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**GENDER ASSESSMENT OF KWALE WATER
AND SANITATION PROJECT**

KENYA COUNTRY REPORT

**MINISTRY OF WATER AND RESOURCES
GOK**

**RWSG - ESA
WORLD BANK**

ACKNOWLEDGEMENT

The successful completion of the study was achieved through the efforts of many individuals and organizations. It is not easy to name all of them here but we are indebted to everyone who in one way or the other contributed to the assessment study.

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The Team members: Munguti Katui Katua, Alice Owano, Monica Ayieko, L. K. Biwott, E. Onguti, P. M. Mwaeke, A Mazuri, H. Shakombo, Bibi Omar and I. Mwaropia displayed commitment in ensuring that data collection and analysis were done within the agreed time frame. To achieve this the Team had to work long hours and this was very recommendable.

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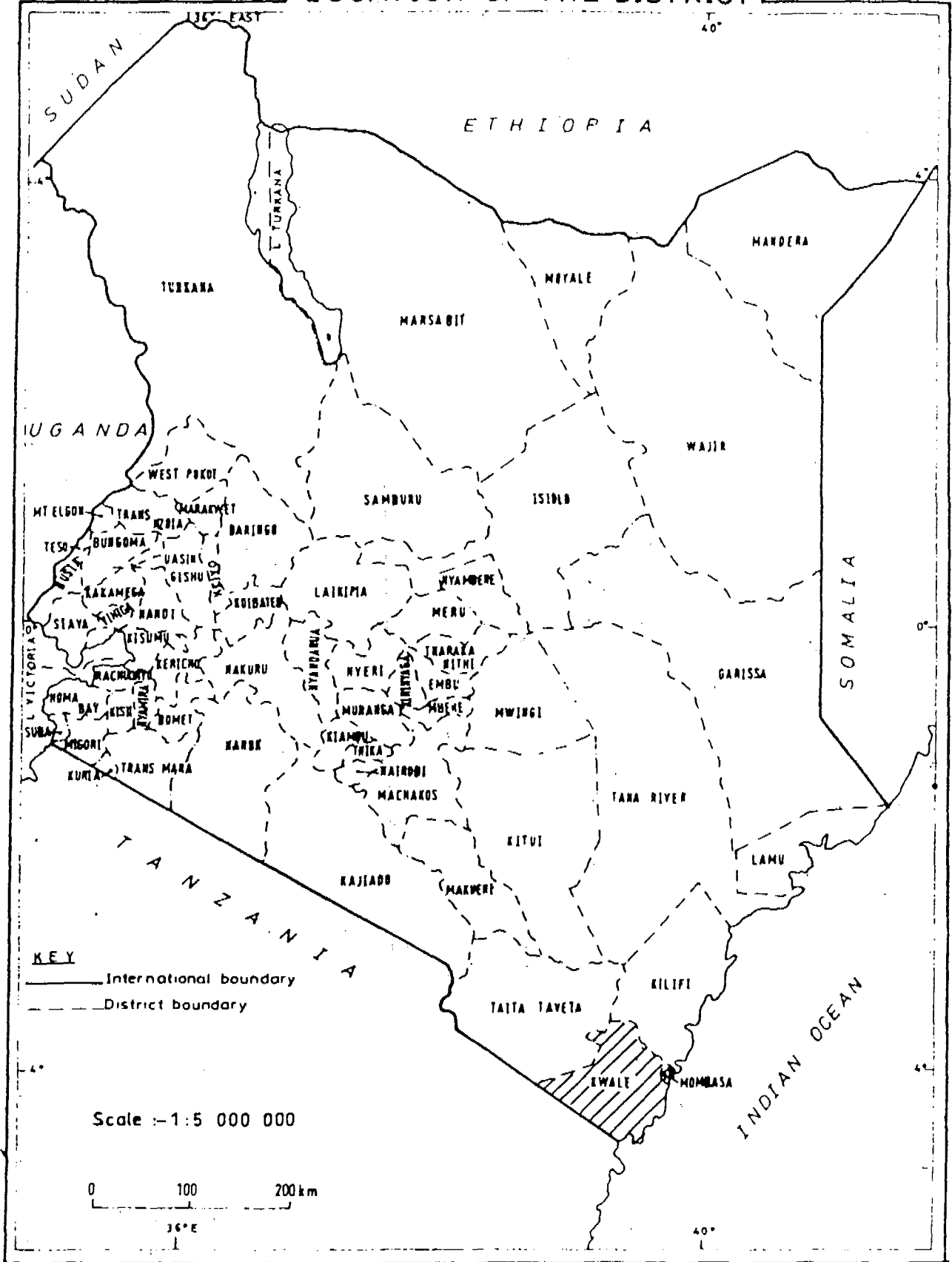
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LOCATION OF THE DISTRICT



Prepared by ORSRS

DEFINITIONS OF TERMS AND CONCEPTS

Household

Among two of the tribes studied, the household concept is not consistent with the definition of a nuclear family. Many households [9-10] may live in one homestead. In the community maps therefore, the number of households shown is much smaller than actual households as per definition of a group of persons cooking and eating together.

