

**INFLUENCE OF IMPLEMENTATION OF COMMUNITY WATER  
PROJECTS ON SOCIAL DEVELOPMENT IN KENYA: A CASE OF  
TODONYANG, TURKANA COUNTY, KENYA**

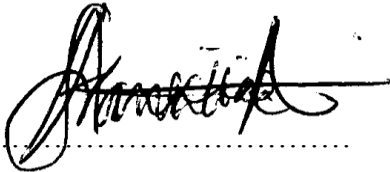
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**A Research Project Report Submitted in Partial Fulfilment of the Requirements  
for the Award of Masters of Arts in Project Planning and Management of  
University of Nairobi**

**2020**

**DECLARATION**


This research project is my original work and has not been presented for any award in any other university.

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This research project has been submitted for examination with my approval as the university supervisor.

Signed  Date.....

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## **DEDICATION**

This research project report is dedicated to my family whose patience, support and encouragement during the entire period of the study has seen me through and I will forever remain grateful.

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## ABSTRACT

Water projects play a critical role in the overall social development of a Todonyang community. Africa has been discovered to have the lowest total water supply coverage compared to other continents in the world. Even with the constant efforts of community-based water projects in guaranteeing access to clean drinking water for all, the service is still not adequate for the ever growing human population. This study therefore sought to investigate influence of implementation of community water projects on social development in Todonyang, Turkana County in Kenya. This study was guided by the following research objectives: to examine how types of water projects, water funding agencies and stakeholder participation influence on social development in Todonyang. The study adopted a descriptive survey design. The target population for this study constituted of 18,000 local community members, 17 community leaders, 8 water committees' members and representative of non-governmental organisations operating in the Todonyang town, Turkana County. The sample size of this study included two hundred and twenty-two (222) community members 17 community leaders, 8 water committees' members and 5 representatives of non-governmental organisations. Both simple random and purposive sampling procedure were used to arrive at the sample size. Questionnaires were used to collect data from the local members whereas; interview guides were used to collect information from the non-governmental organisation representatives. Data that was collected from the field were filtered, sorted out and cleaned in line with research objectives. The data was then coded, and entered into and analysed using statistics software (SPSS, Version 25.0). Quantitative data was analysed using descriptive statistics. It involved calculation of percentages, frequencies, means and standard deviation. Thematic analysis entailed the creation of themes related to the study variables. This was performed on the qualitative data provided by the open-ended parts in the questionnaire. Multiple regression analysis helped to analyse inferential data. The results were presented using tables. The study found that the major project sources of water supply in Todonyang are dams and boreholes which greatly influence social development. The study also established that water funding agencies promotes water infrastructure for improved sanitation and increases availability of safe drinking water greatly influence social development in Todonyang. The study also revealed that corporate responsibility towards improving community welfare and improving water infrastructure moderately influence social development in Todonyang. The study concluded that types of water projects had the greatest influence on social development in Todonyang, Turkana County, followed by stakeholder participation, then water funding agencies had the least influence on the social development in Todonyang, Turkana County. The study recommends that social development stakeholders in Todonyang, the beneficiary community and donors need to implement water projects of different types because this would enhance social development in the area. The study also recommends that the stakeholders in all the social development related projects needs to be involved in project financial management, project governance, project operations and management and project monitoring and evaluation to ensure all the projects are implemented adequately.

# **CHAPTER ONE**

## **INTRODUCTION**

### **1.1 Background to the Study**

Water projects are vital in the sustainable improvement of a healthy environment (Matli and Boniface, 2004). Projects are vehicles for advancement of the human quality of life. Delivery of safe drinking water and basic sanitation is among the most critical challenges for attaining sustainable development over the subsequent decade. Water is fundamentally interrelated with the Millennium Development Goals and basic sanitation that was added to the catalogue at the 2002 World Summit on Sustainable Development in Johannesburg (Hesselbarth, 2005).

More than 2.4 billion people in the world do not have access to clean water and sanitation as of 2014 (UNICEF, 2010). Furthermore, of the 2.4 billion people, approximately 700 million people do not have access to clean and safe drinking and cooking water. Sha (2011) notes that more than 6,000 children under the age of 5 perish every day from water-related illnesses. This shortage is attributed to lack of adequate infrastructure, finances, and transformation of climatic conditions. Yearly, over 750,000 people do not have access to basic sanitation and safe drinking water; consequently, this causes disease eruptions such as cholera amongst others (World Bank, 2010). Most advanced countries have access to clean water supply for drinking, cooking and washing. Nevertheless, there are some challenges that are still affecting these countries.

Water shortages have significant threats to livelihoods and wellbeing in many countries, including the United Kingdom. Parts of the United Kingdom are at present water-stressed and are facing a wide range of pressure; including a growing population and intensifying exploitation of increasingly inadequate water resources. In addition, several regions may become significantly drier in the future due to environmental changes, all of which imply major challenges to water resource management (NERC, 2015).

Sub-Saharan Africa still lags in the quest to supply safe and clean water in order to improve the social wellbeing of her citizens. Currently, more than 783 million people do not have access to fresh and safe water and about 37% of those people live in Sub-Saharan Africa (UNICEF, 2010). This indicates that there is a crisis in Africa in relation

to water supply and sanitation, for as much as 80% of illnesses are associated to poor water and sanitation conditions (United Nations Development Programme, 2006).

Kenya being one of the fastest developing nations in Africa is likewise one of the countries facing a scarcity of clean water and sanitation to sustain and foster its attributed socio-economic growth and development (UNESCO, 2006). The country has in excess of 47 million people, of which about 17 million (43%) do not have access to clean water (Marshall, 2011). Water scarcity has been a major problem for several decades in the country. This has been attributed mostly to, years of recurring droughts, poor management, little water supply, contamination of the available water, and conflict among different communities (Uchtmann, 2011). Moreover, Kenya with statistics that reflect the UNEP baseline is one of the most water-scarce countries in the world. Unsurprisingly, water heavily impacts major segments of Kenya's economy, including tourism (World Bank, 2010).

Low levels of access characterize water supply and sanitation in Kenya, in urban slums and in rural areas, as well as poor service quality in the form of intermittent water supply. Merely 9 out of 55 water service providers in Kenya provide continuous water supply, as of 2009 (WHO&UNICEF, 2010). Statistics indicate that as of 2008 59% of Kenyans; of which 83% of the figure in urban areas and while 52% in rural areas had access to improved drinking water sources. 19% of Kenyans that is 44% in urban areas and 12% in rural areas are reported as having access to piped water over a house or yard connection.

Joint Monitoring Programme (JMP) estimates that, access to improved water sources in urban areas declined from 91% in 1990 to 83% in 2008. In rural areas, however, access to improved water sources increased from 32% to 52% during the same period (WHO and UNICEF, 2010). An aquifer containing 250 million cubic metres (m<sup>3</sup>) was discovered in Turkana. However, the major challenge is to bring this valuable commodity within the reach of the people (Wakhungu, 2013).

Turkana County is in the semi-arid area of Northern Kenya and thus, experiences principally high child morbidity and mortality as a result of inadequate and unsafe drinking water (World Resources Institute, 2007). Declining and degraded water supplies have led to conflicts among different communities in Turkana, such as between

farmers and pastoralists, wildlife and humans among others (UNEP, 2010). In Turkana, the government has undertaken numerous measures in partnership with leading foundations to improve the water situation in the region.

The Turkana people are now seen to be engaging in farming due to the availability of freshwater as well as training on different methods of crop farming being undertaken by the Missionary Community of Saint Paul the Apostle, a Catholic-based Organization (United Nation, 2006). This crop farming, in turn, has aided them to yield products such as fruits, vegetables and Sorghum, which have enabled them to improve the diet that was primarily consisting of animal produce. Through reduced conflict and introduction of farming, as a result of the water projects, the people of Todonyang are today engaging in trade and sharing the resource which has resulted in the development of the people (Kariuki, 2012). Owing to the dry nature of Todonyang area and frequent conflicts, Non-Governmental Organizations (NGOs) such as the Missionary Community of St. Paul the Apostles (MCSPA) have seen it suitable to set up water projects in the area, after living and appreciating the culture and needs of the locals with the aid of local leaders and the Turkana County Government support (Salvans, 2012).

Some of the water projects realised include Earth-pan dams, Rock Catchment dams, and boreholes. As a result of these water projects, the local community members are now able to get viable amount of water for their domestic and livestock use. These projects have also reduced the frequency of conflicts experienced by the two neighbouring communities because of scarcity of water and pasture and has seen more cross-border trade increasing in the area. There is increased development of villages, education and health facilities at water points, as a result of people permanently settled at water points created and funded in the area.

## **1.2 Statement of the Problem**

Africa has been discovered to have the lowest total water supply coverage compared to other continents in the world. In Africa and other third world countries, national and regional governments, local and international NGOs and other concerned organizations capitalise large sums of money every year for the execution of rural water supply projects. Even with the constant efforts of community-based water projects in guaranteeing access to clean drinking water for all, the service is still not adequate for the ever growing human population. Soon after the funders close the project, most of

the water projects fail to attain the intended objective of providing communities with safe water (Hesselbarth, 2005).

Similarly, the people of Todonyang have been experiencing the same challenges. For instance, there have been cases of insecurity during droughts with clashing of the Todonyang community members and the Dassenech of Ethiopia due to inadequate water resources (World Bank, 2010). Further, there are inadequate number of water projects implemented, lack of sufficient funding agencies and insufficient stakeholder participation (UNICEF, 2010). This has raised a lot of questions among numerous stakeholders and the beneficiaries in Todonyang as to what factors are responsible for the deteriorating implementation of community water projects despite its positioning in the country in terms of are providing and fostering social development.

There are indeed a number of studies (Simiyu, Mweru, and Omete 2014; Herrera 2013; Wariua-Nyalwal, Patricia, et al 2013) that have been carried out with respect to social practices, water sources, or stakeholders' involvement in the social development. However, most of these studies have had their own limitations whereby some have been carried out in other countries. For those carried out in Turkana, none has been able to profoundly look at the current situation in Todonyang. Hence, there is need for this study to be carried out to examine the influence of implementation of community water projects and their impact on social development in Todonyang, Turkana, Kenya.

### **1.3 Purpose of the Study**

This research sought to establish the influence of implementation of community water projects on social development in Kenya: a case of Todonyang, Turkana County, Kenya.

### **1.4 Objectives of the Study**

This study was guided by the following research objectives:

- i) To determine how types of water projects influence social development.
- ii) To examine how water funding agencies, influence social development.
- iii) To investigate the influence of stakeholder participation on social development.

## **1.5 Research Questions**

This study attempted to answer the following questions:

- i) How do types of water projects influence social development?
- ii) How do water funding agencies influence social development?
- iii) How does stakeholder participation in water projects influence social development?

## **1.6 Research Hypotheses**

The following research null hypotheses were tested in this study:

- i) **H<sub>01</sub>**: There is no relationship between the types of water projects and social development in Todonyang (Turkana), Kenya.
- ii) **H<sub>02</sub>**: There is no relationship between the water funding agencies and social development in Todonyang (Turkana), Kenya.
- iii) **H<sub>03</sub>**: There is no relationship between stakeholder participation and social development in Todonyang (Turkana), Kenya.

## **1.7 Assumptions of the Study**

Since the introduction of water projects in Todonyang, the frequency of conflict has significantly reduced, the people in Todonyang are now engaging in crop farming due to adequate water, the government is trying to get more involved in helping none governmental organisations to provide enough water to the people and the water projects are not sufficient for the area.

