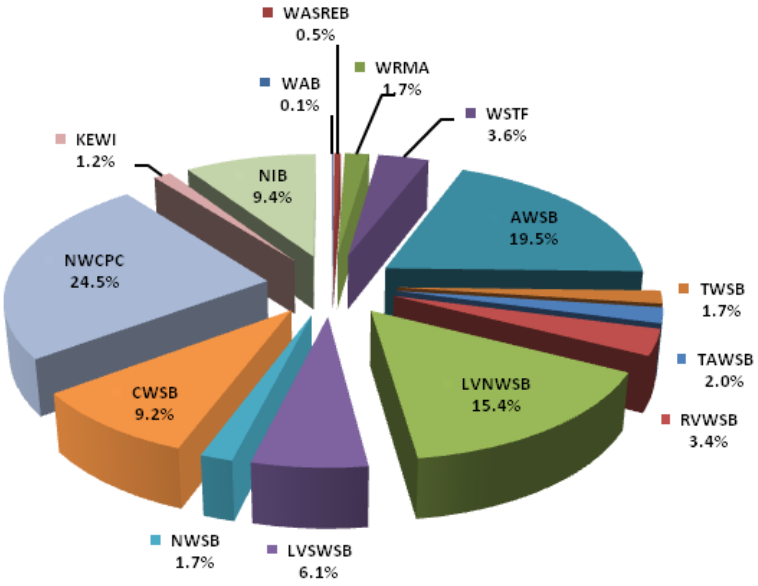
| Water Sector Institution | NWSB | RVWSB | TAWSB | TWSB | NWCPC | KEWI | NIB |
|---|---|---|---|---|---|---|---|
| Internally generated funds (A-in-A) | 14 | 131 | 23 | 88 | 46 | 74 | 338 |
| GOK | 100 | 286 | 395 | 80 | 5,067 | 186 | 1,606 |
| Donors | 244 | 281 | - | 183 | - | - | 6 |
| Total amount | 358 | 698 | 418 | 351 | 5,113 | 260 | 1,950 |
| % of A-in-A to total amount | 4 | 19 | 5 | 25 | 0.9 | 28 | 17 |
| % of GOK to total amount | 28 | 41 | 95 | 23 | 99 | 72 | 82 |
| % of DPs to total amount | 68 | 40 | - | 52 | - | - | 0.3 |

(Source: Prepared by Researcher with Data from Ministry of Water)

These fund allocations do not include the payment of staff seconded by the MWI to the WSIs. The WSIs clearly dependent on MWI funding are NWCPC and WAB. Incidentally, these WSIs attract hardly any funding from DPs, possibly due to viability concerns. The actual funding levels and proportions to WSIs by donors, GoK/MWI and internally-generated revenues (A-in-A) are shown in the graphic.

NWCPC received 25% of the total actual allocations to the WSIs which was the highest compared to the actual allocations to the rest of the WSIs, followed by AWSB at 20%, LVNWSB at 15%, NIB at 9% and CWSB at 9%. Three WSIs (NWCPC, AWSB and LVN WSB) accounted for 59.4% of total funding to WSIs. WAB and WASREB received the lowest funding since their mandates are not on infrastructure development but dispute resolution and regulation respectively. The pie chart below depicts the overall funding proportions (%) to WSIs.

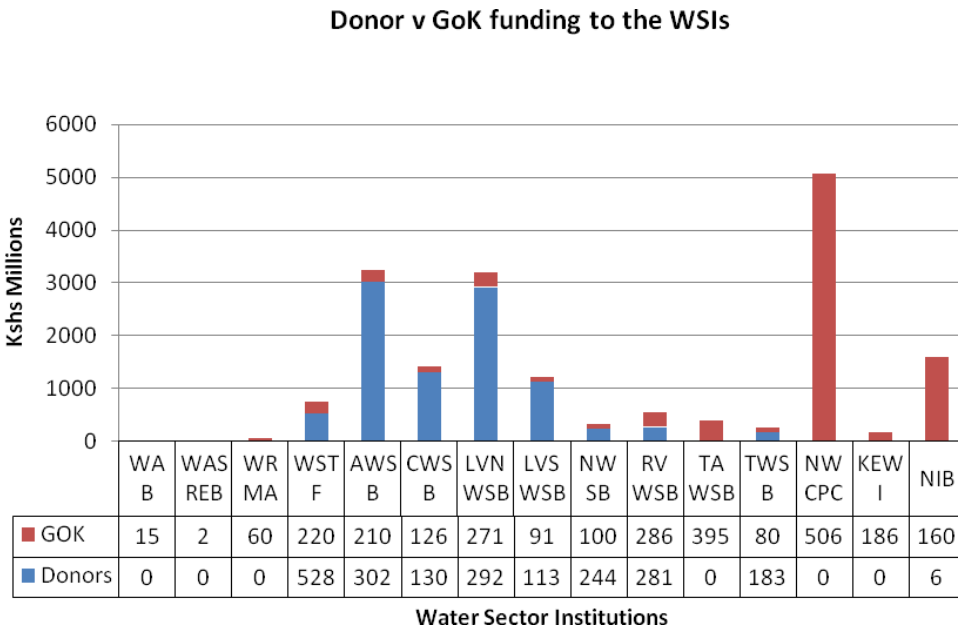
**Fig 4.1: Overall funding proportion**




(Source: Prepared by Researcher with Data from Ministry of Water)

On funding preferences to WSIs by development partners and GoK, it becomes evident that the priority of GoK in funding allocation is different from that of the development partners. From the Government allocations, NWCPC accounted for 58% of the allocations from the MWIs, followed by NIB at 9% and TAWSB at 5%. In contrast, about 99.9% of DP funds went to WSBs and the WSTF, and the balance of 0.1% went to NIB. NWCPC did not receive any funds from donors despite the large financing from MWI. The donors are increasingly aligning themselves to the sectors strategies and using the necessary structures that have been put in place, and this is illustrated by the increasing amount of funding to the water sector channeled through the WSTF and WSBs. In the interest of ensuring efficiency of capital, MWI must follow up and ensure that the level of impacts by WSIs is commensurate to the level of funding.