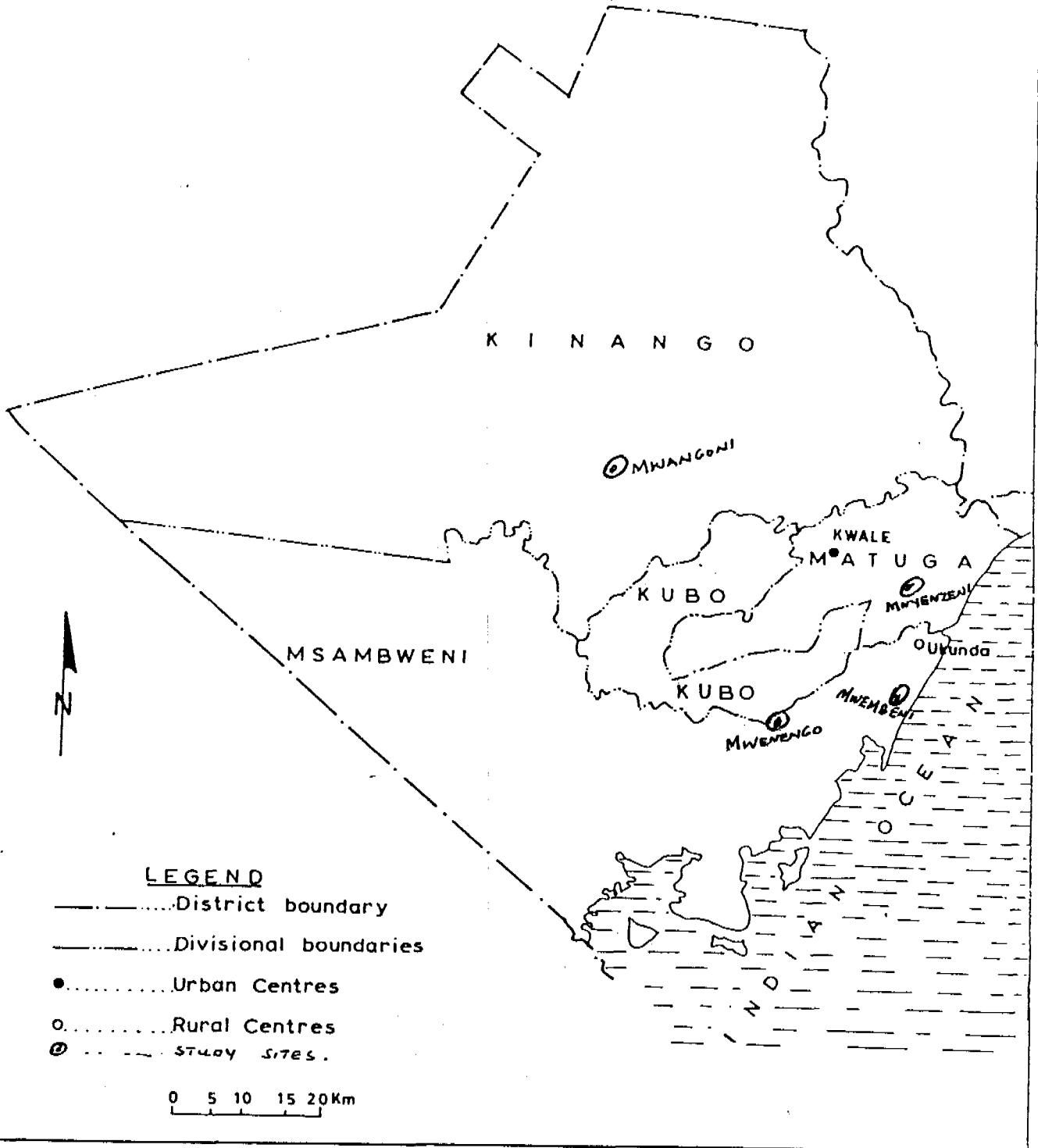
Community

Represents that population of homesteads/households using one water point in this assessment.

Rich, Poor, in-between

The community members expressed their way of defining and identifying the socio-economic status. The in-between were seen as those who are not rich and not poor. However, this classification was discarded after discussions showed that this category could be subsumed by either rich or poor. Additionally, practically all people could be said to belong to the in-between category.

KWALE DISTRICT ADMINISTRATIVE BOUNDARIES



Prepared by D R S R S

CHAPTER ONE

1.0 EXECUTIVE SUMMARY

1.1 Introduction

This assessment was part of a global study, which attempted to assess gender participation in water and sanitation projects using a participatory learning and action methodology developed by the IRC, UNDP/World Bank Water and Sanitation Programme. The Kenya study focused on Kwale Water and Sanitation Project [KWASP].

1.2 Purpose and Objectives of Assessment

The main purpose of the assessment was to establish levels of awareness and practices of community participation, different gender needs and demand responsiveness and to determine the link between these variables and the impact and sustainability of water projects. Specifically the assessment attempted to establish how far the KWASP was based on responsive participatory, gender sensitive and poverty focused.

1.3 Methodology

The assessment used Participatory Learning and Action [PLA] which used a variety of tools including:

Participatory methods such as

- Wealth ranking
- Community mapping
- Transect walk
- Pocket voting
- Card scoring
- History of participation
- Ladders II
- Ladders I

In addition other assessment methods such as structured questionnaires / focus group discussions / focus group discussions were also used.

The tools were administered in four communities [Mwembeni, Mnyenzi, Mwenengo and Mwangoni] purposively selected to represent the coastal, pediment and hinterland zones of Kwale District, and different water technologies. Data was collected for four days in each community.