## **1.8 Significance of the Study**

This study possibly might help the national and county government in its policy formulation in service delivery at national and county government. National government institutions might benefit, through a set of decision support instruments, of improved ability to manage available water resources.

The local community members are the key beneficiaries of this study. They might be informed about the various issues that are affecting water projects in the community. They might also be educated on how they can improve their social lives through active participation in water projects as key stakeholders.

The findings of this study might assist non-governmental organisations in finding out whether water projects are bringing in positive transformation of the community, learn from previous mistakes and improve service delivery as well as for donor support of other projects. They might also have access to improved decision support instruments for planning, programming and implementing their response to water scarcity. The study might contribute to future and existing academic research works, similar to or further to this study.

### **1.9 Delimitation of the Study**

This study focuses on the influence of implementation of water projects on social development. The key variables that are given more attention include types of water projects, funding agencies, social-cultural practices, and stakeholder participation. These variables will be investigated on how they influence social development in remote areas. Geographically, this study will be delimited to Todonyang ward in Turkana County. The target population includes local community members, community leaders, water committees' members and non-governmental organisations representatives operating in the area.

### **1.10 Limitation of the Study**

Due to the vastness of the area, it may be challenging to get hold of many respondents. Therefore, the researcher will mitigate this by reducing the area of study. It will also be very expensive to conduct the research; as large areas need to be covered using vehicles to reach the respondents. Another limitation that may be experienced in the data collection process is a communication barrier. This is whereby most of the local community members are not conversant with English language. As such, to overcome this challenge the researcher used locals who understood both English and the local language in getting information from government leaders, water committee members and non-governmental organisations representatives.

### **1.11 Definition of Significant Terms Used in the Study**

**Funding agencies:** these have been used to mean any public or private granting agencies which have provided funding to community water projects for the social development of a community.



**Social Development**-has been used to refer to the improvement of individuals and community wellbeing in society in order to reach their full potential. In this study context social development is seen in terms of how the influence of community water project is bringing about the practise of crop farming, increased supply of safe water and water point, increased human settlement near water points, less cross-border conflict, an increased cross border trade and the improved health and education in the area.

**Stakeholder participation:** this is the process by which projects involve members directly in the decisions it makes that can influence the implementation of its decisions.

**Types of water projects:** has been used to mean all available man-made sources of water such as rock-dams, earth-pan dams and boreholes.

### **1.12 Organization of the Study**

This study is organized into five chapters. Chapter one contains the introduction to the study. It presents background of the study, statement of the problem, purpose of the study, objectives of the study, research questions, significance of the Study, delimitations of the study, limitations of the Study and the definition of significant terms. On the other hand, chapter two reviews the literature based on the objectives of the study. It further looked at the conceptual framework and finally the summary. Chapter three covers the research methodology of the study. The chapter describes the research design, target population, sampling procedure, tools and techniques of data collection, pre-testing, data analysis, ethical considerations and finally the operational definition of variables. Chapter four presents analysis and findings of the study as set out in the research methodology. The study closes with chapter five which presents the discussion, conclusion, and recommendations for action and further research.

## **CHAPTER TWO**

### **LITERATURE REVIEW**

#### **2.1 Introduction**

This chapter presents a discussion on the review of literature on the influence of the implementation of community water projects on social development. The literature presented is based on the key objectives, which include the types of water projects, funding agencies, social-cultural practices and stakeholder participation and how they influence social development. The main sources of literature include books, journal articles, web articles, and online digital libraries. This chapter is presented based on the following areas: theoretical framework, empirical review, conceptual framework, and summary.

#### **2.2 Social Development**

Social development is an approach of supporting social wellbeing. It can be realised when communities or individuals are able to live and sustain their wants with little challenges throughout their lives. It can be enriched through social welfare programs and policies run by governments and non-governmental establishments in different countries depending on the necessities of the population (Midgley, 1995). The needs can vary as each location has diverse geographical and topographical features that might affect resource availability. Social Development conveys the voices of the underprivileged in societies into development processes by the creation of evidence-based strategies and programs to conduct appropriate social risks investigations such as poverty (World Bank, 2020). According to the World Bank (2000) there is a great need by governments and non-governmental organisations to increase partnerships with communities in urban and rural settings and handover decisions of development and resources to improve societies livelihood. Global challenges such as climatic fluctuations, the lack of sufficient food, environmental and resources protection, global delinquencies and combating corruption, continuing investments in infrastructure and development, international trade and investments, urbanization, pandemic diseases and infectious diseases are some of the challenges to social development (Sardak, Korneyev, Simakhova and Bilskaya, 2020). Therefore, it is necessary that in order for societies to develop, social institutions should take all these factors into consideration to propel societies into being self-sufficient and experience a drive towards social development.

In today's African society, it is indispensable for communities and societies to have adequate levels of education, health care, harmonious social interaction, safe drinking water and social security (Tarrass & Benjelloun, 2012). With these needs met, communities experience a collective sense of social well-being. Social development in the 90s in the African continent was dominated by multiple shifts which, in some countries, frequently have run concomitantly: from war to peace, from one-party rule to multi-party governance, from command economies and service delivery predominantly run by governments (Overview of Economic and Social Development in Africa, 2020) hence resulting into very unstable economies and poor social amenities in the African continent. According to the United Nations Commission for Africa (2020) there is a need for African States to embark of reforms economic, political, infrastructural, social and cultural reforms to bring about social development in the continent.

Kenya faces a lot of social development challenges such as unemployment, poverty, disease, poor infrastructures such roads and constant internal and cross-border conflict among the communities (Mwenzwa & Misati, 2014). The government continues to implement reforms within the different government structures, to implement land reforms, increase development projects, improve human resources and ensure security for its citizens towards social transformation and development of the country ("Kenya Vision 2030", 2007). Currently Turkana County and to an extent Todonyang area receive some form of support in terms of schools to improve on education, dispensaries to cater for health related issues (Yakulula/MCSPA, 2018). The government through the Turkana county government and in partnership with other non-governmental organisation are all working towards the implementation and delivery of the Kenya Vision 2030 to ensure the areas develops.

Kamau (2014) factors influencing successful implementation of community based projects: a case of food security projects in Kiambu County. The objectives of the study were to investigate if Community participation management of funds, institutional capacities and sustainability influence successful implementation of community based projects. Four research questions were formulated to guide the study. The target population for this study consisted of 141 project leaders in community based projects in Kiambu County. The research used a descriptive survey design, stratified random

sampling technique in selecting the projects and purposive sampling in selecting the key respondents. Data was collected using structured questionnaires and Statistical package for social sciences (SPSS) was used to analyze data that was then presented in tables, bar charts and percentages. The findings showed that community participation, management of funds and institutional capacity are paramount for community based projects to accomplish their mandate. Planning for projects sustainability is also conducive for successful implementation of community based projects. Recommendations drawn from the analysed data were community participation should be improved, provision of training in proper management of funds for project leaders and involvement of project members. Planning for project sustainability and increasing institutional capacity in community based projects through periodic trainings was also found important for project's success.

Ali (2018) investigate the determinants of community participation in the implementation of development projects a case of Garissa Sewerage Project. Four research questions were formulated to guide the study. This study employed a descriptive survey research design. The sample comprised of 138. Data were collected through questionnaire and interview guide. Findings revealed that community members were unaware about the of the Sewerage project. The local members were of the opinion that the development projects undertaken in their locality had not been implemented through the participation of all. The study also found that even the local leaders were not involved in project planning and implementation. It was also revealed that donors made decisions about developmental projects while the local members disagreed that they felt dissatisfied with the decisions made by the management of the development projects. Based on the findings, the study concluded that there were factors affecting community participation in Garissa Sewerage development projects. The study also concluded that members did not participate in planning of Garissa development project. The study also concluded that even the local leaders were not involved in project planning and implementation as indicated by majority. It was also concluded that community members viewed that opinions of every one were not heard and respected. The study also concluded that decision making influence community participation in Garissa Sewerage development project. The community around were not involved in the management of Sewerage development projects.

Adek (2016) purposed to find out the determinants of successful projects implementation in Mombasa county; Kenya. The study was guided by five objectives that seek to identify the extent human factor, project management support, financial resources, socio-economic factors and politics influence projects implementation in Mombasa County, Kenya. A descriptive research design was adopted for the study. In the study purposeful sampling was used in accordance to the characteristics the elements in the population possess. The research targeted managers/employees handling county development projects in Mombasa County. The target population was about 3, 200 but a population sample of 80 was used due to the time limitations and financial constrictions. A pilot study was conducted to check the instruments reliability and validity. Data was collected using a structured questionnaire which was administered personally, via e-mails, enumerators and pick them after they had been filled. Data was coded and analysed using the SPSS. The data was analysed and the variables correlated to check the relationship of data. A regression model was also fitted to check the changes in the dependent variable that can be explained by variations in the independent variables. The study found that just like in any other part of the world, the stakeholders have an influence in the implementation of infrastructural projects in Mombasa County, The researcher recommends that the stakeholders should be involved and consulted from the beginning of projects idealization, identification, resourcing, planning, implementation and in the monitoring and evaluation process. The researcher recommends that governance should be paramount in projects success. The local politicians, the local and national leaders should keep politics, nepotism, tribalism and corruption out of projects. This way, the government will be able to link well with other bodies and make projects' success a reality.

### **2.3 Types of Water Projects and Social Development**

Safe drinking water is drawn from freshwater sources, which represent only 2.5% of the 1.4 billion cubic kilometres of water covering the earth (UNICEF, 2010). Water is among the most essential needs that nature provides to sustain life for plants and animals. The total quality of freshwater on earth could satisfy all the needs of the human population if only it were evenly distributed and easily accessible (Stumm, 1986). Types of water projects in the study have been used to mean all available man-made sources of water such as rock-dams, earth-pan dams and boreholes. The funding of

these projects is primarily due to the alkaline quality of lake water, which makes it unfit for human, agricultural and animal use.

Water is an essential resource that is used in many ways at different levels that attribute to social, spatial, and organizational problems. The fact water is not accessible and evenly distributed to all the human population; results in a variety of social contentions (McDonald & Kay, 1988). Kenya was ranked the fifth among the most water-poor countries in the world; this was based on total and per capita water availability in selected countries (Forkasiewicz & Margat, 1986). Todonyang being one of the areas in Turkana County is a good example of areas with low water supply. This study demonstrates the importance of availability of water to bring about social development and what the contrary can do to impede social development.

Ademiluyi and Odugbesan (2008) carried out a study entitled “Sustainability and impact of community water supply and sanitation programmes in Nigeria: An overview”. The study found that low water supply derails the economic growth and community sustainability of the Nigeria people. The study also found that water and sanitation programmes are limited because many of them are ill conceived and are abandoned prematurely due to numerous attitudinal, institutional and economic factors. This study is effective as it highlights how water sources affect water supply and the impact it has on social development. Evidently, it can be noted that lack of sustainability in the sense of service delivery and upkeep of services affects social development of any area just as it is in the case of Todonyang.

Akine (2011) indicates that water projects such as building of dams is critical in improving water sources. He states that these projects are meant to enable the community members to have ease in accessing freshwater for their human consumption as well as their livestock. In this aspect, it can be noted that the lack of water is a major problem for all the Turkana community and the construction of dams for storing rainwater throughout the year, is a solid answer to their problems. This report study is suitable as it highlights that building of dams improves water sources for the community members hence promoting growth and development, which in turn fosters social development. The building of water sources such as dam and boreholes can improve water availability in Todonyang.