**Fig 4.2: Donor vs. GoK funding to the water sector institutions**

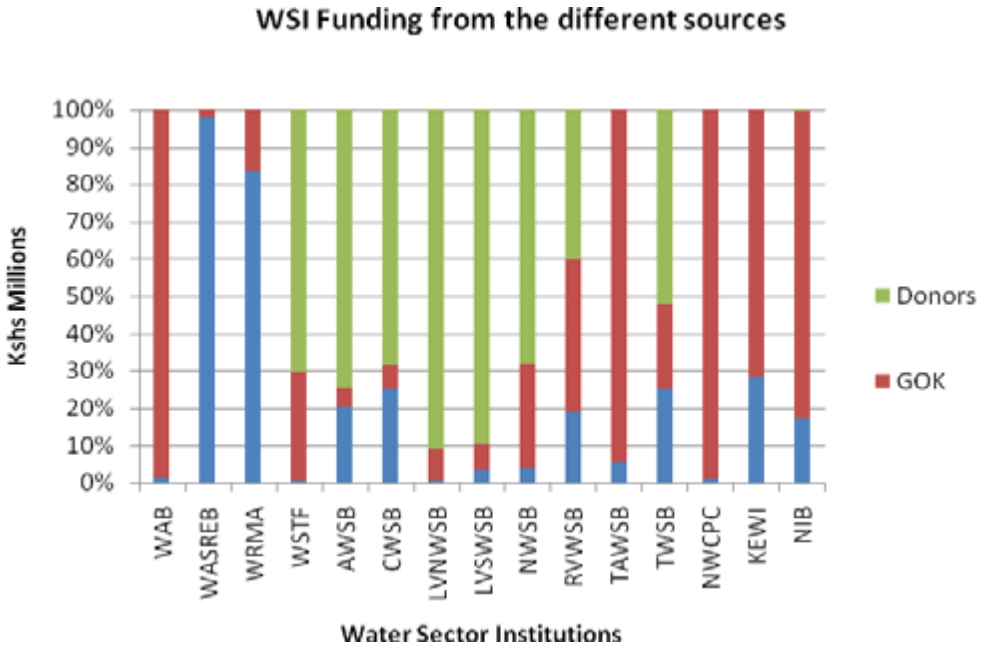



| | WAB | WASREB | WRMA | WSTF | AWSB | CWSB | LVNWSB | LVSWSB | NWSB | RVWSB | TAWSB | TWSB | NWCPC | KEWI | NIB |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| GOK | 15 | 2 | 60 | 220 | 210 | 126 | 271 | 91 | 100 | 286 | 395 | 80 | 506 | 186 | 160 |
| Donors | 0 | 0 | 0 | 528 | 302 | 130 | 292 | 113 | 244 | 281 | 0 | 183 | 0 | 0 | 6 |

(Source: Prepared by Researcher with Data from Ministry of Water)

Self-financing for WSIs Overall self-financing of state corporations was 61 % of the total self-financing of the sector in 2010/11 financial year. Self-financing (A-in-A) of the sector as part of the performance indicators is still low for certain WSIs. The WSIs that collect least AIA in proportion to total expenditure are WSTF at 0.6%, LVNWSB at 0.6%, NWCPC at 0.9%, and WAB at 1.3%. The self-sustainability levels of the remaining WSIs range between 3.2 % (LVSWSB) to 98% (WASREB).

**Fig 4.3: Funding sources to the water sector institutions**




(Source: Prepared by Researcher with Data from Ministry of Water)

Taking into account the mandate of the institutions, the MWI should take a critical look at the institutions showing very low sustainability levels and establish measures that enhance their sustainability. It is important to note that the percentage of self-financing compared to total costs is distorted by the fact that almost all staff seconded to the WSIs still appear on the MWI's payroll. Therefore, there is need to have seconded staff fully delinked and placed on the payroll of the WSIs in order for the self-financing figures to show a true reflection of the sustainability level of the institution.

**Table 4.3: Funding of WSIs vs. sector receipts in 2010/11 (KSh million)**

| Source of funding | GOK | Donor | Internally generated funds (A-in-A) | WSI total |
|---|---|---|---|---|
| Actual receipts to WSIs | 8,715 | 9,639 | 2,477 | 20,831 |
| Total receipts to the sector (GoK & donors) | 15,177 | 11,815 | 4,085 | 31,077 |
| % funding of WSI to that of the sector | 57 | 82 | 61 | 67 |

(Source: Prepared by Researcher with Data from Ministry of Water)

### 4.2.2 External Resources for Projects

Through the Ministry of finance various water projects receive funding from external sources to start up, implement and monitor capital intensive projects. Spanning from 2004 the funds allocated to the ministry for such projects have not been consistent. The table below shows.

**Table 4.4: Donor funds channelled to Ministry of Water and Irrigation from 2003 to date through the Ministry of Finance.**

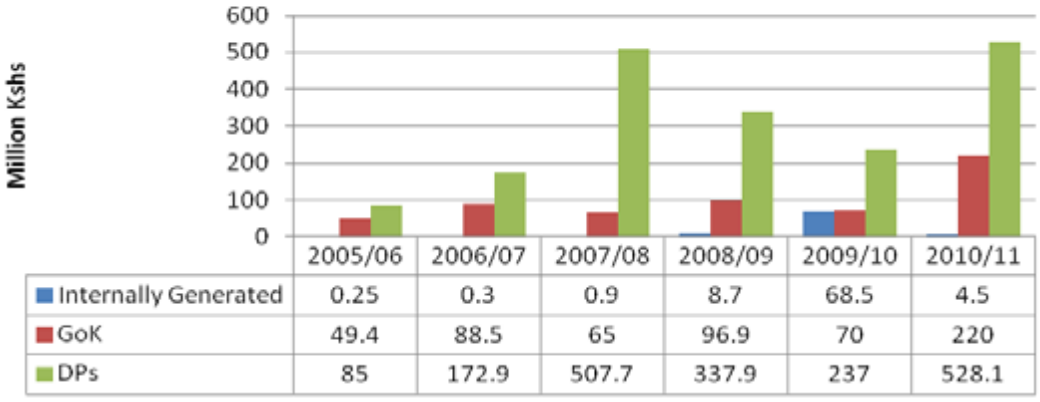
| | **Donor Commitments** | | **Printed estimates** | | **Difference** | |
|---|---|---|---|---|---|---|
| **Fiscal year** | **A-I-A** | **Revenue** | **A-I-A** | **Revenue** | **A-I-A** | **Revenue** |
| **2003/2004:Kshs.2,424,717,538 representing 6 per cent of the Total** | | | | | | |
| Loans | 1,009,899,072 | 73,621,356 | 877,799,698 | 55,630,088 | 0 | 0 |
| Grants | 1,525,537,840 | 21,380,000 | 1,525,537,840 | 21,380,000 | 0 | 0 |
| **2005/2006: 7 per cent of the total** | | | | | | |
| Loans | 1,929,782,700 | 588,301,957 | 1,569,306,800 | 573,696,585 | 360,475,900 | 14,605,372 |
| Grants | 1,705,795,200 | 301,077,911 | 1,458,795,200 | 295,875,225 | 247,000,000 | 5,202,686 |
| **2007/2008: Kshs.6,850,139,029** | | | | | | |
| Loans | 731,000,000 | 3,488,620,000 | 531,000,000 | 3,488,620,000 | 200,000,000 | |
| Grants | 826,854,195 | 2,003,664,834 | 826,854,195 | 2,003,664,834 | | |
| **2008/2009** | | | | | | |
| Loans | 988,036,756 | 4,769,700,000 | 388,036,756 | 4,749,700,000 | 600,000,000 | 20,000,000 |
| Grants | 1,315,317,655 | 2,300,509,263 | 1,191,847,655 | 2,300,509,263 | 123,470,000 | |
| **2009/2010** | | | | | | |
| Loans | 3,867,296,026 | 8,911,267,462 | 3,867,296,026 | 8,911,267,462 | 0 | 0 |
| Grants | 1,121,808,900 | 2,060,098,732 | 1,121,808,900 | 2,060,098,732 | 0 | 0 |
| **2010/2011** | | | | | | |
| Loans | 6,768,988,221 | 9,528,932,394 | 6,768,988,221 | 9,528,932,394 | 0 | 0 |
| Grants | 1,317,651,050 | 2,897,940,883 | 1,317,651,050 | 2,897,940,883 | 0 | 0 |
| **2011/2012** | | | | | | |
| Loans | 6,112,482,986 | 13,723,397,783 | 6,112,482,986 | 13,723,397,783 | 0 | 0 |
| Grants | 742,000,000 | 3,436,583,175 | 742,000,000 | 3,436,583,175 | 0 | 0 |