1.4 Key Findings

- The PLA methodology though appropriate for cross checking information was found too tedious.

- The four days spent in each community facilitated confidence building and group interaction but the period limited the sample size to only four communities making it difficult to generate adequate statistical data which can be extrapolated for generalization.
- The water supply systems were found to be functioning and reliable.
- Communities were able to meet O & M costs but had no provisions for replacement.
- Payment for water services was timely where user charges were instant but not timely where charges were periodic.
- Management of water supplies systems was controlled by a few influential individuals.
- Record keeping was found to be poor.
- Except for the hinterland water coverage in other communities studied was over 90%.
- Although communities were involved in implementation the choice of technology was decided by the service agency.
- Gender was not a factor in the design of the project. The project initially focused on the role of women in water and sanitation projects.
- Traditional roles of men and women were evident during implementation.
- Both women's and men's roles are gradually changing.
- The rich and poor performed the same roles, but in crisis the rich contributed more especially in cash.
- The water needs of both the rich and poor were met by the project.
- Although most people embraced the project as their own, a few still saw it as somebody else's property and had expectations of further external aid.
- Most communities now used improved water sources for domestic purposes.
- School terms in the hinterland were more consistent and attendance had improved with water availability.
- More time was saved for more productive activities as a result of access to clean water.
- Project objectives were relevant to the needs of the people, project implementation strategy was participatory and people centred, and flexible.
- Institutional arrangements of KWASP which promoted collaboration of several stakeholders during implementation was minimal after the completion of the project.
- Awareness on sanitation was carried out at household level but the pit latrines promoted were too expensive for replication.
- Few people who had latrines did not use them at all times.
- Expectations on sanitation were not met by the project and communities saw sanitation as a separate component from water.
- Hygiene practices have improved.

1.5 Conclusions

- The PLA method enhances group interaction and confidence.
- Quantitative data generated was inadequate for generalization.
- PLA methodology was a learning experience for both the assessors and members of communities.
- The water technologies promoted were appropriate and O & M costs were affordable.
- Management committees were weak.

- Communities can run the water facilities on a commercial basis as an economic social good.
- Management skills and knowledge from earlier trainings are not being applied.
- The water technologies promoted are relatively expensive compared to community members' economic status.
- Communities have not planned for replacement or replication of their water systems.
- Water coverage is lower in the hinterland than in the Coastal and pediment zones.
- Project design favoured institutional sanitation, but did not address household needs.
- The project should have promoted use of basic latrines before introducing the VIP latrines.
- Involvement of both men and women greatly contributed to the success of the project.
- Water and sanitation components were not well integrated.
- There was change in behaviour of water uses.
- Project contributed to human resource development within communities especially for O & M but currently they lack technical support and coordination.
- Lessons learnt in the project have contributed to the development of the water sector policy.

1.6 Recommendations

- The PLA method should be adapted to suit different conditions.
- Efforts should be made to collect additional quantitative data from a larger sample for statistical extrapolation.
- The water management committees should be revitalized.
- The issue of poor quality of spares should be addressed.
- Additional water sources should be developed for the hinterland.
- The sanitation component in the District should be revisited.
- Women and men should be encouraged to participate in non-traditional roles.
- There should be greater integration of water and sanitation components in projects.
- Technical advice and regular follow up [monitoring] by parent Ministries should be enhanced.

CHAPTER TWO

2.0 INTRODUCTION

Kenya has endeavoured to improve the standards of living of her people since independence in 1963. Accordingly, successive development plans and various government policy documents have provided interventions that aimed at addressing the concerns of her citizens. The major concerns were classified as disease, ignorance and poverty.

Issues on water and sanitation featured prominently as areas that required to be addressed in order to reduce diseases and poverty and improve the socio-economic conditions of the population.

2.1 Geographical and Climatic Conditions

The Republic of Kenya lies on the Eastern side of the African continent; between latitudes 50° 40' North and 4° 4' South and between longitudes 33° 50' and 41° 45' East. The Equator divides the country into almost two equal parts. It is bordered by Sudan and Ethiopia to the North, Somali and the Indian Ocean to the East, the Republic of Tanzania to the South and Uganda to the West. The country has an area of about 582,000 km² and a coastline of 608 km long. The country is divided into eight administrative provinces including Nairobi. All the provinces except Nairobi are further divided into 67 districts.

Kenya has diverse land forms ranging from coastal plain through the dry Nyika plateau, the Savanna grasslands and the highlands on both sides of the Rift valley. Both sides of the Rift valley are dominated by highlands. The vast expanse of Northeastern Kenya varies from flat semi-desert in the East to the more rugged country west of lake Turkana.

Annual rainfall follows a wet and dry season pattern with an average of 631 mm annually. Outside the highlands and western part of the country, most rainfall is received in April and May. The climate is influenced by the inter-tropical convergence zone and altitude, giving rise to varied climatic regimes. There is a wide range between the maximum and minimum temperatures; from below freezing on the snow capped Mt. Kenya to over 40°C in some parts of Rift valley and Northeastern part of the country. The arid and semi-arid lands [ASAL] areas cover over 80% of the total land area.

2.2 Population

According to the 1989 census, the population of Kenya was 21.5 million with a density of 37 people per km². The average family size in the 1989 census 5 people per household. The regional population densities vary remarkably; from 230 persons per km² in high potential areas to as low as three persons per km² in arid areas.