## **2.4 Water funding agencies and Social Development**

In the Macmillan dictionary (2006), funding is defined as money that an organization provides for a specific purpose. According to Blair Commission Report (2005) on the social impact of the Tanzania Water Sector Project for the Millennium Challenge Corporation of 2011-2015, considerable proportions of urban residents in Tanzania lack adequate access to reliable, safe water supply, which has far-reaching impacts on health, commercial activities, and human capital development. This was attributed to low funding and lack of prioritisation by the National government. In recommendation the report proposed for an increased funding from donors and the government to surplus the deficit to improve water accessibility.

Mweru, Simuyu and Omete (2014) carried a study on the effects of devolved funding on socio-economic welfare of Kenyans: a case of constituency development fund in Kimilili, Kenya. The study used descriptive survey design. It found that that CDF plays an important role in social-economic aspects of the lives of the locals and calls for policymakers to improve on the management of the devolved funds on water projects. This study shows that water CDF funds in form of the Water Services Trust Fund have improved the development of water and sanitation in Kimilili. Water Funding is important in fostering community social development in promoting social wellbeing of Kimilili. This study is important in reference to the study being carried in reflection on water funding.

Kishindo (2000) in his study on community project funding in Malawi under the Malawi social action fund (Masaf) demand-driven approach: potential for perpetuating imbalances in development states that funding is an important aspect in promoting social development. Funding of Piped water schemes such as the Zomba Rural Piped Water Scheme, and Mpira Water Project which covers Ntcheu and Balaka district are critical in promoting, providing economic and social infrastructure to the largest proportion of the country's population, which is rural, given its limited financial resources.

None governmental organisations such as the Missionary Community of Saint Paul the Apostle(MCSPA) based in Turkana under the Catholic Church Dioceses of Lodwar, Oxfam, Food and Agriculture Organisation (FAO), and the United Nations have engaged in the funding and implementation of water infrastructures in Todonyang and

other parts of Northern Turkana. The government of Kenya plays a principal role in ensuring availability and equitable distribution of water allocated funds to most areas in the country, especially those prone to frequent droughts. The Kenya Vision 2030, under challenges and opportunities, highlights the urgency of addressing: water scarcity, water security, catchments management, and better water quality, increase the amount of irrigated land, low-level infrastructure development and water resource monitoring (Kenya Vision, 2030). The 2015 National budget has allocated 13 billion to boost irrigation farming (Walloga, 2015); supposedly this will be equitably distributed to meet the vision 2030 water issues.

A study on the effects of water shortage on health and development conducted; found that the lack of access to safe drinking water resulted in inadequate sanitation and poor hygiene (Tarrass & Benjelloun, 2012). Tarrass and Benjelloun (2012) found that lack of enough funding was the major contributor to poor water planning that promoted unsafe water, inadequate sanitation, and even poor hygiene. The findings of this report, does not indicate how funding affects social development hence not effective. However, what can be borrowed from the study is that the availability of funds for water projects still remains a big challenge to both non-governmental organisations and government in many countries and regions just like Todonyang. The study examines that there is still high demand for water infrastructure in the area.

## **2.5 Stakeholder Participation and Social Development**

A stakeholder refers to a person, a group of people or an organisation that has interest or concern in development activity, project or programme. (Abercrombie, 2000). Participation according to Macmillan dictionary (2006) means the process of taking part in something. A study conducted by Emeka (2015) examined the effects of migration by nomadic farmers in the livelihoods of rural crop farmers in Enugu State, Nigeria. The study used purposive and random sampling techniques. The study found that Nomads in Enugu practice crop farming or are engaged in the grazing of animals. This social practice is based on the amount of rainfall, as Nomads move the moment there is lack of water and grassland. This movement affects projects a lot hence does not have impact on social development.

Stakeholder participation leads to empowerment of the society, the development of empowerment centres helps individuals in developing a critical understanding of their



circumstances and social reality (Davids et al., 2009). Wariua-Nyalwal et al. (2013) carried out a study on factors that affect stakeholders' participation in corporate social responsibility activities in Kenya roads board, Nairobi County. The study adopted a cross-sectional survey research design and applied a mixed method of quantitative and qualitative approaches. The study findings indicated that the choice and number activities carried out annually enhances the level of stakeholders' participation in corporate social responsibility activities. The reviewed study is important to this study as it demonstrates that stakeholders involved in many programs that can foster community development will enhance social development and improves social wellbeing of the society. The study provides evidence that stakeholder participation with the system will lead to greater social improvement.

An empirical study on the influence of stakeholders' participation in the performance of road projects at Kenya national highways authority was conducted by Mwaura and Ngugi (2014). The study used a descriptive research design. It found that stakeholder participation such as management support is critical in overseeing funding approvals. Furthermore, enough financial resources, donor support, availability of human resource and provision of resources on time influence positively to the performance and this can be noted as stakeholder participation in the societal development. The reviewed empirical study is not suitable for this study, as it does not show how stakeholder involvement in community development impacts social development. However, stakeholder participation can be borrowed from the study on how it helps community social development in empowering marginalized groups such as Todonyang community.

First, people often tend to resist innovations or measures that are imposed on them. Second, People participate in activities in order to bring a positive change in their life, normally permitting mobilisation of local resources and use in the development of the community. Third, when members participate, their local capacity is built and acts as a catalyst in establishing a partnership between non-governmental organisations, the government and the community. Fourth, participation unites the community and encourages a sense of purpose and belonging (World Bank, 2010).

The construction of Ataturk Dam in 1983 in South-Eastern in Turkey, resulted in changing the lifestyle of the local community, increased employment during its

construction period, most of the labourers initially unskilled got training to become skilled workers and became entrepreneurs as well as got employment in construction of dams as skilled labours (Torjada & Cecilia, 2004).

Similarly, water projects done in Todonyang area, have continuously encouraged local participation: most locals come up with sites where dams and boreholes are needed, organise teams to be employed as labourers in the construction of the various water infrastructures, as well as provide security at sites to ensure projects come to successful completion. As a result of this participation, members of the Todonyang community, have acquired skills and knowledge of water infrastructure logistics and construction, for example the community at Naenae Kabaran in Todonyang have built a rock catchment dam using acquired skills, readily available construction materials such as stones and sand, as well as local contractors and labour (World Bank, 2010).

Community participation is crucial at all levels of a project, from inception to termination. A study by Khwaja (2010) examines the effects of community participation on project performance. The study uses primary data on development projects in Northern Pakistan to provide empirical support to illustrate. His findings do provide evidence supporting the theoretical claim, that greater community participation in non-technical decisions is associated with higher project outcomes. They found that the performance of water systems was markedly better in communities where households were able to make informed choices about the type of system and the level of service they required, and where decision making was genuinely democratic and inclusive. In contrast, projects that were constructed without community supervision and where project management was not accountable to the community, tended to be poorly constructed by a private contractor (United Nations Development Programme, 2006).

The government is the principal entity that ensures its citizens have adequate basic needs. It provides services to the citizens through established ministries such as Environment, Water & Natural resources, Health ministry, Transport and Infrastructure and Devolution and Planning (Official Government Website, 2018). The development comes about when a government puts in place key investment infrastructures such as roads, communication, water and sanitation, education and health facilities. These will help increase accessibility to the whole region paving way for social development.

The Kenya Vision 2030 is a good government initiative put in place as a long –term development blueprint for the country (Office of the Prime Minister, 2012). In order to achieve this Vision, the government requires needs to support Todonyang area through improving: road infrastructure, security, education and health facilities, water infrastructure and agriculture on the Todonyang Delta, citing that these are the main challenges faced by the local community. On 21<sup>st</sup> of August, the government through the Prime Minister launched a 20 billion Kenyan shillings irrigation project to cover 10,000 hectares in the area (Lomuria, 2012), however to-date there are no signs of implementation of the said initiative. This goes to show laxity in government implementation of proposed projects such as this that could have transformed Todonyang and the entire Turkana community in terms of food security.

The border between Kenya-Ethiopia at Todonyang has been officially opened (Bii, 2012). In order for the community to have controlled but free movement between the two countries and in-turn encouraging: cross-border trade and tourism that could result in social development and economic empowerment of the people. However, in order for the community to benefit from this initiative, the government needs to: deploy immigration staff at the recently constructed migration office at Todonyang to facilitate movement.

Insecurity in the area has made it very difficult for development projects for both government and non-governmental organisation personnel. For example, frequent attacks are experienced by the fishermen at the lakeshore on the border with Ethiopia (Madolo, 2014). The government needs to increase frequent police patrols along the two borders as well as increase security forces to help further contain security in the area. Government initiatives are a contributing factor towards social development of Todonyang area. With improved service delivery and joint efforts with non-governmental organisations in implementation of projects in the area, could enhance rapid social development making the community better than it is(United Nations Development Programme, 2006).

## **2.6 Theoretical Framework**

This section presents a review of theories related to the area under study. The key theory that has been given much attention in this study is the System theory, developed in the 1940s by Ludwig von Bertalanffy (Bertalanffy, 2013). System theory is defined as a

working hypothesis of which is to provide a theoretical model for explaining, predicting and controlling phenomena (Mwaura & Ngugi, 2014).

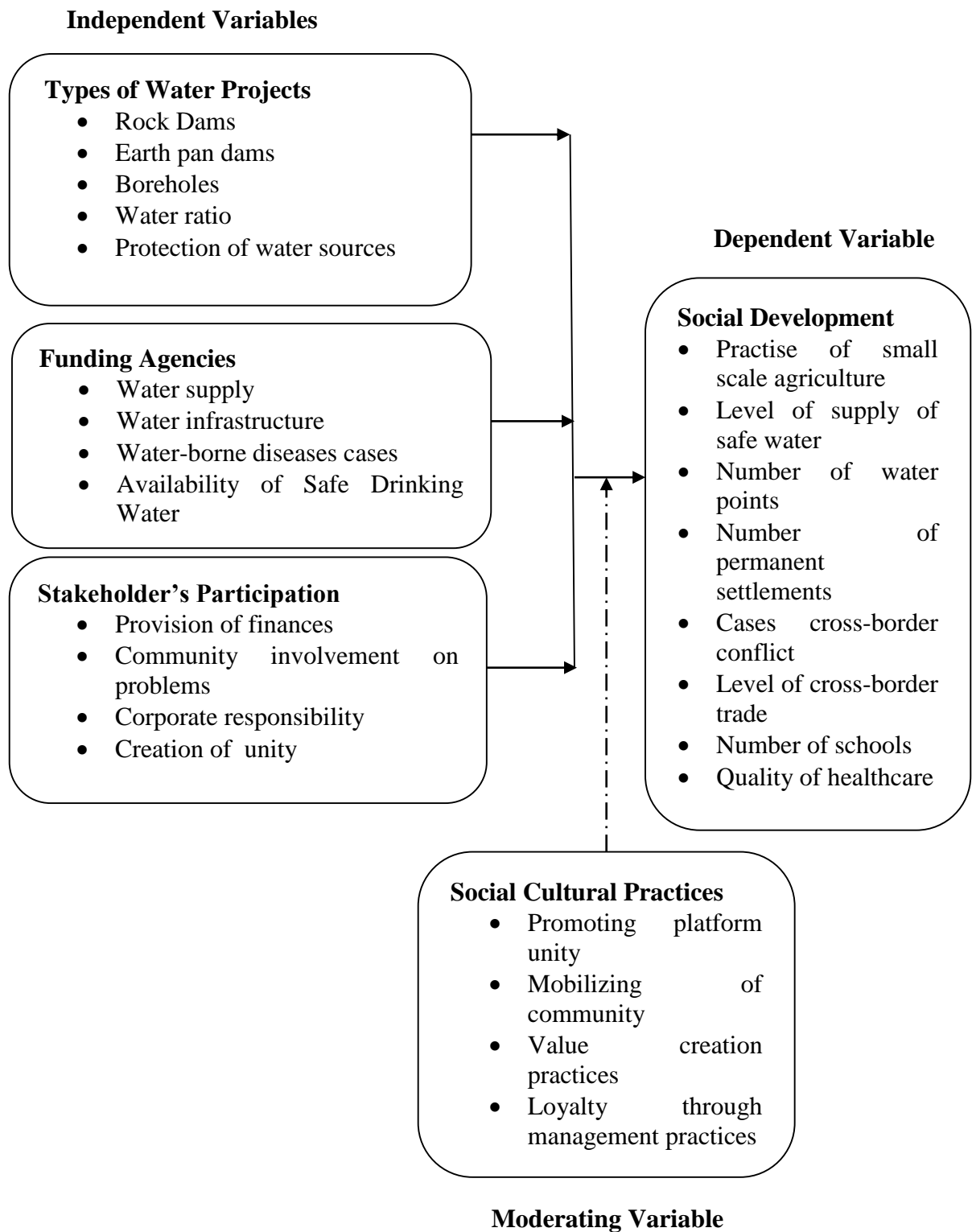
Systems are open to, and interact with; their environments and those they can acquire qualitatively new properties through emergence, resulting in continual evolution according to Ludwig von Bertalanffy (Mwaura & Ngugi, 2014). Systems need to be controlled as a failure in one system leads to failure in others. In this case, lack of funding and poor water source creates a gap in the implementation process thus affecting the accomplishment of the water projects (Forder, 2014). Project implementation requires good implementation systems in order to ensure there is smooth flow of activity such as enough funding, sources of water and full participation by every member. Water projects as a social product, it consists of individuals who cooperate within a framework, drawing resources, people and finances to produce products and implement it (Mwaura & Ngugi, 2014).