(Source: Prepared by Researcher with Data from Ministry of Finance)

### 4.2.3 Water Services Trust Fund

WSTF is a pro-poor financing basket with a mandate to fund investments in water service provision to the underserved areas. The major source of WSTF funds is donors and GoK, donors contributing a significantly higher amount – 70% of WSTF funds in 2010/11. This was 2.4 times the GoK contribution. There was an increase in donor funding to the WSTF, up to KSh 528 in 2010/11 from KSh 440 million in 2009/10 (the previous peak was KSh 508 million in 2007/8).

**Fig 4.4: WSTF funding**




| | 2005/06 | 2006/07 | 2007/08 | 2008/09 | 2009/10 | 2010/11 |
|---|---|---|---|---|---|---|
| Internally Generated | 0.25 | 0.3 | 0.9 | 8.7 | 68.5 | 4.5 |
| GoK | 49.4 | 88.5 | 65 | 96.9 | 70 | 220 |
| DPs | 85 | 172.9 | 507.7 | 337.9 | 237 | 528.1 |

(Source: Prepared by Researcher with Data from MOW)

However the internally-generated funds (AIA) have relatively decreased, accounting for 0.6% of total WSTF funding in 2010/11 compared to 2% in 2009/10.

Internally generated funds by the institution has reduced over the years, Other than funds generated internally, the institution received funds from GoK and other sources which, were low below what was expected.

A big percentage of funds were received from donors such as NRM as had been anticipated and therefore the activities scheduled to be undertaken using these funds were were done. However funds received from GoK (dev) and SIDA were below 35% of the expected amount. The funds received under WSTF & Others include funds from UNEP, Plan International, Nature Conservancy Laikipia Wildlife Forum and IWRAP.

The institutions expenditure level has also increased over the years. Notably, for recurrent expenditure administration and finance costs were covered while for development expenditure projects expenses were covered. Thus in both cases, expenditure is still way below the projected expenditure level due to unavailability of budgeted funds.

(Source: Prepared by Researcher with Data from MOW)

### 4.2.4 National Water and Pipeline Corporation

Funding in this case has only been received from government grants and internally generated funds. Government grants constitute majority of funding as compared to internally generated funds. There were no funds received from donors such as Sweden (SIDA) as had been anticipated and therefore the activities scheduled to be undertaken using these funds were adversely affected.

The institutions expenditure level has also increased over the years due to capital intensive projects. Notably, for recurrent expenditure administration expenses and board expenses are covered while for development expenditure boreholes drilled for various projects are covered.

(Source: Prepared by Researcher with Data from MOW)

### 4.2.5 Water Resource Management Authority

Internally generated funds by the institution has improved over the years, Other than revenue funds shown above, the Authority received funds from GoK and other sources which, as of 30th June 2013, amounted to Kshs.1.130 billion (or 51.69% of) against an expected amount of Kshs.2.186 billion.

There were no funds received from donors such as Sweden (SIDA) as had been anticipated and therefore the activities scheduled to be undertaken using these funds were adversely affected. However funds received from GoK (dev), WSTF and NRM were above 80% of the expected amount. As for MTAP budget, an amount of Kshs.50m had earlier been released to the Authority in FY 2011/2012 in respect of this Programme and most of these funds were utilized in the current financial year.The funds received under WRMA & Others include funds from UNEP, Plan International, Nature Conservancy Laikipia Wildlife Forum and IWRAP.

The institutions expenditure level has also increased over the years. Notably, for recurrent expenditure 74.56% of the budget was spent while for development expenditure only 59.39% of the budget was utilized. Thus in both cases, expenditure is still way below the projected expenditure level due to availability of budgeted funds.

(Source: Prepared by Researcher with Data from MOW)

### 4.2.6 Water Service Regulatory Board

The revenue streams for WASREB include Government grants, donor funds and internally generated funds from regulatory levy.There were no funds received from donors such as Sweden (SIDA) as had been anticipated and therefore the activities

scheduled to be undertaken using these funds were adversely affected. However funds received from NRM as one of their key donors helped in meeting costs.

The institutions expenditure level has also increased over the years. Personnel emoluments have increased over the years likewise to administrative expenses and board expenses. Since WASREB is involved with regulation of water service provision their expenses are not that high compared to institutions handling big projects.

(Source: Prepared by Researcher with Data from MOW)

### 4.2.7 Kenya Water Institute

Since KEWI is a water sector learning institution a big percentage of their funding comes from fees paid by students who are sponsored by the ministry and other water sector institutions to learn more about water resource monitoring, management and regulation.

There were no funds received from donors such as Sweden (SIDA) as had been anticipated and therefore the activities scheduled to be undertaken using these funds were adversely affected. However funds received from GoK (dev), were below 25% of the expected amount.