The country has a rapidly urbanizing population, expected to reach 23% in from 17% and 14.3% in 1989 and 1979 respectively. The country has been experiencing decline in the total fertility rate.

The majority of Kenyans are Christians followed by the Muslims with a minority of traditional religion practitioners. The national language is Kiswahili, widely spoken in East and Central Africa while the official language is English. There are about 42 different ethnic communities in Kenya.

2.3 Socio-Economic Infrastructure

2.3.1 Energy

The total hydro electric supply currently accounts for 629 mega watts [mw] or nearly 75% of total installed capacity of 822 mw, while thermal oil accounts for 18 % of the total.

2.3.2 Communication Network

The road transport network accounts for over 80% of the country's total passengers and freight traffic. About 8,804 km or [14%] of the road network is bitumenized of the total 63,663 that is classified. The unclassified roads constitute 80,000 km or 53%. In addition, Kenya is served by rail and air transport between Mombasa, Nairobi, Kisumu and Eldoret. Kenya has also port facilities in Mombasa and inland container depots at Nairobi, Kisumu and Eldoret. This is besides the oil pipeline running between Mombasa, Kisumu and Eldoret. There are plans to extend the oil pipeline to Uganda.

In the telecommunications sub-sector, the total number of telephone exchange connections now stands over 250,000 with an annual growth of 6.3%. The number of telephone lines per 1000 persons is 9.4.

2.3.3 Education

In 1989, literacy was 57% for males and 19% for females and 38% over-all for the 55-59 age group. For the 15-19 age group, it was 91% for males and 87% for females.

In term of enrollment, in 1995, only 76% of the primary age population [6-13 years] were enrolled in primary school while 27% of the secondary age population [14-17] were enrolled at that level. Enrolment at universities is only 7%.

2.3.4 Wildlife and Tourism

Wildlife is a major resource for the country, which has not been fully exploited. It currently earns the country substantial revenues in terms of hotel bookings, transport and park changes.

2.4 Water and Sanitation Sector

The estimated total annual water potential from both surface and ground water is estimated at 20,209 mcm per year. This potential far exceeds the total annual demand of 2,600 mcm. It is estimated that less than 50% of rural populations and 70% urban residents have generally access to safe water, the quality of river water is good while ground water have wide variation in quality.

The distinctive rainy and dry months bring about extremely low river flows during the dry periods and many tributaries dry up. The water potential is unevenly distributed in the five drainage basins whose drainage is greatly influenced by the great rift valley which bisects the highlands from North to South.

Over the years, water supplies of various sizes and types have been developed in Kenya by the Government communities and other agents. There are over 2000 water supplies in the country under the management of various water sector actors of which the water department of the Ministry of Water Resources is the main player.

Most of the existing water systems no longer function optimally and most water sources have started becoming unreliable with many dams and pans getting silted up, thus holding less water for increasingly shorter time span while other sources continue to dwindle with time. The water qualities are also declining. These negative developments are attributed to the following reasons:

- Many of the systems constructed 25 to 15 years ago are reaching the end of their design life.
- The schemes have been expanded to serve the increasing population than originally designed.
- Poor operations and inadequate maintenance resulting from insufficient funds and organization capabilities at scheme levels.
- Encroachment into the water catchment areas resulting to reduced base flows in rivers and reduced groundwater recharge.

The sewerage facilities are in almost all cases confined in the areas of respective municipalities and urban centres and are generally managed by the local authorities. The rural areas are mainly served by pit latrines whose coverage is less than 40%.

CHAPTER THREE

3.0 NATIONAL WATER POLICY

3.1 Objectives

The aim of the policy is to guide water sector activities in order to achieve sustainable development and management of water resources by providing a framework in which the desired targets/goals are set outlining the necessary measures to guide the entire range of actions and to synchronize all water related activities and actors. The basic areas which have been addressed by the policy document include water resources management, water supply and sewerage development, institutional arrangement and financing of the water sector. In addressing these areas the objectives are to:

- Preserve, conserve and protect available water resources and allocate it in a sustainable, rational and economic way. -
- Supply water of good quality and in sufficient quantities to meet the various water needs while ensuring safe disposal of water and environmental protection. -
- Establish an efficient and effective institutional framework to achieve a systematic development and management of the water sector.
- Develop a sound and sustainable financing system for effective water resources management and water supply and sanitation development. -

3.2 Main Features

The main features of the policy are:

- The provision of adequate water supply to meet all the nations needs is an enormous task and challenge that requires concerted efforts by all the actors. This calls for all stakeholders [Government department development, partners, communities, NGOs and private sector] to coordinate the necessary resources. The key role of the government will be to create an enabling environment for all actors to operate effectively and efficiently as it gradually diminishes its role in the direct implementation of water supply and sanitation projects.
- The governments' role will continue to be promoting aid and development of appropriate water and sanitation facilities as a means of attracting viable economic activities. This is being done through the full participation of the beneficiaries in the development and operation of water and sanitation facilities.
- The government will support private sector and community participation in the provision of management services, backed by measures to strengthen local institutions in implementing and sustaining water and sanitation programmes.
- The Ministry in charge of water affairs will define clearly the roles for all actors in the water sector according to their capabilities and establish mechanisms for monitoring performance and also define the performance indicators.