Proper structures of water project will ensure efficient and effective management of the projects and other resources for maxim outputs. While this theory addresses the research question governance in the performance of the projects, the theory explains the important role that governance play as part of the overall system that makes up. The concepts systems of projects in an organization underlie the different disciplines providing a basis for their unification. Systems concepts include system-environment boundary, input, output, process, state, hierarchy, goal-directedness, and information. This concept helps in the implementation of water project that leads to the social development of the society. Systems are important in the smooth running of any given projects, plan and even organisation (Marshall, 2011).

In the case of the Social development of Todonyang, water projects are implemented based on the support system like adequate finances, good social-cultural environment and practices, stakeholder support and involvement and many more. The strengths of system theory are that it deals with environmental complexity by making simplified 'models' of the environment. Its weaknesses are that it is complex hence; making it inefficient in the analysis of how various aspects works (Charlton & Andras, 2014).

## **2.7 Conceptual Framework**

According to Gakuu, Kidombo and Keiyoro. (2018), a conceptual framework is a model of presentation where researchers conceptualize or represent the relationship between variables in the study and show the relationship graphically or diagrammatically. In this context, conceptual framework is a hypothesized model of identifying factors affecting the impact of water projects on social development in Todonyang, Turkana. Figure 1 shows the influence of implementation of community water projects on social development in Todonyang, Turkana County.



**Figure 1: Conceptual Framework**

As it has been conceptualised, there are indeed a number of factors affecting the influence of implementation of community water projects on social development in

Todonyang. These factors as shown by the figure include but may not be limited to types of water projects, funding agencies, stakeholder's participation and social cultural practices. As such, these issues needed to be investigated keenly to help improve and foster the social development of the community. The framework also conceptualized that water projects play a key role in development of any given community survival. Wells and dams as water projects should be funded and built to improve water sources that will promote access to clean water that will help to enhance social development.

Water funding agencies are also a very important factor in community existence as a lack of funding reduces the level of water project development. Low water funding causes Todonyang community to use unsafe water hence cause outbreak of waterborne disease. Water funding plays a critical role in improving livelihood of Todonyang, hence affecting social development.

Stakeholder's participation such as government and community's involvement are powerful tool that promotes sustainability in social development. Stakeholder participation enables mobilization of funds, manpower and many more. In this case, Stakeholder participation is critical in the implementation of water projects for improving social developments in Todonyang.

## **2.8 Knowledge Gaps**

Granting that attempts have been made to explain about social development, majorly from reviewed studies (Herrera, 2013; Midgley,1995; Mweru, Simuyu & Omete,2014; Wariua-Nyalwal, Patricia et al., 2013) have centred their studies different aspects that could lead to social development, largely ignoring the fact that implementation of water projects is a key contributor to social development. Below is a table of knowledge gaps summary.

**Table 2.1: Knowledge Gaps**

<b>Variable/Factor</b>	<b>Author</b>	<b>Study Title</b>	<b>Findings</b>	<b>Knowledge</b>	<b>Focus of the Study</b>
Social Development	Midgley (1995)	Social Development: The Developmental Perspective in Social Welfare.	Found a positive relationship regarding development, there was however more emphasis on social welfare in propelling social development.	Conceptual Methodological	The study sought to determine the influence of implementation of community water projects on social development in Kenya
	Yakulula (2018)	Peace celebration at Todonyang.	There is some contextual relationship and a positive aspect of the study about peace being important aspect of social development.	Contextual Methodological	The study sought to determine the influence of implementation of community water projects on social development in Kenya
Types of Water projects	Stumm (1986)	Water an Integrated System.	This focused more on water being distributed equally to all to sustain life. The relationship is that if it is available to all then it will spur social development.	Conceptual Methodological	The study sought to determine the influence of types of water projects on social development
	McDonald and Kay (1988)	Water Resources Issues & Strategies.	There is a focus on human control agencies and the physical water resource systems available. The lack of water results in social contentions thus posing the	Conceptual Methodological	The study sought to determine the influence of types of water projects on social development



			danger of society not developing.		
	Akine (2011)	Josephat Akine, Constructor of Dams and Agent of Evangelization.	The importance of construction of dams and other water infrastructure are necessary to sustain the nomads.	Conceptual Contextual Methodological	The study sought to determine the influence of types of water projects on social development
Funding agencies	Blair Commission Report (2005)	Regions: Sub-Saharan Africa African poverty and stagnation is the greatest tragedy of our time.	There is a moral duty for the developed world to African countries in order for these countries to develop. It however looks at a funding holistically rather than one aspect of a projects.	Conceptual Methodological	The research examined the influence of water funding agencies on social development
	Mweru, Simiyu and Omete (2014)	The effects of devolved funding on socio-economic welfare of Kenyans.	Found a correlation in terms of funding to improve socio-economic well-being.	Conceptual Methodological	The research examined the influence of water funding agencies on social development
	Kishindo (2000)	Community project funding in Malawi under the Malawi social action fund.	It is important to fund water projects in order to speed development, however it has to be equitable to all in society.	Conceptual Methodological	The research examined the influence of water funding agencies on social development
	Walloga (2015)	Sh13bn to boost irrigation farming.	There is a correlation between funding by the government and socio-economic development of the area.	Conceptual Contextual Methodological	The research examined the influence of water funding agencies on social development

	Tarrass and Benjelloun (2012)	The effects of water shortages on health and human development.	It does not clearly talk about water funding, however the lack of water results in poor health and human development which are connected to social development	Conceptual Methodological	The research examined the influence of water funding agencies on social development
Stakeholder participation	Ademiluyi and Odugbesan (2008)	Sustainability and impact of community water supply and sanitation programmes in Nigeria.	Found that everyone should be involved and more so the community so as to ensure sustainability of projects.	Contextual Methodological	The study investigated the influence of stakeholder participation on social development
	Davids, I. Theron, F. and Maphunye, J. (2009)	Participatory Development in South Africa: A Development Management Perspective.	Found that people should be pilots of their own development hence their participation in projects are a key factor to social development.	Conceptual Methodological	The study investigated the influence of stakeholder participation on social development
	Mwaura, M., & Ngugi, K. (2014).	Factors affecting performance of community based Organizations projects.	The study focused more on the factors affecting the performance of community based water projects in Kenya.	Conceptual Methodological	The study investigated the influence of stakeholder participation on social development
	Torjada and Cecilia (2014)	South-Eastern Anatolia Project: Impacts of the Antruk Dam. Water as a Focus for Regional Development.	Focus in more on access to fresh water as a cause of conflict, however it fits in this study as there is need to involve all stakeholders	Conceptual Methodological	The study investigated the influence of stakeholder participation on social development

			when coming up with projects communities.		
	Khwaja (2010)	Is increasing community participation always a good thing?	The focus is that including community participation in nontechnical participation in projects rather than technical participation.	Conceptual Methodological	The study investigated the influence of stakeholder participation on social development
Social-cultural practices	Emeka (2015)	The effects of migration by nomadic farmers in the livelihoods of rural crop farmers in Enugu State, Nigeria.	It focuses on the effects of migration by nomadic farmers on livelihoods of the rural crop famers especially when there is lack of water.	Conceptual Methodological	The study assessed the influence social-cultural practices on social development
	Rhodes (2013)	Civilisation and environmental effects of Mongolia's transition from a pastoral to a market-driven economy.	Focuses on the effects of effects of nomadism on market driven economy. It correlated with this study as if shows how waters projects cannot be fully accomplished as people who are expected to benefit are always moving from places to place.	Conceptual Contextual Methodological	The study assessed the influence social-cultural practices on social development
	Herrera (2013)	Pastoralist Conflict in the Horn of Africa: the Turkanas-Dassenech case.	Focuses on armed conflict due to lack of adequate resources. This fits in this study as water projects are key to reduction of conflict as pastoralist heavily rely	Conceptual Contextual Methodological	The study assessed the influence social-cultural practices on social development

			on water availability for their subsistence.		
	Fan, Wenjun, Li, Zhang and Li. (2014)	Impacts of nomad decentralization on social and ecological systems at multiple scales in Xinjiang Uyghur autonomous region, China.	Focuses on government support to nomads through initiation of projects to reduce poverty and improve the lives of the people.	Conceptual Methodological	The study assessed the influence social-cultural practices on social development
	Siefulaziz (2004)	Baseline Study for the Ethiopian Side of the Karamoja Cluster.	The study focuses on the cause of conflict in the area; one of the biggest things is the lack of enough resources that will allow the local community explore alternatives other than heavily being pastoralists.	Conceptual Methodological	The study assessed the influence social-cultural practices on social development

## **2.9 Summary of Literature Review**

Social development has been viewed as an approach to promoting people's welfare or social well-being. Social welfare is a condition brought about when the community involved experiences a high degree of social wellbeing by accepting and incorporating assistance provided to them by non-governmental organisations and the government through projects set to improve their living conditions (Midgley, 1995). Further, water is an essential resource that is used in many ways at different levels that attribute to social problems and therefore there emerges a need for looking at types of water projects such as the rock-dams, earth-pan dams and boreholes. Upon, implementation and execution of these water projects, funding is needed in order to reach those who lack adequate access to reliable, safe water supply; and that is where the water funding agencies come about. Stakeholder participation in these projects leads to empowerment of the society, the development of empowerment centres helps individuals in developing a critical understanding of their circumstances and social reality (Davids et al., 2009). In regards to water projects, social-cultural practices such as nomadism can be seen to have great impact towards implementation of sustainable development. Most projects such as waters projects cannot be fully accomplished as people who are expected to benefit are always moving from places to place.