The institutions expenditure level has also increased over the years. Notably, for recurrent expenditure covering staff and administrative expenses while for development expenditure only 5 percent budget was realized and pushed to construction. Thus in both cases, expenditure is still way below the projected expenditure level due to availability of budgeted funds.

(Source: Prepared by Researcher with Data from MOW)

### 4.2.8 National Irrigation Board

Funding is received from Government grants, Donor funds and internally generated funds. National irrigation board is involved in capital intensive irrigation projects .This pushes management to commit a lot of their budgeted funds despite the actual receipt.

Funds were received from donors such as Sweden (SIDA) as had been anticipated and therefore the activities scheduled to be undertaken were implemented. However funds received from GoK (dev) and NRM were above 80% of the expected amount.

The institutions expenditure level has also increased over the years. Notably, for recurrent expenditure cover administrative and finance costs while development expenditure only 59.39% of the budget was utilized. Thus in both cases, expenditure was still way below the projected expenditure level due to availability of budgeted funds.

(Source: Prepared by Researcher with Data from MOW)

### 4.3 Financial Sustainability Measure

Operating Surplus Ratio (%) =Net Operating Surplus/Operating Revenue (Demonstrates the extent to which operating revenues cover operational expenses only or are available for capital purposes.

Net Financial Assets/Liability Ratio (%) =Total Liabilities less Current Assets/Operating Revenue (Demonstrates the extent to which the net financial liabilities can be services by its operating revenues.

Interest Coverage Ratio (%) =Net Interest Expense/Operating Revenue (Demonstrates the extent to which operating revenues are being used to meet the financial charges associated with debt servicing obligations.

Working Capital Ratio =Current Assets/Current Liabilities (Demonstrates the extent to which liquid assets are available to meet short term debt obligations.)

**Table 4.5.1: Water Services Trust Fund**

| | | 2011/2012 | 2010/2011 |
|---|---|---|---|
| 1 | Operating Surplus ratio | 0.192639716 | 4.561408455 |
| 2 | Net, Financial asset/liability ratio | -32.23753209 | -47.17359252 |
| 3 | Interest Coverage Ratio | 0.779346871 | 0 |
| 4 | Working Capital Ratio | 77 | 50.19191177 |

**Table 4.5.2: National Water and Pipeline Corporation**

| | | **2011/12** | **2010/11** |
|---|---|---|---|
| 1 | Operating Surplus ratio | 6.616299613 | -0.445122328 |
| 2 | Net, Financial asset/liability ratio | -92.3043186 | -133.9555764 |
| 3 | Interest Coverage Ratio | | |
| 4 | Working Capital Ratio | 77.18800852 | 50.19191177 |

**Table 4.5.3: Water Resource Management Authority**

| | | 2011/2012 | 2010/2011 |
|---|---|---|---|
| 1 | Operating Surplus ratio | 36.04036674 | -9.305804819 |
| 2 | Net, Financial asset/liability ratio | -36.09675111 | 11.50339368 |
| 3 | Interest Coverage Ratio | | |
| 4 | Working Capital Ratio | 6.140754716 | 5.850856866 |

**Table 4.5.4: Water Services Regulatory Board**

| | | 2011/12 | 2010/11 |
|---|---|---|---|
| 1 | Operating Surplus ratio | 17.1499555 | 14.56813756 |
| 2 | Net, Financial asset/liability ratio | -70.20589765 | -65.82108496 |
| 3 | Interest Coverage Ratio | | |
| 4 | Working Capital Ratio | 19.09731741 | 10.63098066 |

**Table 4.5.5: Kenya Water Institute**

| | | 2010/11 | 2009/10 |
|---|---|---|---|
| 1 | Operating Surplus ratio | -2.989781669 | -15.05461231 |
| 2 | Net, Financial asset/liability ratio | -25.44391854 | -21.1200118 |
| 3 | Interest Coverage Ratio | | |
| 4 | Working Capital Ratio | 7.215291625 | 2.433742171 |

**Table 4.5.6: National Irrigation Board**

| | | **2012/13** | **2011/12** |
|---|---|---|---|
| 1 | Operating Surplus ratio | 12.36884867 | 40.47226187 |
| 2 | Net, Financial asset/liability ratio | -38.15741772 | -65.01470723 |
| 3 | Interest Coverage Ratio | | |
| 4 | Working Capital Ratio | 23.06193285 | 12.35423467 |

Ratio analysis model will be used to identify how donor dependent an organisation currently is and how long it could survive if all external aid were suddenly withdrawn. These indicators will give a picture of the financial vulnerability of an organisation. Through these ratios the funding mix and survival days of sampled water sector institutions will be analyzed to know its effect on their financial sustainability.

'Donor Dependency' ratio: Total Donor Income/Total Income * 100 (result will be expressed as %)

'Survival Ratio' ratio: General Reserves/Total Income *52 or 365 (result will be expressed in weeks or days)

**Table 4.6: Ratio analysis results**

| | WSTF | | NCWPC | | WRMA | |
|---|---|---|---|---|---|---|
| Donor Dependency' ratio (%) | 84 | 82 | 63.80 | 85.45 | 10 | 20 |
| Survival Ratio' ratio(dys) | 125.27 | 183.48 | 685.84 | 975.02 | 193 | 99 |
| | WASREB | | KEWI | | NIB | |
| Donor Dependency' ratio (%) | 11 | 1 | 0 | 0 | 94.44 | 93.52 |
| Survival Ratio' ratio(dys) | 275 | 269 | 423 | 437 | 366.3 | 366.0 |

## 4.4 Regression Analysis Results

**Table 4. 7: Model Summary**

| | | |
|---|---|---|
| R Squared | 0.3423 | 34.23% of the change in Financial sustainability can be explained by the change in the 4 Independent Variables |
| Adjusted R Squared | 0.2574 | Adjusted for Sample Size bias |
| Standard Error | 12.4056 | to +/- on result of Regression Equation |
| F - Statistic | 4.0335 | Therefore analysis IS Significant |

**Table 4. 8: Regression Coefficients**

| | Coefficients | Standard Error | t Stat | p Value |
|---|---|---|---|---|
| Intercept | -81.397 | 53.176 | -1.531 | 13.60% |
| Government grant | 46.841 | 48.561 | 0.965 | 34.22% |
| Donor funding | 93.477 | 52.663 | 1.775 | 8.57% |
| Internally generated funds | 95.172 | 56.092 | 1.697 | 9.98% |
| Reserves | 15.808 | 8.722 | 1.812 | 7.96% |

Coefficient of determination explains the extent to which changes in the dependent variable can be explained by the change in the independent variables or the percentage of variation in the dependent variable (Financial Sustainability of WSI in Kenya) that is explained by all the four independent variables.