- Community involvement will be part and parcel of project formulation and development. Efforts will be made to appropriately train the communities to equip them with the knowledge for this purpose. Community based water committees' will be established at the district level with clearly defined roles.
- Water will be considered as an economic/social good. In this regard all water consumers will pay for water on the basis of user pays principle. Water use fee will be introduced commensurate with the amount of water abstracted to ensure that the water schemes are self sustaining. Efficient discharge levies will also be introduced.

CHAPTER FOUR

4.0 BACKGROUND TO ASSESSMENT STUDY

The participatory Learning and Action [PLA] initiative was established by the working group on gender participation of the collaboration with the IRC and the UNDP World Bank Water and Sanitation Programme [WSP]. The PLA was launched in the Hague in October 1997 and was followed up by a Regional Workshop held in Pretoria – South Africa in November 1997. The outcomes of this workshop included.

- The need to access the levels of awareness and practices of community participation, different gender needs and demand responsiveness. This would also involve determining the link between the variables, the impact and sustainability of water projects.
- The adoption of Kenya as one of the countries to participate in these gender assessments.

For the assessments in Kenya, Kwale water and sanitation project which was implemented between 1983 – 1997 as part of GOK participation in the IDWSSD was chosen:

4.1 Scope of Work for Assessment

4.1.1 Objectives

The specific Objectives of the Assessment are:

- To determine the extent, to which projects and programs are based on principles of demand responsiveness, were participatory, gender sensitive and had a poverty focus.
- To assess the extent to which participatory gender sensitive approaches had impact in sustainability of projects.
- To determine the factors that facilitated and or limited the implementation of participatory gender sensitive approaches in planning and execution of projects.
- To assess whether the projects and programs had different impacts on women and men, rich and poor considering the benefits as well as the burdens of operating and maintaining the WSS services at the household level.
- To use the findings of the assessments as inputs in the refinement of rural water supply intervention strategies

4.1.2 Scope of Activities

- To identify the location and types of water and sanitation services that exist in the target area and the types of people served by these facilities.
- To determine the extent to which the identification, implementation, operation, maintenance and management of WSS project /program has been participatory, demand driven and gender responsive.
- To determine the extent, to which monitoring and evaluation of WSS project/program has been participatory, demand driven and gender responsive.

- To assess the existing decision making structures at community level and their operational status; determining the level of representatives and participation of men and women in decision making.
- To examine the division of roles, responsibilities and benefits among men and women, poor and rich in WSS projects.
- To determine the factors that facilitate or limit equal participation of men and women.
- To examine the level of existing policy support for gender and demand responsive participation in WSS project.
- Assessing the institutional support for gender and demand responsive participation.
- To determine the extent to which project/programs which are based on the principles of demand responsiveness was participatory, gender sensitive and had a poverty focus and making recommendations.
- To assess the extent to which participatory and gender sensitive approaches has an impact in sustainability of project.
- To determine the factors that facilitated and or limited the implementation of the participatory gender sensitive approaches in planning and execution.
- To assess whether the project had different impact on women and men, rich and poor considering the benefits as well as burden of operating and maintaining a WSS service at household and community level.

4.2 Description of Study Area – Kwale District

4.2.1 Location and Size

Kwale is one of the seven districts that constitute Coastal Province. It is located in the South eastern corner of Kenya where it borders Taita Taveta District in the West, Kilifi District in the North, Mombasa District and the Indian Ocean in the East and the Republic of Tanzania in the South.

The district covers an area of 8,322 square kilometres of which 62 square kilometres is under water. This excludes the 200 miles Ocean strip, which is referred to as the exclusive economic zone [EEZ]. The district is divided into five administrative divisions. Table 1 gives the area by divisions.

Table 1 Area of the District by Division

Division	Area Square km
Msambweni	3,267
Samburu	2,102
Kinango	1,848
Matuga	358
Kubo	685
Total	8,260

Water surface = 62 km²

4.2.2 Topography and Climate

The district has four major topographical features. The coastal plain, the foot plateau, the coastal uplands and the Nyika plateau.

The coastal plain is commonly referred to as the coastal zone while the coastal uplands area is referred to as the pediment area. Both the Nyika and foot plateaus fall within the hinterland of the District.

The district has a monsoon type of climate. It is hot and dry from January to April while June to August is the coolest period of the year. Long rains usually start from March/April to July while the short rains occur in November and December. The annual precipitation varies from 900 1500 mm per annum along the coast to 500 – 600 mm per annum in the hinterland.

4.2.3 Population

According to 1989 National Population census, Kwale District had a population of 382,874 people. Projection based on a growth rate of 2.88% shows that the current population stands at 521,781 people. The economically active population represents 48% of this population. Table 2 shows the projected population distribution and density by division during 1999.