## **CHAPTER THREE**

### **RESEARCH METHODOLOGY**

#### **3.1 Introduction**

In the quest to demystify the meaning of methodology in research, Marshall (2011) argues that methodological principles in the social sciences ensure that we can defend our findings. Methodological principles are guidelines that researchers agree and rely on to give us acceptable research practices. This chapter presents the research design and methodology that was used in this study. It is presented based on the following subsections: research design, target population, sample and sampling procedure, data collection instruments, pilot testing of research instruments, reliability and validity of research instruments, data collection procedure, data analysis techniques, ethical considerations and operational definition of variables.

#### **3.2 Research Design**

McMillan and Schumacher (2001) define research as a plan for selecting subjects, research sites, and data collection procedures to answer the research question(s). The design shows which individuals was studied, when, where, and under which circumstances they were studied. The research design that was adopted in this study is the descriptive survey research design. This design involved the collection of data concerning the opinions of the Todonyang community members and non-governmental organisations on how water projects in the area have contributed towards social development.

According to Kothari (2014), descriptive research studies are concerned with describing the characteristics of a particular individual, or of a group. The descriptive survey design was also appropriate so that the researcher got information from those who have practical experience with the problem to be studied. The questions asked, are aimed at testing the main assumption while keeping in focus the purpose, objectives and other research questions relating to this study.

Survey research, according to Gakuu, Kidombo and Keiyoro (2018), is a method of descriptive research used for collecting primary data based on verbal or written communication with a representative sample of individuals from a target population. Survey research is appropriate for this research because it assists to explain and discover the existing status of variables. It is also used to collect data from big

populations that are difficult to observe directly. The descriptive survey design was adopted in this research.

### 3.3 Target Population

Any scientific research targets a given population through which various data collection methods are used to get the desired or the required data for analysis (Barton, 2001). The target population as indicated by Gakuu *et al.* (2018) is the larger group to which one hopes to apply the findings. The target population for this study constituted of 18,000 local community members, 17 community leaders, 8 water committees members and 5 representatives of non-governmental organisations operating in the Todonyang town, Turkana County. This population is targeted in this study in that they are expected to provide valuable information related to the area under study. Table 3.1 shows the target population.

**Table 3. 1: Target Population**

	<b>Frequenc y</b>	<b>Percentage</b>
Local community members	18000	99.8
water committees members	8	0.0
Representative of non-governmental organisations	5	0.0
Community leaders	17	0.1
<b>Total</b>	<b>18030</b>	<b>100.0</b>

### 3.4. Sample and Sampling procedure

According to Gakuu *et al.* (2018) the researcher must decide the type of sample used i.e., he must decide about the technique to be used in selecting the items for the sample. In fact, this technique or procedure stands for the sample design itself. There are several samples designs out of which the researcher must choose one for his study. Obviously, he must select that design which, for a given sample size and for a given cost, has a smaller sampling error.

#### 3.4.1 Sample Size

Gakuu *et al.* (2018) define sample size as any group from which information is obtained or part of a selection of target population. This study used sample size determination formula for definite population (Nassiuma, 2000) to determine the sample size of the local community members in Todonyang. This sample size determination formula was used in this study because Todonyang populations of interest are large and scattered

over a large geographic area making it contact all members to be time-consuming and expensive. The formula therefore, made the researcher select a sample to represent a population (Gakuu et al., 2018).

Since the target population is known, this study employed the following sample size determination formula for a finite population (Nassiuma, 2000) to determine the sample size:

$$n = \frac{NC^2}{C^2 + (N-1)e^2} \dots\dots\dots (1)$$

Where n = sample size, N= population size C = Coefficient of variance, e=standard error of sampling.

- N=Target Population (18,000)
- c = Coefficient of variance (30%)
- e= Error Term (2%)

The sample size for the community members in Todonyang was thus determined using a population of 18,000.

$$\begin{aligned}
 n &= \frac{(18000) (0.3)^2}{((0.3)^2 + 18000(0.02)^2)} \\
 &= 222.234 \\
 &= 222
 \end{aligned}$$

**Table 3. 2: Summary of the Sample Size**

	<b>Target Population</b>	<b>Sample Size</b>
NGOs representative	5	5
Community leaders	17	17
Water committees	8	8
Community members	18,000	222
<b>Total</b>	<b>18030</b>	<b>252</b>

To arrive at the individual sample from the community, the following formula was used:

$$n_i = \left(\frac{n}{N}\right) N_i \dots\dots\dots (2)$$

Where: n = is the sample size; N = New total population size, N<sub>i</sub>= Individual population size (community members).



### **3.4.2 Sampling Procedure**

A simple random sampling procedure was used to arrive at the representative sample of the local community members. They picked out randomly and those selected were involved in the study. On the other hand, purposively sampling procedure was used to pick the non-governmental organisation representative, Community leaders and Water committees who formed the key informants of the study. Moreover, they are also expected to provide adequate and relevant information on the study to be carried out.

### **3.5 Data Collection Instruments**

The key data collection instruments that were used in this study include a questionnaire for the local community members and an interview guide for the non-governmental organisation representatives. The questionnaire was used because they are faster, less costly and cover a wider area of sample frame. The questionnaires targeted those directly involved with the organization mostly the staff. The validity of the instrument was established by having the supervisor review the items in order to establish whether they were appropriate and have the ability to provide reliable results.

The questionnaire was used to collect data from the community members. The questionnaires are considered appropriate for this study because of the following reasons. a) Its potentials in reaching out to a large number of respondents within a short time, b) able to give the respondents adequate time to respond to the items, c) offers a sense of security (confidentiality) to the respondent and d) it is objective method since no bias resulting from the personal characteristics (Owens, 2002).

The questionnaire consisted of a number of questions printed or typed in a definite order on a form or set of forms. It is considered as the heart of a survey operation (Kothari, 2014). The questions in the questionnaire consisted of both closed and open-ended questions. The questionnaire was structured based on the research objectives.

On the other hand, an interview guide was used to collect qualitative data from the non-governmental organisation representatives. The guide was divided into two main parts. These included background information of the representatives and the influence of implementation of community water projects on social development in Todonyang area.

### **3.5.1 Pilot Testing of Research Instruments**

The pilot study was done to ascertain the research tool reliability and validity. The pilot survey used 25 questionnaires which were 10% representation of the sample size. After a day, the participants were asked to give responses to similar questions although this time there was no prior notification. This helped pinpoint any changes in the responses given using both times. Aspects of the questionnaire such as question content, wording, sequence, form and layout, question difficulty and instructions were found from the pre-test and revised before administering it to the study respondents.

### **3.5.2 Validity of Research Instruments**

Validity refers to the extent to which a research instrument measures what it is designed to measure. There is content (face and sampling validity), construct and predictive validity (Ogula, 1998). To ensure that the instruments are valid, content validity was used. Two experts in the field of research were consulted in order to verify whether the instruments are valid. After the construction of the questionnaires, the researcher reviewed each statement with the help of these experts and assesses the extent to which the items are related to the topic at hand. Where there is an agreement among the experts, the instrument was valid. Modifications were also made in the instruments based on the experts' observations.

### **3.5.3 Reliability of Research Instruments**

According to Gakuu et al (2018), reliability of an instrument refers to the extent to which a research instrument yields measures that are consistent each time it is administered to the same individuals. Gakuu et al (2018) observe that if a researcher administers a test to a subject twice and gets the same score on the second administration as the first test, then there is high reliability for the instrument used. If a measure is used many times with the same persons and the test is reliable, then it means the scores would be approximately the same.

To establish the reliability of the research instruments, the researcher carried out a pilot test of the instruments using another similar group with the same characteristics as the one targeted in the study. The reliability of the instruments was computed using split-half method with the help of SPSS. If the value found falls within the accepted levels (0.6-0.9), the questionnaires were held reliable (George and Mallery, 2003). Interview guides, being mainly open-ended, was not tested for reliability.

The reliability was expressed as a coefficient between 0 and 1.00; where the higher the coefficient, the more reliable the test is.

**Table 3. 3: Reliability Analysis**

	<b>Reliability Cronbach's Alpha</b>
Types of water projects	.846
Water funding agencies	.757
Social-cultural practices	.781
Stakeholder participation	.731

The findings indicated that types of water projects had a coefficient of 0.846, Water funding agencies had a coefficient of 0.757, social-cultural practices had a coefficient of 0.728 and stakeholder participation had a coefficient of 0.731. All constructs depicted that the value of Cronbach’s alpha are above the suggested value of 0.7 thus it can be concluded that the study was reliable to capture the constructs (Gakuu, *et al.*, 2018) and therefore no amendments were required.

### **3.6 Data Collection Procedures**

Prior to the data collection, the researcher collected all the necessary authorization documents. Once this is done, the researcher distributed the questionnaires to the local community members with help from the local authorities. The researcher made a personal follow up to ensure that all the questionnaires are collected. During the distribution of the questionnaires, the research organized for small meetings with the selected none governmental organisations' representatives to conduct the interview. The interview was conducted in a conducive environment while assuring the participants' confidentiality of the information provided.

### **3.7 Data Analysis Techniques**

Data Analysis is the practice of data entry, coding, and analysis to make understanding of information possible. According to Gakuu et al (2018), data analysis involves computation of certain measures together with searching for patterns of relationships that exist among data-group.

Data that was collected from the field was filtered, sorted and cleaned in line with research objectives. The data was then coded, and entered into and analysed using statistics software (SPSS, Version 25.0). Quantitative data was analysed using descriptive statistics. It involved calculation of percentages, frequencies, means and standard deviation. Thematic analysis entailed the creation of themes related to the

study variables. This was performed on the qualitative data provided by the open-ended parts in the questionnaire. The results were presented using tables.

Inferential data analysis was done using multiple regression analysis. The relationship between the independent and dependent variable was obtained using multiple regression analysis model. The multiple regression model often takes up the below equation= $\beta_0 + \beta_1X_1 + \beta_2X_2 + \beta_3X_3 + \varepsilon$

Where:-

Y= Social Development

$\beta_0$ =constant

$\beta_1, \beta_2, \beta_3$  and  $\beta_4$  = regression coefficients

$X_1$ = Types of water projects

$X_2$ = Funding agencies

$X_3$ = Stakeholder participation

$\varepsilon$ =Error Term

### **3.8 Ethical Considerations**

The following standards of behaviour linked to the respondents' rights were observed by the researcher: First, to deal with the respondents, they were made aware of the objectives of the study and their guaranteed secrecy of the information they provided. The NACCOSTI and University letter was used to get their informed participation consent. The researcher made sure that every respondent participates out of their own will with no coercion. Secondly, the study quantitative research methods were adopted for reliability, objectivity and researcher freedom. The researcher made sure that the ethics of the research are strictly observed while carrying out the study. Participants could voluntarily participate. The researcher observed privacy as well as discretion. The researcher explained the study objectives to the respondents and assures them that the information they will provide was used for purpose of academics only.

### 3.9 Operational Definition of Variables

Table 3.3 describes how various variables, indicators; measurement and what will be used for results.