As per the SPSS generated table above, the equation ($\mathbf{Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \varepsilon_i}$) becomes:

$$\boldsymbol{Y = -81.397 + 46.841(X_1) + 93.477(X_2) + 95.172(X_3)}$$
$$\boldsymbol{+ 15.808(X_4)(+/- 12.41)}$$

Table 4-2 presents the regression analysis result for the relationship between the dependent variable financial sustainability and the independent variables. The intercept term was -81.397 which was not significant, $t_{(14)} = -1.53, p > 0.05$. According to the model above, when other factors are held constant, a unit increase in government grants will increase the rate of financial sustainability by 46.841. When other factors are held constant, a unit increase in Donor funds will increase the financial sustainability by 93.477. The model also shows that internally generated funds had a positive relationship with financial sustainability such that a unit increases in internally generated funds

holding other factors constant will lead to an increase in financial sustainability by 95.172. The study also found that a unit increase in general reserves will lead to a 15.808 increase in the rate of financial sustainability.

# CHAPTER FIVE:

# SUMMARY, CONCLUSION AND RECOMMENDATIONS

## 5.1 Introduction

This chapter is organized into five parts; the summary of findings, conclusions of the study, recommendations for policy and practice and suggestions for further research.

## 5.2 Summary

Studies carried out in Kenya have shown the level of funding to Kenya is inconsistent, both in absolute and relative terms. Opinion is still divided over whether or not funding sources has an effect on financial sustainability, which requires further research. This study sought to investigate the effect of funding sources on financial sustainability of water sector institutions in Kenya. This study adopted a descriptive research design.

Financial sustainability was measured through various ratios at first to bring in the second part of analysis. At the second level donor dependency ratio and survival ratio was analysed .The FS measure was compared to the ratio analysis results.The target population composed of water Sector Institutions that included WSTF,WASRED,WRMA,NIB,NWCPC,KEWI,CWSB,RVWSB,LVNWSB,LVSWSB,AWSB,TAWSB. Secondary data involved the collection and analysis of published material and information from other sources such as the Ministry of Finance now called National treasury and Ministry of Water and Irrigation. The sample data for this study was for the period spanning 2004 to 2012. This study used ratio analysis model in which the donor dependency ratio and survival ratio were obtained based on the funding mix. From the

study findings and discussion, the study concludes that funding sources have an effect on an organizations financial sustainability.

The study recommends that policy planners in this case Ministry of water and implementers should put in place effective mechanisms to mobilize internal resources rather that external to make the Institutions more financial sustainable.

The resulting pecking order of financing is as follows: internally generated funds first, followed by respectively low-risk debt financing and share financing. In Myers and Majluf model (1984), outside investors rationally discount the firm's stock price when managers issue equity instead of riskless debt. To avoid this discount, managers avoid equity whenever possible. The Myers and Majluf model predicts that managers will follow a pecking order, using up internal funds first, then using up risky debt, and finally resorting to equity. In the absence of investment opportunities, firms retain profits and build up financial slack to avoid having to raise external finance in the future.

### 5.3 Conclusions

From the study findings and discussion, the study concludes that funding sources affects the financial sustainability of organizations. On the study objective, the ratio analysis revealed a strong positive relationship between internally generated funds as one funding source and financial sustainability growth in water sector institutions in Kenya. On the other hand the regression analysis revealed that when all factors are held constant a positive relationship is seen on financial sustainability with an increase in government grants, donor funding, internally generated funds and reserves.

The resulting pecking order of financing is as follows: internally generated funds first, followed by respectively low-risk debt financing and share financing. In Myers and Majluf model (1984), outside investors rationally discount the firm's stock price when managers issue equity instead of riskless debt. To avoid this discount, managers avoid equity whenever possible. The Myers and Majluf model predicts that managers will follow a pecking order, using up internal funds first, then using up risky debt, and finally resorting to equity. In the absence of investment opportunities, firms retain profits and build up financial slack to avoid having to raise external finance in the future.

Throughout the whole study its necessary to note that financial crisis has affected all major means of financing the water sector. Debt financing has become more expensive across the board. This negatively affects projects which were to be implemented to benefit the public. Project finance deals based on high debt levels are no longer feasible, particularly in countries considered to be risky. New project finance structures will need to involve co-operation with sovereign-backed banks and will often require bridging loans at less favorable conditions. Equity valuations of water companies have also fallen substantially, while the financial health of possible investors such as private equity funds is in doubt.

This new situation following the crisis will require re-thinking the way in which the water sector is financed. Key features of a new financing strategy will likely have to involve: Some deleveraging in developed markets will be required to maintain strong credit quality, which is increasingly important for accessing bond markets; Access to debt through bond markets is less likely to be available for smaller companies. This may lead

to consolidation or pooled financing to ensure continued finance ability; Given many other priorities placed on government funding, it will become much harder for municipal water companies to raise the required funds while capital expenditure requirements in the water sectors around the world remain large;

There are signs that governments will not be able to provide the required financing in all countries because their balance sheets are weak. In these cases, relying on private access to finance may be a solution as large, high credit quality corporate borrowers generally retain access to funds; To improve availability of credit, revive project finance deals or encourage investment by equity funds in emerging markets, the devaluation risk may have to be recognized and insurance will have to be given. This could either take the form of a devaluation backstop facility provided by governments or IFIs or an increase in local currency financing.

### 5.4 Recommendations for Policy and Practice

The study recommends that policy planners in this case Ministry of water and implementers should put in place effective mechanisms to mobilize internal resources rather that external to make the Institutions more financially sustainable.

## 5.5 Limitations of the Study

The strength of this research lies in its timing since various government run institutions are fighting to remain relevant and financially stable. The scope of this research was for recent past years including 2012. However it is not known whether the results would hold if the study would be done during the next coming ten years.

The findings of the research provide more concerning the effect of funding sources on financial sustainability of Kenya water sector institutions. This, however, does not provide enough evidence that can be used to make universal arguments concerning the effect of funding sources on financial sustainability.

The quality of the data may be a weakness of this study. It is not possible to tell from this research whether the results are simply due to the nature and quality of data used or whether it is the true picture of the situation. Actually the use of the data from the various sources like the Ministry of Finance and Ministry of Water is based on the assumption that the data is accurately captured and maintained.