Division	Area square km	Population	Density/Area square km
Kinango	3,267	83,019	45
Samburu	2,102	89,132	42
Matuga	1,848	78,323	219
Kubo	358	53,423	78
Msambweni	685	217,885	67
Total	8,260	521,781	63 [Average for District]

[Source of Kwale District Development Plan]

4.2.4 Resource Potential and Exploitation

Kwale district is endowed with a wealth of resources, some of which have been harnessed for development. However, given that most part of the district is either arid or semi-arid, its ecosystem is fragile and therefore, susceptible to environmental degradation.

a) Land and Soils

The soils in the district vary with the topography and geology of the area. Ninety two percent [92%] of the district is of low agricultural potential. Generally the soils in the district, and especially in Kinango, have been degraded through erosion which is usually caused by clearing the vegetation cover for cultivation, building poles and sand harvesting. Overgrazing is also a major contributor to soil erosion especially in the semi-arid areas.

b) Water Resources

The district has inadequate and unreliable surface and underground water resources. The coast zone has reliable ground water potential while the hinterland is semi-arid and has serious water scarcity.

c) Forestry

About 7% of Kwale is covered by forest. The areas include the mangrove forests along the coastal shoreline and the shimba hills in the pediment zone.

d) Minerals

The district is endowed with a variety of minerals including iron ore, limestone, zinc, zircon, gypsum, manganese, lead, lead titanium monazite e.t.c. The department of mines and geology is currently carrying out geochemical investigation on the same.

e) Tourist Attractions

The major tourist attraction in the district include wildlife, historical sites, and the coastal features. Kwale district hosts a terrestrial and several marine game reserves. The Diani beach area in the South coast has become a major tourist beach resort in Kenya.

f) Fisheries and Marine Resources

Kwale district has approximately one third of the entire Kenya's coastline of approximately 250 km long. With the adoption of the exclusive economic zone [EEZ], which extends seawards for 204 nautical miles the fisheries in the district have increased.

g] Agricultural Activities

The district has a total of 7,313 square km of agricultural land, 90% of which is under crop production. Most of the farming in the district is small scale.

Main food crops include maize, cassava, rice, cowpeas e.t.c. While cash crops include coconut, cashewnut, citrus and bixa.

h] Livestock Production

The Kwale hinterland has a very high potential for livestock activities. These include beef cattle, sheep, goats and bee keeping. Group and commercial ranches as well as herds owned by individuals are also found.

4.3 The Project:Kwale Water and Sanitation Project

4.3.1 Historical Development

Kwale water and sanitation project started in July 1985, as a logical extension of the South Coast Hand Pump Testing Program [SCHTP] which was a pilot.

The pilot was initiated in 1983, in two locations Msambweni and Diani in Kwale district covering an area of 300 square km and a population of 25,000 people. The programme was implemented by the Ministry of Water Resources with Technical support from the World Bank.

The SCHTP was set as part of GOK participation in the declared United Nation International Decade for improved Drinking Water and Sanitation by the year 1990 [IDWSSD].

Based on the positive achievements during the SCHTP, the need to expand to the entire district was inevitable.

4.3.2 The Expanded Programme: Kwale Water and Sanitation Project

This was implemented by the Ministry of Water Resources with support from the Ministry of Health [MOH], Ministry of Culture and Social Services [MOCSS] and the Kenya Water for Health Organization [KWAHO], a local NGO. The project was jointly funded by the GOK and the Swedish International Development Corporation Agency [Sida]. Sida also provided technical assistance.

The programme objectives as at 1995 included the following:

- Assist rural communities especially women and children in Kwale district with clean sufficient drinking water, adequate facilities for excreta disposal, hygiene education and general improvement of Public Health.

- The involvement and participation of the communities in project planning implementation and management.
- To promote and develop a wide range of skills/capacity within the implementation team and community institutions for effective implementation of the programme activities with a view to ensuring sustainability of provided installations.

The activities to be implemented included

Drilling boreholes and equipping them; protecting spring; ferrocement tanks; earth dams; household latrines; health and hygiene education. The other activities were Community organization and training in both operation and maintenance and organization and management.

The project was implemented from July 1985 and finally phased out in June 1997. The operation, maintenance and management was handed over to the beneficiaries and technical advice and support incorporated into the district structures.

4.4 METHODOLOGY

4.4.1 Research Design

The design of the research instruments was done by World Bank/IRC. The consultants made minor changes to suit local circumstances.

4.4.2 Duration

The study was carried out in three phases:

- Training of the personnel carrying out the research and presetting the tools. This was done for one week.
- Actual field assessment including institutional/sectors in the project. This was done for one week for every village that was being studied.
- Data analysis and report writing. These activities were done for one week.

4.4.3 Sampling

The criteria that was used to select KWASP project was as outlined below:

i) Duration

The criteria was the selection of a project, which was in existence for more than five years. In the cash of KWASP the project had been in existence for 14 years. The project started as South Hand Pump Testing Programme [1983-85]. It later changed to Kwale Water and Sanitation Project [1985-97].

II] Institutional Set up

The institutional set up of the project during and after implementation of the project was also a criterion for choice. The participating agencies in KWASP during the implementation were Ministry of Water Resources, World Bank, Swedish International Development agency and Kenya water for Health Organization. It also benefited from PROWESS [UNDP] and UNIFEM.

iii] Range of Technology

This project components comprised well/borehole construction and equipping, pump testing, protection of springs construction of roof water collection systems and ferrocement tanks and construction of dams. It also had a training component, which was very useful.

4.4.4 Selection of Communities

Criteria used for selecting the communities were:

- Accessibility of the communities as the study was carried out during a rainy season.
- Zone [e.g. coastal, pediment or hinterland].
- Technology, accessibility and functioning of water system.
- Institutional issues [e.g. water project with existing water committee].

Four communities were selected for the study namely Mwembeni and Mnyenzi along coastal zone and along the Mombasa – Lunga Lunga road which is tarmarked and therefore it is very accessible. Mwenengo is in the pediment [shimba hills] and the project is a protected spring.

Mwangoni is in the hinterland, which is very dry. It is accessible by a rough road, which is 45 km from a tarmarked road [Kwale town].