**Table 3.4: Operationalisation of Variables**

<b>Objective</b>	<b>Variable</b>	<b>Indicators</b>	<b>Measurement</b>	<b>Scale</b>	<b>Data Collection Method</b>	<b>Data Analysis</b>
To establish whether the water projects have reduced the level of conflict in the area.	<b>Independent variables</b> Water projects: Dams, borehole, rivers and Lake	Reduced level of conflict for water resources	Increase in water infrastructures. The reduced death toll.	Ratios	Questionnaires. Focused group discussions. In-depth interviews.	SPSS. Thematic coding.
	Funding	Presence of NGOs and government implementing water projects.	Increase in the number of water infrastructures.	Nominal	In-depth interviews	Coding
	Nomadic pastoralism	Settlement	The number of houses.	Ratio	Questionnaires and In-depth interview	SPSS and Coding
To find out whether the water projects are boosting crop farming in the area.	Water projects: Dams, and borehole	Subsistence farming	Number of farms and types of crops produces	Nominal	Questionnaires and In-depth interviews.	SPSS and Coding

To establish government and NGO support for water projects in the area.	Funding	Presence of NGOs and government implementing water projects.	Increase in the number of water infrastructures.	Nominal	Questionnaire. In-depth interviews	SPSS and Coding
	Community participation.	Assisting government and NGOs in the provision of labour, site finding and securing sites.	Increase in the number of water infrastructures.	Nominal	Questionnaires and In-depth interviews.	SPSS and Coding
To know whether the water projects are sufficient.	Water sources: Dams, and borehole	Reduced level of conflict. Availability of freshwater.  Subsistence farming.  Human settlement.	The reduced death toll. The number of dams and boreholes. The number of farms and types of crops grown.  The number of housing units per village.	Ratio  Nominal  Nominal  Ratio	Questionnaires and In-depth interview	SPSS and Coding

## CHAPTER FOUR

### DATA ANALYSIS, PRESENTATION AND INTERPRETATION OF FINDINGS

#### 4.1 Introduction

This chapter presents the information processed from the data collected during the study to establish the influence of implementation of community water projects on social development in Kenya: a case of Todonyang, Turkana County, Kenya. Primary data was collected through questionnaires which were administered. The data was afterwards scrutinized based on the objectives of the study and the findings were presented in tables and in prose.

#### 4.2 Response Rate

The researcher administered 252 questionnaires. From these only 194 respondents were returned, which represented a response rate of 77 percent. This response rate was good, and representative conforms to Gakuu, et .al. (2018) stipulation that a response rate of 50 percent is adequate for analysis which meant that 77 percent was even better.

#### 4.3 Background Information

The study collected information on the general information of the respondents considered in this study. The basic characteristics were sex, age bracket, level of education, designation and working experience. The findings are presented in various sub sections.

##### 4.3.1 Sex of Respondents

The researcher asked the respondents questions concerning their gender. Their answers were tabulated in Table 4.1.

**Table 4. 1: Sex of the Respondent**

	<b>Frequency</b>	<b>Percent</b>
Male	132	68.0
Female	62	32.0
<b>Total</b>	<b>194</b>	<b>100.0</b>

From the findings, majority of the respondents were male as shown by 68 % while female respondents were 32%. This shows that the researcher was gender biased in data collection since data was collected from all the respondents regardless of the sex. The findings imply

that the male counterparts were more involved in social development in Todonyang, Turkana County than the female.

#### 4.3.2 Respondents Age Bracket

Respondents age bracket was also explored in this study where the respondents indicated to which age bracket do they belong. The findings are as shown in Table 4.2.

**Table 4. 2: Respondents Age Bracket**

	<b>Frequency</b>	<b>Percent</b>
20-30 years	34	17.5
30-40 years	35	18
41-60 years	63	32.5
60 years and above	62	32
<b>Total</b>	<b>194</b>	<b>100</b>

On the age of the respondents, majority of the respondents indicated that their age was between 41-60 years as shown by 32.5%, 32% were aged 60 years and above, 18% were aged between 30 and 40 years while 17.5% were aged between 20-30 years. This infers that majority of respondents interviewed are in between 41 to 50 years. However, data collection covered all the targeted age groups and hence data was rich of diverse opinions. Further, the results show that the elder people in Todonyang, Turkana County were the most involved with the social development projects.

#### 4.3.3 Level of Education

The respondents were requested to indicate their level of education. The findings for the level of education are presented in Table 4.3.

**Table 4. 3: Level of Education**

	<b>Frequency</b>	<b>Percent</b>
KCPE	132	68
Diploma	38	19.6
Degree	24	12.4
<b>Total</b>	<b>194</b>	<b>100</b>

On the respondents' level of education, majority of the respondents indicated to have attained KCPE as illustrated by 68%. Other respondents indicated to have attained a diploma as shown by 19.6% and degree holders were as shown by 12.4%. This implies that



most of the respondents had basic education to be able to respond to questions on the subject under study. This also implies that most of the community members of Todonyang were not very educated but were beneficiaries of social development projects.

#### 4.3.4 Designation of the Respondents

The respondents were asked to indicate their designation in the community. The findings are shown in Table 4.4.

**Table 4. 4: Designation of the Respondents**

	<b>Frequency</b>	<b>Percent</b>
Fishermen	24	12.4
Farmer	26	13.4
Shepherd	67	34.5
Peasant	40	20.6
Village leader	14	7.2
Business	23	11.9
<b>Total</b>	<b>194</b>	<b>100</b>

On the respondents' designation, most of the respondents indicated to be shepherd as shown by 34.5%. Others were peasants as shown by 20.6%, farmers as shown by 13.4%, fishermen as shown by 12.4%, business as shown by 11.9%, village leader as shown by 7.2%. This reveals that the researcher obtained most of the information for the study from the farmers. This implies that the farmers benefited most with the community water projects in Todonyang, Turkana County.

#### 4.3.5 Working Experience

The respondents were also asked to indicate their working experience. The findings are as shown in Table 4.5.

**Table 4. 5: Working Experience**

	<b>Frequency</b>	<b>Percent</b>
1-5 years	62	32
6-10 years	58	29.9
More than 10 years	74	38.1
<b>Total</b>	<b>194</b>	<b>100</b>

From the findings, most of the respondents indicated to have working experience of more than 10 years as shown by 38.1%, 1 to 5 years as shown by 32% and 6 to 10 years as shown

by 29.9%. This is an indication that most of the respondents were experienced enough with community matters to be able to respond to questions on the subject under study. Further, all the community members had an idea of social development projects in their area.

#### 4.4 Community Water Projects on Social Development

The respondents were requested to use a Likert scale of 1-5 and indicate the extent to which community water projects influence social development in Todonyang. The findings are shown in Table 4.6.

**Table 4. 6: Community Water Projects Influence Social Development**

	Mean	Std. Dev.
Lack of water projects	3.845	1.118
Inadequate funding agencies	4.016	0.723
Poor Social cultural practices	2.768	0.560
Lack of Stakeholder participation	4.356	0.707

From the findings, the respondents indicated that lack of stakeholder participation as illustrated by a mean of 4.356, that inadequate water funding agencies as illustrated by a mean of 4.016 and that lack of water projects as illustrated by a mean of 3.845 influence social development in Todonyang in a great extent. In addition, the respondents indicated that poor social cultural practices as illustrated by a mean of 2.768.

From the interviews, the interviewees said that the measures that can be put in place to improve implementation of community water projects in Todonyang include improving community awareness about the need for clean drinking water, ensuring all stakeholders are involved in implementation, improving resource mobilization strategies and avoid mismanagement of funds.

The respondents were asked to indicate the extent to which various factors affect social development in Todonyang. The findings are as shown in Table 4.7.

**Table 4. 7: Extent Various Factors affect Social Development**

	Mean	Std. Dev.
Lack of water projects	3.871	1.017
Inadequate Water funding agencies	4.010	0.636
Poor Social cultural practices	2.923	0.863
Lack of Stakeholder participation	3.985	0.836

From the findings, the respondents indicated that inadequate Water funding agencies as illustrated by a mean of 4.010, lack of Stakeholder participation as illustrated by a mean of 3.985 and lack of water projects as illustrated by a mean of 3.871 affect social development in Todonyang greatly. The respondents also indicated that poor Social cultural practices as illustrated by a mean of 2.923 affect social development in Todonyang moderately.

From the interviews, the interviewees said that the influences of implementation of community water projects related issues on social development in Todonyang are reduction of conflict among community members, promotion of enhanced water supply, promotion of platforms for unity for proposing critical interventions and increased mobilization of communities towards a common goal.

#### **4.4.1 Types of Water Projects and Social Development**

The study sought to determine the influence of types of water projects on social development in Todonyang, Turkana County, Kenya. The respondents were asked to the extent to which various types of water projects influences social development in Todonyang. The findings are as shown in Table 4.8.

**Table 4. 8: Extent to which Type of Water Projects influenced Social Development**

	<b>Mean</b>	<b>Std. Dev.</b>
The major project sources of water supply in Todonyang are dams and boreholes.	4.412	0.723
Low water ratio causes conflict among community members hence affecting social development due to low supply	4.268	0.644
Lack of dam and boreholes is causing a low level of water supply.	3.237	0.873
Lack of protection of water sources hinders the availability of water for economic and social development.	3.650	0.977

From the findings, the respondents indicated that the major project sources of water supply in Todonyang are dams and boreholes which greatly influence social development as shown by a mean of 4.412, that low water ratio causes conflict among community members hence greatly affecting social development due to low supply as shown by a mean of 4.268 and that lack of protection of water sources greatly hinders the availability of water for economic and social development as shown by a mean of 3.650. However, the respondents

indicated that lack of dam and boreholes is causing a low level of water supply which moderately influence social development as shown by a mean of 3.237.

The respondents were also asked to indicate the extent to which types of water projects influence social development in Todonyang. The findings are shown in Table 4.9.

**Table 4. 9: Extent Water Projects influence Social Development**

	<b>Frequency</b>	<b>Percent</b>
Little extent	30	15.5
Moderate extent	33	17
Great extent	99	51
Very great extent	32	16.5
<b>Total</b>	<b>194</b>	<b>100</b>

From the findings, the respondents indicated that types of water projects influence social development in Todonyang to a great extent as shown by 51%, to a moderate extent as shown by 17%, to a very great extent as shown by 16.5% and to a little extent as shown by 15.5%. This implies that types of water projects greatly influence social development in Todonyang. From the interviews, the interviewees indicated that waters projects for social development in Todonyang include Gibe dams, irrigation project and various boreholes.

#### **4.4.2 Water Funding Agencies and Social Development**

The research aimed at examining the influence of water funding agencies on social development in Todonyang, Turkana County, Kenya. The respondents were asked to the extent to which various aspects of water funding agencies influence social development in Todonyang. The findings are as shown in Table 4.10.

**Table 4. 10: Extent Water Funding Agencies influence Social Development**

	<b>Mean</b>	<b>Std. Dev.</b>
Increases availability of safe drinking water	3.866	0.940
Promotes improved water supply	2.814	0.390
Promotes water infrastructure for improved sanitation	4.077	0.881
It improves the public through the reduction of water-borne diseases.	3.711	0.454

From the findings, the respondents indicated that promotes water infrastructure for improved sanitation as shown by a mean of 4.077 and increases availability of safe drinking

water as shown by a mean of 3.866 greatly influence social development in Todonyang. The respondents also indicated that water funding agencies improves the public through the reduction of water-borne diseases which greatly influence social development in Todonyang as shown by a mean of 3.711. However, the study indicated that water funding agencies promotes improved water supply which moderately influence social development in Todonyang as shown by a mean of 2.814.

The respondents were also asked to indicate the extent to which water funding agencies influence social development in Todonyang. The findings are shown in Table 4.11.