### 5.6 Suggestions for Further Research

There is a need to answer the question of whether the findings of this research can be made universal across time in Kenya. Likewise to Kenya there are very many countries in the world that receive funding in different forms and quantity to run government functions. This study has covered only one country. A research can be conducted to consolidate and reconcile all the findings on effects of funding sources on financial sustainability of various organizations in the world in order to tell what the situation is and come up with a universal result.

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# APPENDICES

## Appendix I: X and Y variables

| y | X1 | X2 | X3 | X4 |
|---|---|---|---|---|
| 0.192639716 | 0.150331536 | 0.840112365 | 0.003057886 | 0.343212203 |
| 4.561408455 | 0.142466346 | 0.819548093 | 0.003574746 | 0.502701488 |
| 6.616299613 | 0.638021905 | 0 | 0.361978095 | 0.982704521 |
| -0.445122328 | 0.854590287 | 0 | 0.145409713 | 1.427486524 |
| 36.04036674 | 0.060434368 | 0.100780481 | 0.838785151 | 0.527993095 |
| -9.305804819 | 0.312193624 | 0.203246742 | 0.484559635 | 0.272374831 |
| 17.1499555 | 0.095039913 | 0.105994669 | 0.638021905 | 0.753663578 |
| 14.56813756 | 0.016149869 | 0.007426543 | 0.854590287 | 0.738045978 |
| 6.616299613 | 0.1875 | 0 | 0.75 | 1.15941934 |
| -0.445122328 | 0.1875 | 0 | 0.75 | 1.196552554 |
| 12.36884867 | 0.009321398 | 0.94448477 | 0.046193832 | 0.381612301 |
| 40.47226187 | 0.010540996 | 0.935222001 | 0.054237004 | 0.650191125 |
| 6.616299613 | 0.1875 | 0 | 0.75 | 1.15941934 |
| -0.445122328 | 0.1875 | 0 | 0.75 | 1.196552554 |
| 12.36884867 | 0.009321398 | 0.94448477 | 0.046193832 | 0.381612301 |
| 40.47226187 | 0.010540996 | 0.935222001 | 0.054237004 | 0.650191125 |
| 0.192639716 | 0.150331536 | 0.840112365 | 0.003057886 | 0.343212203 |
| 4.561408455 | 0.142466346 | 0.819548093 | 0.003574746 | 0.502701488 |
| 6.616299613 | 0.638021905 | 0 | 0.361978095 | 0.982704521 |
| -0.445122328 | 0.854590287 | 0 | 0.145409713 | 1.427486524 |
| 36.04036674 | 0.060434368 | 0.100780481 | 0.838785151 | 0.527993095 |
| -9.305804819 | 0.312193624 | 0.203246742 | 0.484559635 | 0.272374831 |
| 17.1499555 | 0.095039913 | 0.105994669 | 0.638021905 | 0.753663578 |
| 14.56813756 | 0.016149869 | 0.007426543 | 0.854590287 | 0.738045978 |
| 17.1499555 | 14.56813756 | 6.616299613 | -0.445122328 | 12.36884867 |
| 0.095039913 | 0.016149869 | 0.1875 | 0.1875 | 0.009321398 |
| 0.105994669 | 0.007426543 | 0 | 0 | 0.94448477 |
| 0.638021905 | 0.854590287 | 0.75 | 0.75 | 0.046193832 |
| 0.753663578 | 0.738045978 | 1.15941934 | 1.196552554 | 0.381612301 |
| 6.616299613 | -0.445122328 | 36.04036674 | -9.305804819 | 17.1499555 |
| 0.638021905 | 0.854590287 | 0.060434368 | 0.312193624 | 0.095039913 |
| 0 | 0 | 0.100780481 | 0.203246742 | 0.105994669 |
| 0.361978095 | 0.145409713 | 0.838785151 | 0.484559635 | 0.638021905 |
| 0.982704521 | 1.427486524 | 0.527993095 | 0.272374831 | 0.753663578 |
| 0.75 | 0.046193832 | 0.054237004 | 0.003057886 | 0.003574746 |
| 1.196552554 | 0.381612301 | 0.650191125 | 0.343212203 | 0.502701488 |

## Appendix II: Forecast output from regression analysis

| Forecast Output | | | | | |
|---|---|---|---|---|---|
| | | | | | |
| Time Period | Government grant | Donor funding | Internally generated funds | Reserves | Financial sustainability |
| 1 | 0.15 | 0.84 | 0.00 | 0.34 | 0.19 |
| 2 | 0.14 | 0.82 | 0.00 | 0.50 | 4.56 |
| 3 | 0.64 | 0.00 | 0.36 | 0.98 | 6.62 |
| 4 | 0.85 | 0.00 | 0.15 | 1.43 | -0.45 |
| 5 | 0.06 | 0.10 | 0.84 | 0.53 | 36.04 |
| 6 | 0.31 | 0.20 | 0.48 | 0.27 | -9.31 |
| 7 | 0.10 | 0.11 | 0.64 | 0.75 | 17.15 |
| 8 | 0.02 | 0.01 | 0.85 | 0.74 | 14.57 |
| 9 | 0.19 | 0.00 | 0.75 | 1.16 | 6.62 |
| 10 | 0.19 | 0.00 | 0.75 | 1.20 | -0.45 |
| 11 | 0.01 | 0.94 | 0.05 | 0.38 | 12.37 |
| 12 | 0.01 | 0.94 | 0.05 | 0.65 | 40.47 |
| 13 | 0.19 | 0.00 | 0.75 | 1.16 | 6.62 |
| 14 | 0.19 | 0.00 | 0.75 | 1.20 | -0.45 |
| 15 | 0.01 | 0.94 | 0.05 | 0.38 | 12.37 |
| 16 | 0.01 | 0.94 | 0.05 | 0.65 | 40.47 |
| 17 | 0.15 | 0.84 | 0.00 | 0.34 | 0.19 |
| 18 | 0.14 | 0.82 | 0.00 | 0.50 | 4.56 |
| 19 | 0.64 | 0.00 | 0.36 | 0.98 | 6.62 |
| 20 | 0.85 | 0.00 | 0.15 | 1.43 | -0.45 |
| 21 | 0.06 | 0.10 | 0.84 | 0.53 | 36.04 |
| 22 | 0.31 | 0.20 | 0.48 | 0.27 | -9.31 |
| 23 | 0.10 | 0.11 | 0.64 | 0.75 | 17.15 |
| 24 | 0.02 | 0.01 | 0.85 | 0.74 | 14.57 |
| 25 | 0.19 | 0.00 | 0.75 | 1.16 | 6.62 |
| 26 | 0.19 | 0.00 | 0.75 | 1.20 | -0.45 |
| 27 | 0.01 | 0.94 | 0.05 | 0.38 | 12.37 |
| 28 | 0.01 | 0.94 | 0.05 | 0.65 | 40.47 |
| 29 | 0.15 | 0.84 | 0.00 | 0.34 | 0.19 |
| 30 | 0.14 | 0.82 | 0.00 | 0.50 | 4.56 |
| 31 | 0.64 | 0.00 | 0.36 | 0.98 | 6.62 |
| 32 | 0.85 | 0.00 | 0.15 | 1.43 | -0.45 |
| 33 | 0.06 | 0.10 | 0.84 | 0.53 | 36.04 |
| 34 | 0.31 | 0.20 | 0.48 | 0.27 | -9.31 |
| 35 | 0.10 | 0.11 | 0.64 | 0.75 | 17.15 |
| 36 | 0.02 | 0.01 | 0.85 | 0.74 | 14.57 |