4.4.5 Data Collection Methods and Tools

The study employed a Participatory Learning Action methodology and tools at all levels. This comprised a combination of both participatory rural appraisal and SARAR techniques. In particular, the tools widely used included the following:

Wealth Ranking: This was meant to identify socio-economic categories within the community in focus. For example to identify the rich, the poor and the in between.

Community Mapping: For determining the community's situation with reference to water and sanitation facilities, their accessibility vis-à-vis the socio-economic categories established. The community map drawn was used to obtain the sample for the focus group discussion.

Transect Walk: To cross check information on the map made by the community and to determine to what extent a well-sustained water supply and sanitation is present in community.

Pocket Voting: Used to identify changes in behaviour of people, decision making and choices made according to use of service before, during and after project initiation.

Card Scoring: Was used to assess who [m/w and r/p] contributed what to the establishment of the service in relationship to the capacity to contribute.

Ladders II: Was employed to assess the impact of the service on women's time and workload in relation to that of men.

Ladders I: For assessing the extent to which the service meets the users' demand and how far they consider the benefits are worth the costs.

History of Participation: Was used to identify the decision-makers in a community and the types of decisions they made regarding water and sanitation services.

Direct Observation: Used to gather information, especially during the transect walk e.g. features like cleanliness, information on latrines e.t.c.

Committee Interview and Records

A discussion with the committee and a study of the documents was done to extract further information regarding the management of the services.

Institutional Assessment: Was employed to assess policies of institutions pertaining to gender, demand responsiveness, participation and sustainability issues at the time of establishing the service.

For every tool employed, comprehensive qualitative data was gathered to support every emerging information.

4.5 DATA ANALYSIS

During the study period both qualitative and quantitative data were collected and analyzed.

4.6 STRENGTH AND WEAKNESSES OF METHODOLOGY

4.6.1 Strengths

- The methodology is a means of collecting large amounts of data within a short time.
- The participatory nature makes respondents active rather passive participants in the data collection process.
- More detailed and broadly confirmed information could be gathered.
- The research team found some tools i.e. mapping, transect walk and history of participation to be very useful during data collection especially for small communities.

- The methodology helps to collect a lot of information about the community and therefore helps to get a clear picture of the community.
- The use of various instruments helped to crosscheck information.
- The methodology helps to get in-depth study of the community.
- The duration [one week per community] made the community freer to give information.

4.6.2 Weaknesses

- Translation of questions into local languages by field facilitators rather than standardizing the translations could introduce some bias.
- The use of group scores could bind the views of the less affluent and lead to bias.
- Data collected and analyzed can not be used authoritatively because of the limits of the sample since only 20 or less persons were used to represent the whole community.
- Wealth classification using the indicators given by the communities were not reliable since some people who were classified as rich were actually poor and some who were classified as poor were rich. This information was verified during the transect walk.
- Reasons for continual use of unimproved sources after the introduction of the project could not be assessed from pocket voting.
- The instruments were too many and tiring to the community and researchers.
- The coverage of qualitative data is too limited and also the sample too small.
- It was difficult for the communities to see the relevance of the tools. At times some of exercises sounded childish to them.

CHAPTER FIVE

5.0 THEORETICAL FRAMEWORK TO SUSTAINABILITY

The success of any project depends on its ability to sustain itself in the long run. Evaluation results of several development projects attest to this fact. The main issues to consider for sustainability include active participation of the community in all stages of the project cycle based on their socio-cultural practices. The cost of the project must be affordable to the community members.

The users management skills are also critical to cost recovery in terms of operation and maintenance and replacement costs. However, this will also largely depend on the appropriateness of the technology being used its adaptability to suit local conditions and its impact on the environment and to provide a sound institutional back up is essential also for the success of a project.

The study team assessed several indicators of sustainability. These include functioning of the system; effective financing, management, participation and use.

5.1 Indicators of Sustainability

5.1.1 Functioning of the System

The study established that most of the Kwale water systems are still functioning as evidenced by the Mnyenzi, Mwangoni, Mwembeni and Mwenengo water systems. Although some of the systems were observed to be out of order, brief discussions with the users established that they only lacked basic spare parts or were in the process of repairing them.

Community	Water system	Status	Lowest and highest [Downtime]
Mnyenzi	Hand pump	Functional	½ days – 3 weeks
Mwangoni	Hand pump	Functional	2 days – 3 months
Mwembeni	Hand pump	Functional	2 hours – 1 day
Mwanengo	Protected spring	Functional	Nil

The water systems are mainly managed by women except at Mwangoni where men are the majority. At Mwangoni men dominate the management of the water system. Also Mwangoni recorded the longest down time during the wet season when the system is not much used due to availability of alternative sources.

The water users were trained on aspects of operation and maintenance of the system. However the accessibility and compromised quality of the spares has a negative impact on repairs. Since the hand pumps have a lifespan of 30 years, it is too early to evaluate its long term functionality. Most of the hand pumps have not exceeded 10 years.

All the four water points have adequate yields all the year round. This meets the needs of the people and enhances the functionality of the systems.

5.1.2 Effective Financing

All the users in the four communities pay user fees but at different rates. Mwembeni and Mwenengo pay a flat rate per month while Mnyenzi and Mwangoni pay according to their consumption. Households which are unable to pay for water are not denied the service.