**Table 4. 11: Extent Water Funding Agencies influence Social Development**

	<b>Frequency</b>	<b>Percent</b>
Little extent	25	12.9
Moderate extent	29	14.9
Great extent	98	50.5
Very great extent	42	21.6
<b>Total</b>	<b>194</b>	<b>100</b>

From the findings, the respondents indicated that water funding agencies influence social development in Todonyang to a great extent as shown by 50.5%, to a very great extent as shown by 21.6%, to a moderate extent as shown by 14.9% and to a little extent as shown by 12.9%. This implies that water funding agencies greatly influence social development in Todonyang.

From the interviews, the interviewees said that water funding agencies influence social development through improved water supply, improved water infrastructure for improved sanitation and improved access to safe water drinking. In addition the interviewees said that through agency funding various water projects have been initiated and implemented successfully.

#### **4.4.3 Stakeholder Participation and Social Development**

Moreover, the study sought to investigate the influence of stakeholder participation on social development in Todonyang, Turkana County, Kenya. The respondents were asked to the extent to which various aspects of stakeholder participation influence social development in Todonyang. The findings are as shown in Table 4.12.

**Table 4. 12: Extent Stakeholder Participation influence Social Development**

	<b>Mean</b>	<b>Std. Dev.</b>
Provision of finances for social course	3.608	0.637
Increase of community involvement on problems	4.325	0.587
Corporate responsibility towards improving community welfare and improving water infrastructure	2.845	0.831
Creating unity among community member	4.268	0.529

As per the findings, the respondents indicated that increase of community involvement on problems as shown by a mean of 4.325, creating unity among community member as shown by a mean of 4.268 and provision of finances for social course as shown by a mean of 3.608 greatly influence social development in Todonyang. The respondents also indicated that corporate responsibility towards improving community welfare and improving water infrastructure as shown by a mean of 2.845 moderately influence social development in Todonyang

The respondents were also asked to indicate the extent to which stakeholder participation influence social development in Todonyang. The findings are shown in Table 4.13.

**Table 4. 13: Extent Stakeholder Participation influence Social Development**

	<b>Frequency</b>	<b>Percent</b>
Moderate extent	91	46.9
Great extent	95	49
Very great extent	8	4.1
<b>Total</b>	<b>194</b>	<b>100</b>

From the findings, the respondents indicated that stakeholder participation influence social development in Todonyang to a great extent as shown by 49%, to a moderate extent as shown by 46.9% and to a very great extent as shown by 4.1%. This implies that stakeholder participation greatly influences social development in Todonyang.

From the interviews, the interviewees said that stakeholder participation influences social development through provision of finances on social course and increased community

involvement on social problems. Moreover, the interviewees said that stakeholder participation influences social development through increased corporate responsibility.

#### 4.5 Regression Analysis

The researcher conducted a multiple regression analysis to test the relationship between types of water projects, funding agencies and stakeholder participation and social development. This showed how the dependent variable is influenced by the independent variables.

**Table 4. 14: Model Summary**

<b>Model</b>	<b>R</b>	<b>R Square</b>	<b>Adjusted R Square</b>	<b>Std. Error of the Estimate</b>
1	0.859	0.737	0.733	0.608

From the findings, the independent variables were statistically significant predicting the dependent variable since adjusted R square was 0.733. This implied that 73.3% variations in social development in Todonyang, Turkana County, Kenya are explained by types of water projects, funding agencies, and stakeholder participation. Other factors influencing social development in Todonyang, Turkana County, Kenya that were not covered in this study accounted for 36.7% which form the basis for further studies.

**Table 4. 15: ANOVA Test**

<b>Model</b>		<b>Sum of Squares</b>	<b>df</b>	<b>Mean Square</b>	<b>F</b>	<b>Sig.</b>
1	Regression	199.121	3	66.374	177.577	7.18E-55
	Residual	71.017	190	0.374		
	<b>Total</b>	<b>270.138</b>	<b>193</b>			

From the ANOVA Table, p-value was 0.000 and F-calculated was 177.577. Since p-value was less than 0.05 and the F-calculated was greater than F-critical (2.6521), then the regression relationship was significant in determining how types of water projects, funding agencies and stakeholder participation influenced social development in Todonyang, Turkana County, Kenya.

**Table 4. 16: Coefficients of Determination**

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	1.267	0.182		3.317	.001
Types of water projects	0.812	0.321	0.714	2.530	.014
Funding agencies	0.712	0.278	0.611	2.561	.013
Stakeholder participation	0.771	0.312	0.672	2.471	.016

The established model for the study was:

$$Y = 1.267 + 0.812X_1 + 0.712X_2 + 0.771X_3$$

Where: -

Y= Social development in Todonyang, Turkana County, Kenya

X<sub>1</sub>= Types of water projects

X<sub>2</sub>= Funding agencies

X<sub>3</sub>= Stakeholder participation

The regression equation above has established that taking (types of water projects, funding agencies and stakeholder participation), social development in Todonyang, Turkana County, Kenya will be 1.267. The findings presented also show that increase in the types of water projects leads to 0.812 increase in the score of social development in Todonyang, Turkana County, Kenya if all other variables are held constant. This variable was significant since 0.014 was less than 0.05.

Further it was found that if water funding agencies increases, there is a 0.712 increase in social development in Todonyang, Turkana County, Kenya. This variable was significant since 0.013 was less than 0.05. The study also found that a unit increase in the scores of stakeholder participation would lead to a 0.771 increase in the scores of social development in Todonyang, Turkana County, Kenya. This variable was significant since 0.016 was less than 0.05.

Overall, types of water projects had the greatest influence on social development in Todonyang, Turkana County, Kenya followed by stakeholder participation, then water funding agencies had the least influence on the social development in Todonyang, Turkana County, Kenya. All the variables were significant since their p-values were less than 0.05.



## **CHAPTER FIVE**

### **SUMMARY, DISCUSSIONS, CONCLUSIONS AND RECOMMENDATIONS**

#### **5.1 Introduction**

This chapter presents summary, discussion, conclusion and recommendations on the influence of implementation of community water projects on social development in Todonyang, Turkana County, Kenya.

#### **5.2 Summary of the Findings**

The study sought to determine the influence of types of water projects on social development in Todonyang, Turkana County, Kenya. The study found that the major project sources of water supply in Todonyang are dams and boreholes which greatly influence social development, that low water ratio causes conflict among community members hence greatly affecting social development due to low supply and that lack of protection of water sources greatly hinders the availability of water for economic and social development. The study also found that lack of dam and boreholes is causing a low level of water supply which moderately influences social development. Generally, the study revealed that types of water projects greatly influence social development in Todonyang.

Further, the study sought to examine the influence of water funding agencies on social development in Todonyang, Turkana County, Kenya. The study established that water funding agencies promotes water infrastructure for improved sanitation and increases availability of safe drinking water greatly influence social development in Todonyang. The study also revealed that water funding agencies improves the public through the reduction of water-borne diseases which greatly influence social development in Todonyang. The study further established that water funding agencies promotes improved water supply which moderately influence social development in Todonyang. In general, the study established that water funding agencies greatly influence social development in Todonyang.

Finally, the study sought to investigate the influence of stakeholder participation on social development in Todonyang, Turkana County, Kenya. The study revealed that increase of community involvement on problems, creating unity among community member and

provision of finances for social course greatly influence social development in Todonyang. The study also revealed that corporate responsibility towards improving community welfare and improving water infrastructure moderately influence social development in Todonyang. In general stakeholder participation greatly influences social development in Todonyang.

### **5.3 Discussion of the Findings**

#### **5.3.1 Types of Water Projects**

The research found that the major project sources of water supply in Todonyang are dams and boreholes which greatly influence social development, that low water ratio causes conflict among community members hence greatly affecting social development due to low supply and that lack of protection of water sources greatly hinders the availability of water for economic and social development. The study also found that lack of dam and boreholes is causing a low level of water supply which moderately influence social development. The findings agreed with Ademiluyi and Odugbesan (2008) who carried out a study entitled “Sustainability and impact of community water supply and sanitation programmes in Nigeria and found that low water supply derails the economic growth and community sustainability of the Nigeria people. The study also found that water and sanitation programmes are limited because many of them are ill conceived and are abandoned prematurely due to numerous attitudinal, institutional and economic factors. From the interviews, the interviewees indicated that waters projects for social development in Todonyang include Gibe dams, irrigation project and various boreholes. This is in line with Akine (2011) who indicates that water projects such as building of dams is critical in improving water sources. He states that these projects are meant to enable the community members to have ease in accessing freshwater for their human consumption as well as their livestock.

#### **5.3.2 Water Funding Agencies**

The study established that water funding agencies promotes water infrastructure for improved sanitation and increases availability of safe drinking water greatly influence social development in Todonyang. The study also revealed that water funding agencies improves the public through the reduction of water-borne diseases which greatly influence

social development in Todonyang. This is in accordance to Blair Commission Report (2005) that stated that a considerable proportions of urban residents in Tanzania lack adequate access to reliable, safe water supply, which has far-reaching impacts on health, commercial activities, and human capital development. This was attributed to low funding and lack of prioritisation by the National government. In recommendation the report proposed for an increased funding from donors and the government to surplus the deficit to improve water accessibility.

The study further established that water funding agencies promotes improved water supply which moderately influence social development in Todonyang. In general, the study established that water funding agencies greatly influence social development in Todonyang. These are in line with Mweru, Simuyu and Omete (2014) carried a study on the effects of devolved funding on socio-economic welfare of Kenyans: a case of constituency development fund in Kimilili, Kenya and found that CDF plays an important role in social-economic aspects of the lives of the locals and calls for policymakers to improve on the management of the devolved funds on water projects. This study shows that water CDF funds in form of the Water Services Trust Fund have improved the development of water and sanitation in Kimilili.

From the interviews, it was found that water funding agencies influence social development through improved water supply, improved water infrastructure for improved sanitation and improved access to safe water drinking. In addition, the study found that through agency funding various water projects have been initiated and implemented successfully. This conforms to Tarrass and Benjelloun (2012) who found that lack of enough funding was the major contributor to poor water planning that promoted unsafe water, inadequate sanitation, and even poor hygiene. The findings of this report, does not indicate how funding affects social development hence not effective.

### **5.3.3 Stakeholder Participation**

The study revealed that increase of community involvement on problems, creating unity among community member and provision of finances for social course greatly influence social development in Todonyang. The study also revealed that corporate responsibility towards improving community welfare and improving water infrastructure moderately influence social development in Todonyang. In general stakeholder participation greatly

influences social development in Todonyang. These findings are in line with Herrera (2013) who carried out a study on social-cultural practices in Turkana and found that Turkana people are polygamists by nature and the number of wives a man can marry depends on the wealth one has.

From the interviews, the study found that stakeholder participation influences social development through provision of finances on social course and increased community involvement on social problems. Moreover, stakeholder participation influences social development through increased corporate responsibility. The results coincide with Khwaja (2010) who stated that community participation is crucial at all levels of a project, from inception to termination. His findings do provide evidence supporting the theoretical claim, that greater community participation in non-technical decisions is associated with higher project outcomes. They found that the performance of water systems was markedly better in communities where households were able to make informed choices about the type of system and the level of service they required, and where decision making was genuinely democratic and inclusive. In contrast, projects that were constructed without community supervision and where project management was not accountable to the community, tended to be poorly constructed by a private contractor

#### **5.4 Conclusions**

The research concluded that types of water projects such as rock dams, earth pan dams and boreholes greatly and significantly influence social development in Todonyang, Turkana County, Kenya. Major project sources of water supply in Todonyang are dams and boreholes and they greatly influence social development. Also, that low water ratio causes conflict among community members hence greatly affecting social development due to low supply and lack of protection of water sources greatly hinders the availability of water for economic and social development.