## Appendix III: WSI Statement of comprehensive Income and Financial Position

## WATER SERVICES TRUST FUND

### Statement of comprehensive income

| | | 2011/12 | 2010/11 |
|---|---|---|---|
| **INCOME** | GOK grants | 200,000,000 | 168,999,101 |
| | Donor funds | 1,117,679,478 | 972,179,712 |
| | Miscellaneous income | 4,068,190 | 4,240,502 |
| | Total income | 1,330,392,844 | 1,186238,758 |
| **EXPENDITURE** | Finance costs | 10,368,375 | |
| | Administration expenses | 199,782,126 | 159,949,851 |
| | Project expenses | 1,117,679,478 | 972,179,712 |
| | Total expenditure | 1,327,829,979 | 1,132,129,563 |
| **Surplus** | | 2,562,865 | 54,109,195 |

**Table 4.6.1: Statement of financial position**

| | | 2011/12 | 2010/11 |
|---|---|---|---|
| **ASSETS** | Non-current assets | 27,721,239 | 36,732,551 |
| | Current assets | 450,294,850 | 588,429,144 |
| | Total Assets | 478,016,089 | 625,161,695 |
| **Reserves,liabilities** | Reserves | 456,607,059 | 596,323,989 |

| | | | |
|---|---|---|---|
| | Non-current liabilit | 15,575,289 | 17,114,121 |
| | Current liabilities | 5,833,741 | 11,723,585 |
| | Total reserves n liab | 478,016,089 | 625,161,695 |

(Source: Prepared by Researcher with Data from MOW)

### 4.2.4 National Water and Pipeline Corporation

**Statement of comprehensive income**

| | | **2011/12** | **2010/11** |
|---|---|---|---|
| **INCOME** | GOK grants | 296,452,595 | 357,000,000 |
| | Miscellaneous income | 168,190,692 | 60,744,041 |
| | Total income | 464,643,287 | 417,744,041 |
| **EXPENDITURE** | Staff costs | 234,582,064 | 223,953,538 |
| | Administration expenses | 76,991,241 | 59,405,435 |
| | Board expenses | 26,263,018 | 27,608,170 |
| | Total expenditure | 432,903,909 | 418,808,536 |
| **Surplus/(Deficit)** | | 30,742,192 | (1,859,472) |

**Table 4.6.2: Statement of financial position**

| | | 2011/12 | 2010/11 |
|---|---|---|---|

| | | | |
|---|---|---|---|
| **ASSETS** | Non-current assets | 27,721,239 | 36,732,551 |
| | Current assets | 450,294,850 | 588,429,144 |
| | Total Assets | 478,016,089 | 625,161,695 |
| **Reserves, liabilities** | Reserves | 456,607,059 | 596,323,989 |
| | Non-current liabilit | 15,575,289 | 17,114,121 |
| | Current liabilities | 5,833,741 | 11,723,585 |
| | Total reserves n liab | 478,016,089 | 625,161,695 |

(Source: Prepared by Researcher with Data from MOW)

**Water Resource Management Authority**

Statement of comprehensive income

| | | **2011/12** | **2010/11** |
|---|---|---|---|
| **INCOME** | GOK grants | 99,988,400 | 255,940,758 |
| | Donor funds | 166,740,871 | 166,624,560 |
| | Internal income | 1,387,766,407 | 397,248,857 |
| | Total income | 1,654,495,678 | 819,814,175 |
| **EXPENDITURE** | Personnel emoluments | 334,161,808 | 308,532,374 |
| | Administration expenses | 191,309,321 | 163,029,546 |

| | | | |
|---|---|---|---|
| | Gen .office expenses | 57,686,941 | 53,848,688 |
| | WRM expenses | 374,307,073 | 271,066,382 |
| | Board expenses | 36,058,398 | 28,585,449 |
| | Audit fee, bad debts, depr | 64,685,826 | 71,042,044 |
| | Total expenditure | 1,058,209,368 | 896,104,481 |
| **Surplus/(Deficit)** | | 596,286,310 | (76,290,307) |

**Table 4.6.3: Statement of financial position**

| | | **2011/12** | **2010/11** |
|---|---|---|---|
| **ASSETS** | Non-current assets | 276,343,105 | 317,603,198 |
| | Current assets | 1,211,055,082 | 388,758,084 |
| | Total Assets | 1,487,398,188 | 706,361,282 |
| **Gen. fund,liabilities** | General fund | 873,562,293 | 223,296,747 |
| | Non-current liabilit | 416,619,895 | 416,619,895 |
| | Current liabilities | 197,216,000 | 66,444,641 |
| | Total Gen.fund n liab | 1,487,398,188 | 706,361,282 |

(Source: Prepared by Researcher with Data from MOW)

### 4.2.6 Water Service Regulatory Board

Table 4.5.4: Statement of comprehensive income

| | | **2011/12** | **2010/11** |
|---|---|---|---|
| **INCOME** | GOK grants | 15,735,300 | 2,073,495 |
| | Donor grants | 17,549,026 | 953,500 |
| | Miscellaneous income | 951,992 | 1,517,469 |
| | Regulatory levy | 131,328,858 | 123,846,361 |
| | Total income | 165,565,176 | 128,390,825 |
| **EXPENDITURE** | Personnel emoluments | 50,590,407 | 43,939,531 |
| | Administration expenses | 73,220,424 | 49,386,891 |
| | Gen .office expenses | 3,701,075 | 3,846,085 |
| | Board expenses | 5,149,893 | 6,157,353 |
| | Audit fee n depreciation | 4,509,023 | 6,356,813 |
| | Total expenditure | 137,170,822 | 109,686,673 |
| **Surplus** | | 28,394,354 | 18,704,,152 |