Further, it was also concluded that water funding agencies greatly and significantly social development in Todonyang, Turkana County, Kenya. Water funding agencies promotes water infrastructure for improved sanitation and increases availability of safe drinking water greatly influence social development in Todonyang. Water funding agencies also improves the public through the reduction of water-borne diseases which greatly influence

social development in Todonyang and promotes improved water supply which moderately influence social development in Todonyang.

The research further concluded that social-cultural practices greatly and significantly influence social development in Todonyang, Turkana County, Kenya. Social-cultural practices leads to increased mobilizing of communities towards a common goal, improved value creation practices and promoting platform unity for proposing critical interventions greatly influence social development in Todonyang. Social-cultural practices also enhance loyalty through management practices lowly influence social development in Todonyang.

The analysis concluded that stakeholder participation greatly and significantly influences social development in Todonyang, Turkana County, Kenya. Increase of community involvement on problems, creating unity among community member and provision of finances for social course greatly influence social development in Todonyang. The study also revealed that corporate responsibility towards improving community welfare and improving water infrastructure moderately influence social development in Todonyang.

### **5.5 Recommendations**

The study found that low water ratio causes conflict among community members hence greatly affecting social development due to low supply. The study therefore recommends that social development stakeholders in Todonyang, the beneficiary community and donors needs to implement water projects of different types because this would enhance social development in the area. These projects would reduce conflict among community members, increase protection of water sources and eventual ensure there is adequate level of water supply in the region.

The study also revealed that corporate responsibility towards improving community welfare and improving water infrastructure moderately influence social development in Todonyang.. The study recommends that the stakeholders in all the social development related projects needs to be involved in project financial management, project governance, project operations and management and project monitoring and evaluation to ensure all the projects are implemented adequately. Organizations should continuously train all project

staff and leadership on both stakeholder analysis and participation in their projects to enable them to competently involve all stakeholders in project implementation.

The study revealed that increase of community involvement on problems, creating unity among community member and provision of finances for social course greatly influence social development in Todonyang. Thus, all stakeholders should be given an opportunity to participate in each phase of the project cycle public participation influences performance. Participation should not just be in isolated episodes but throughout the project cycle. This is because each stakeholder has a role they play in the different phases.

The study established that water funding agencies promotes water infrastructure for improved sanitation and increases availability of safe drinking water greatly influence social development in Todonyang. The study recommends that donors and other funding agencies should move away from giving grants to community groups and local organization and instead direct effort to capacity build local organization and groups to make its own money to finance their activities, this will ensure ownership of the project initiatives and sustainability of projects. The study further established that water funding agencies promotes improved water supply which moderately influence social development in Todonyang. The county government should create unit to coordinate and monitor performance of local community groups so that they can be accountable on all development activities they undertake and to avoid fall of projects.

Further, there is need for the Government, civil society organizations and other stake holders to play a concerted effort to educate and create awareness on the effects of negative cultural practices. This will promote platform for unity in proposing critical interventions and increased mobilization of communities towards a common goal of ensuring social development within the region.

## **5.6 Suggestions for Further Research**

The researcher recommends that the same research should be replicated in other areas of Turkana County. In addition, future topics should be done focusing on other counties to establish the influence of implementation of community water projects on social development in Kenya.

The researcher further recommends that future research should focus on influence of implementation of rural infrastructure on social development in Kenya.

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## APPENDICES

### Appendix I: Transmittal Letter

**Dear Respondent,**

I am a student at the University of Nairobi in the faculty of Arts in Project Planning and Management. As part of my study, I am carrying out a research on Factors affecting the impact of water projects on social development in Todonyang, Turkana. Kindly answer the following questions with bonding. The information you provide will be treated with strict confidentiality. Further, the participation in the study is on voluntary basis. You are hereby kindly requested to sincerely respond to the items in the questionnaire.

Yours Sincerely,

Frankline Albert Lateo Amuma

Masters Student

University of Nairobi

**Appendix II: Questionnaire for Community Members, Community Leaders, Water Committees Members**

**Section I: Background Information**

1. Sex

- a. Male [ ]
- b. Female [ ]

2. Age bracket

a) 20-30 years	[ ]	c) 41-60 years	[ ]
b) 30-40 years	[ ]	d) 60 years and above	[ ]

3. Education Level

- a) KCPE [ ]
- b) Diploma [ ]
- c) Degree [ ]
- d) Any other (specify) \_\_\_\_\_

4. Designation

- a) Fishermen [ ]
- b) Farmer [ ]
- c) Shepherd [ ]
- d) Peasant [ ]
- e) Village leader [ ]
- f) Business [ ]
- g) Others (Specify) \_\_\_\_\_

5. Working experience

- a) 1-5 years [ ]
- b) 6-10 years [ ]
- c) More than 10 years [ ]

6) . Using a Likert scale of 1-5, please indicate the extent to which the following influence community water projects on social development in Todonyang?

Where: Very great extent=5, Great extent= 4, Moderate extent =3, Little extent=2; and no extent =1

No	Factors	1	2	3	4	5
a)	Lack of water projects					

b)	Inadequate funding agencies					
c)	Poor Social cultural practices					
d)	Lack of Stakeholder participation					
f)	other(specify)					

7) To what extent do these factors affect social development in Todonyang?

Where: Very great extent=5, Great extent= 4, Moderate extent =3, Little extent=2; and no extent =1

No	Factors	1	2	3	4	5
a)	Lack of water projects					
b)	Inadequate Water funding agencies					
c)	Poor Social cultural practices					
d)	Lack of Stakeholder participation					
f)	other(specify)					

## Section II: Influence of Types Of Water Projects on Social Development

8). Using a Likert scale of 1-5, please indicate the extent to which following influence type of water projects on social development in Todonyang

Where: Very great extent=5, Great extent= 4, Moderate extent =3, Little extent=2; and no extent =1

No	Factors	1	2	3	4	5
a)	The major project sources of water supply in Todonyang are dams and boreholes.					
b)	Low water ratio causes conflict among community members hence affecting social development due to low supply					

c)	Lack of dam and boreholes is causing a low level of water supply.					
d)	Lack of protection of water sources hinders the availability of water for economic and social development.					

9. To what extent do water projects influence social development in Todonyang?

Very great extent [ ] Great extent [ ] Moderate extent [ ]  
 Little extent [ ] No extent [ ]

**Section III: Influence of Water Funding Agencies on Social Development**

10) Using a Likert scale of 1-5, please indicate the extent to which the following influence water funding agencies on social development in Todonyang

Where: Very great extent=5, Great extent= 4, Moderate extent =3, Little extent=2; and no extent =1

No	Factors	1	2	3	4	5
a)	Increases availability of safe drinking water					
b)	Promotes improved water supply					
c)	Promotes water infrastructure for improved sanitation					
d)	It improves the public through the reduction of water-borne diseases.					

11. To what extent do water funding agencies influence social development in Todonyang?

Very great extent [ ] Great extent [ ] Moderate extent [ ]  
 Little extent [ ] No extent [ ]



**Section IV: Influences of Stakeholder Participation on Social Development in Todonyang**

14. Using a Likert scale of 1-5, please indicate the extent to which the following influence stakeholder participation on social development?

Where: Very great extent=5, Great extent= 4, Moderate extent =3, Little extent=2; and no extent =1

No	Factors	1	2	3	4	5
a)	Provision of finances for social course					
b)	Increase of community involvement on problems					
c)	Corporate responsibility towards improving community welfare and improving water infrastructure					
d)	Creating unity among community member					

15. To what extent does Stakeholder participation influence social development in Todonyang?

Very great extent        Great extent        Moderate extent      
 Little extent            No extent       

16. What are the measures that can be put in place to tackle water project issues in Todonyang?

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*Thank you for your cooperation*

### Appendix III: Interview guide for NGO Representatives

**Dear Respondent,**

I am a student at the University of Nairobi in the faculty of Arts in Project Planning and Management. As part of my study, I am carrying out a research on Factors affecting the impact of water projects on social development in Todonyang, Turkana. Kindly answer the following questions with bonding. The information you provide will be treated with strict confidentiality. Further, the participation in the study is on voluntary basis. You are hereby kindly requested to sincerely respond to the items in the guide.

Yours Sincerely,

Frankline Albert Lateo Amuma

Masters Student

University of Nairobi

#### Section I: Background Information

1. Sex

- a. Male [ ]
- b. Female [ ]

2. Age bracket

a) 20-30 years	[ ]	c) 41-60 years	[ ]
b) 30-40 years	[ ]	d) 60 years and above	[ ]

3. Education Level

- a) KCPE [ ]
- b) Diploma [ ]
- c) Degree [ ]
- d) Any other (specify) \_\_\_\_\_

4. Designation

- a) Fishermen [ ]
- b) Farmer [ ]
- c) Shepherd [ ]

- d) Peasant  [ ]
- e) Village leader  [ ]
- f) Business  [ ]
- g) Others (Specify) \_\_\_\_\_

5. Working experience

- a) 1-5 years  [ ]
- b) 6-10 years  [ ]
- c) More than 10 years  [ ]

6) What are the influences of implementation of community water projects related issues on social development in Todonyang (Probes: is it water projects, is it funding agencies, is it stakeholder's participation)

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7) What are the waters projects for social development in Todonyang? (Probes: is it dam, is it boreholes and wells, is it aquifers and springs, is it piped water)

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8) What are the influences of water funding agencies on social development? (Probes: Is it improved water supply, is it improved water infrastructure for improved sanitation, is it improved access to safe water drinking)

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9) What are the influences of stakeholder participation on social development (Probes: is it provision of finances on social course? Is it increased community involvement on social problems, is it increased corporate responsibility?)

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10. What are the measures that can be put in place to improve implementation of community water projects in Todonyang?

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*Thank You for Your Cooperation*

## Appendix IV: Research License



**UNIVERSITY OF NAIROBI**  
OPEN, DISTANCE AND e-LEARNING CAMPUS  
SCHOOL OF OPEN AND DISTANCE LEARNING  
DEPARTMENT OF OPEN LEARNING  
NAIROBI LEARNING CENTRE

Your Ref:

Main Campus  
Gandhi Wing, Ground Floor  
P.O. Box 30197  
NAIROBI

Our Ref:

Telephone: 318262 Ext. 120

REF: UON/ODeL/NLC/32/200

11<sup>th</sup> March, 2020


### TO WHOM IT MAY CONCERN


**RE: FRANKLINE ALBERT LATEO AMUMA - REG.NO. L 50/71684/2014**

The above named is a student at the University of Nairobi, Open Distance and e-Learning Campus, School of Open and Distance Learning, Department of Open Learning pursuing a Masters course in Project Planning and Management.

He is proceeding for research entitled "*The Influence of Implementation of Community Water Projects on Social Development in Kenya: A Case of Todonyang, Turkan County, Kenya.*"

Any assistance accorded to him will be appreciated.

  
CAREN AWILLY  
CENTRE ORGANIZER  
NAIROBI LEARNING CENTRE




Appendix V: Research Permit

Republic of Kenya  
National Commission for Science, Technology and Innovation

Ref No: **446233**

**RESEARCH LICENSE**




**This is to Certify that Mr.. Frankline Albert Lateo Amuma of University of Nairobi, has been licensed to conduct research in Turkana on the topic: THE INFLUENCE OF IMPLEMENTATION OF COMMUNITY WATER PROJECTS ON SOCIAL DEVELOPMENT IN KENYA: A CASE OF TODONYANG, TURKANA COUNTY, KENYA, for the period ending : 28/March/2021.**

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