**Table 4.6.4: Statement of financial position**

| | | **2011/12** | **2010/11** |
|---|---|---|---|
| **ASSETS** | Non-current assets | 8,543,925 | 10,250,098 |

| | | | |
|---|---|---|---|
| | Current assets | 122,659,377 | 93,282,858 |
| | Current liabilities | 6,422,859 | 8,774,624 |
| **Reserves,liabilities** | Net Current Assets | 124,780,443 | 94,758,332 |
| | Capital n revenue resvs. | 124,780,443 | 94,758,332 |

(Source: Prepared by Researcher with Data from MOW)

## Kenya Water Institute

Statement of comprehensive income

| | | **2010/11** | **2019/10** |
|---|---|---|---|
| **INCOME** | Fees and GOK grants | 202,062,748 | 200,840,901 |
| **EXPENDITURE** | Personnel emoluments | 115,492,035 | 130,802,582 |
| | Administration expenses | 70,510,531 | 79,430,761 |
| | Depreciation | 21,110,891 | 20,495,377 |
| | Amortization cost | 642,526 | |
| | Audit fees | 348,000 | 348,000 |
| **Surplus/(Deficit)** | | (6,041,235) | (30,235,819) |

**Table 4.6.5: Statement of financial position**

| | | **2010/11** | **2009/10** |
|---|---|---|---|
| **ASSETS** | Non-current assets | 182,862,777 | 197,899,071 |

| | | | |
|---|---|---|---|
| | Current assets | 59,684,647 | 72,002,873 |
| | Current liabilities | 8,271,966 | 29,585,251 |
| **NCA** | Net current assets | 234,275,458 | 240,316,693 |
| | Finances | 234,275,458 | 240,316,693 |

(Source: Prepared by Researcher with Data from MOW)

**National Irrigation Board**

**Table 4.5.6: Statement of comprehensive income**

| | | **2012/13** | **2011/12** |
|---|---|---|---|
| **INCOME** | GOK grants | 7,399,754,453 | 6,341,000,000 |
| | Income | 73,030,351 | 71,470,148 |
| | Other operational Income | 361,914,801 | 367,738,183 |
| | Total income | 7,834,699,605 | 6,780,208,331 |
| **EXPENDITURE** | Finance costs | 2,264,637 | 1,522,487 |
| | Administration expenses | 483,883,118 | 363,404,563 |
| | Community Project exp. | 2,524,792,824 | 682,922,578 |
| | Operating expenses | 3,841,628,048 | 2,977,121,744 |
| | Board members exp. | 13,068,840 | 11,133,288 |
| | Total expenditure | 6,865,637,467 | 4,036,104,660 |

| | | | |
|---|---|---|---|
| **Surplus** | | 969,062,138 | 2,744,103,671 |

Table 4.6.6: Statement of financial position

| | | 2012/13 | 2011/12 |
|---|---|---|---|
| **ASSETS** | Non-current assets | 4,873,080,713 | 2,391,248,905 |
| | Current assets | 3,125,337,043 | 4,796,694,464 |
| | Total Assets | 7,998,417,756 | 7,187,943,369 |
| **Equity n liabilities** | Equity | 7,862,599,768 | 6,799,381,501 |
| | Non-current liabilit | 298,686 | 298,686 |
| | Current liabilities | 135,519,302 | 388,263,182 |
| | Total equity n liabilities | 7,998,417,756 | 7,187,943,369 |

(Source: Prepared by Researcher with Data from MOW)

## Appendix IV: funding source and proportion of various water sector instituions

| Water Sector Institution | WAB | WASREB | WRMA | WSTF | AWSB |
|---|---|---|---|---|---|
| Internally generated funds (A-in-A) | 0.2 | 101 | 299 | 4.5 | 824 |
| GOK | 15 | 2 | 60 | 220 | 210 |
| Donors | - | - | - | 528 | 3,027 |
| Total amount | 15 | 103 | 359 | 753 | 4,061 |
| % of A-in-A to total amount | 1.3 | 98 | 83 | 0.6 | 20 |
| % of GOK to total amount | 99 | 2 | 17 | 29 | 5 |
| % of DPs to total amount | - | - | - | 70 | 75 |

| Water Sector Institution | CWSB | LVNWSB | LVSWSB | KEWI | NIB |
|---|---|---|---|---|---|
| Internally generated funds (A-in-A) | 476 | 20 | 41 | 74 | 338 |
| GOK | 126 | 271 | 91 | 186 | 1,606 |
| Donors | 1,306 | 2,925 | 1,139 | - | 6 |
| Total amount | 1,908 | 3,216 | 1,270 | 260 | 1,950 |
| % of A-in-A to total amount | 25 | 0.6 | 3 | 28 | 17 |
| % of GOK to total amount | 7 | 8 | 7 | 72 | 82 |
| % of DPs to total amount | 68 | 91 | 90 | - | 0.3 |

| Water Sector Institution | NWSB | RVWSB | TAWSB | TWSB | NWCPC |
|---|---|---|---|---|---|
| Internally generated funds (A-in-A) | 14 | 131 | 23 | 88 | 46 |
| GOK | 100 | 286 | 395 | 80 | 5,067 |
| Donors | 244 | 281 | - | 183 | - |
| Total amount | 358 | 698 | 418 | 351 | 5,113 |
| % of A-in-A to total amount | 4 | 19 | 5 | 25 | 0.9 |
| % of GOK to total amount | 28 | 41 | 95 | 23 | 99 |
| % of DPs to total amount | 68 | 40 | - | 52 | - |

(Source: Prepared by Researcher with Data from MOW)

**Appendix V: actual receipts to water sector instituions**

| Source of funding | GOK | Donor | Internally generated funds (A-in-A) | WSI total |
|---|---|---|---|---|
| Actual receipts to WSIs | 8,715 | 9,639 | 2,477 | 20,831 |
| Total receipts to the sector (GoK & donors) | 15,177 | 11,815 | 4,085 | 31,077 |
| % funding of WSI to that of the sector | 57 | 82 | 61 | 67 |

| Description | Recurrent | Development | Total |
|---|---|---|---|
| 2007/8 | 55.8 | 40.6 | 96.4 |
| 2008/09 | 0 | 0 | 0 |
| 2009/10 | 1.6 | 65.3 | 66.9 |
| 2010/11 | 40.2 | 559 | 599.2 |

(Source: Prepared by Researcher with Data from MOW)