In the drier parts of the district such as Mwangoni, user fees are charged only during the dry season when the hand pump is in peak demand.

In all the water points, the user charges are not adequate to cover operation and maintenance costs. In most members make additional contributions to meet the O & M costs. Also no water committee had arrangements for replacement costs or major repairs.

Financial management was found wanting. The user fees collected are managed by either one or a few officials. Proper records are yet to be kept.

Though aspects of financial management training were covered during the project implementation, it was apparent that the skills acquired were not being practiced. However, the Mwenengo water committee did not receive training on financial management.

5.1.3 Effective Management

The water systems are managed by water committees in all the four communities that were visited. These committees are responsible for meetings, repairs, record keeping, water sales and cleanliness.

Mwembeni and Mwenengo have scheduled meetings whereas Mnyenzi and Mwangoni meet on ad hoc basis. These meetings address among other issues, ways and means of managing and responding to the needs of the water point. However no minutes of previous meetings were available.

Each of the four committees has members trained in operating and maintaining the systems. They undertake minor repairs but hire trained artisans from outside the community when unable. It is commendable that the minor repairs are undertaken on a voluntary basis by the users. This also contributes to the timeliness of repairwork.

It was observed that most of the minor repairs and down time of the hand pump systems did not exceed two days. However, the repairs of the protected springs are very low.

At the time of the study, all the water points were fairly clean. The aprons were slabs and the drainage was in good condition. The immediate surroundings were well swept and the grass out. The quality of the water is however uncertain as testing of the water in the water points was done only at the time of construction.

All the four water communities assessed had some form of records kept. The records of funds collected are inadequate and there are no budgets prepared; Mwembeni and Mwenengo have bank accounts. Records on repairs are also limited.

In spite of some of the management shortcomings mentioned above all the water systems were in a generally good working condition. There is a lot of enthusiasm on the part of the committee and community members to ensure that the systems are functioning. However, in every community, it was noted that there is one of two highly trusted members bestowed with most of the major responsibilities of keeping the systems functioning.

5.1.4 Effective Participation

At the initiation of the project, the service agency held public meetings to inform the communities and create awareness of the water and sanitation project in the district. Community leaders also informed their members of the project.

The service agency did the feasibility study but involved the community members in site selection and planning for other implementation activities. The provision of technical information by the service agency limited the extent to which the community members could participate in sites and choosing the technology.

The community members both men and women were involved in the implementation process in accordance with their ability to contribute labour and locally available building materials. Women in particular contributed more towards cooking for the artisans and fetching water for construction except Mwangoni village where men organized food to be prepared in a public eating place and water was brought in by the service agency.

The users, both men and women made small cash contributions to purchase food for the artisans during implementation. There was no mandatory requirement that people contribute cash towards the purchase and installation of the water systems.

The communities determine the user fees payable, the mode of payment and the service hours for the water systems. They also determine their water committee through elections.

The repairs are done by trained community members. Both men and women are trained in maintenance except Mwangoni where only men were trained to undertake repairs. The women in Mwangoni village are not involved in most of the operations because of the male dominance. They are however, very interested in the operations and are willing to be trained and share in the responsibilities.

5.1.5 Effective Use

The water facilities are easily accessible to the potential users. Along the coastal zone [Mnyenzi and Mwembeni], the water points are located within a radius of about half a kilometer. In the hinterland such as Mwangoni, some members who live 3 km and above do not use the facility during the wet season because of the available water pans near their homes.

In the hinterland, where traditional water pans are still highly being valued, the hand pump is used mainly during the dry season. In the coastal zone [Mnyenzi and Mwembeni], alternative sources are only used when the hand pumps have broken down. In Mwenengo, water from the protected spring is available throughout the year and its use is also consistent. Nevertheless, less than 10% of the village members still occasionally draw water from their traditional sources for domestic use other than drinking.

The consistent use of the systems is a positive indicator of the behavioural change of the users. Although communities in the hinterland do fall back on their traditional sources during the wet season, they reported that they now boil their water before drinking or use roof catchment tanks to collect drinking water.

The observed high consistency in use could also be attributed to the low user charges. The highest charge was recorded at Mnyenzi where one 20 liters jerrican cost Ksh.1 only [Ksh.70 = US\$1]. For less than 10% of the users who are sometimes unable to pay follow – up is uncertain and never enforced.

About 75% level of satisfaction was reported in all the water communities studied. This was consistent with the effective use observed.

General observations indicate that the Kwale Water and Sanitation Project meets most of the conditions for the project sustainability. Although the functioning of the water points currently rests on few individuals within the communities, there is still room for increased participation of the users.

5.2 DEMAND RESPONSIVENESS

From the discussions and the voting exercises, it may be concluded that the community members demands for water are adequately met. The benefits and values derived from the use of water were used as proxies for the level of their satisfaction.

The information gathered from the communities, shows that 50% - 80% of their potential demands are met for both men and women, rich and poor. The data also indicate that, of the proportions of the benefits delivered, over 80% are worth the costs.

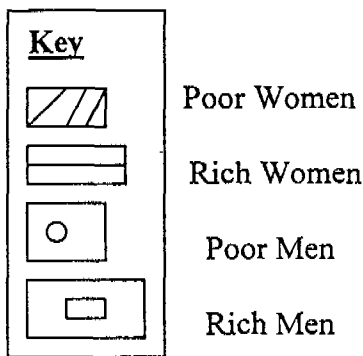
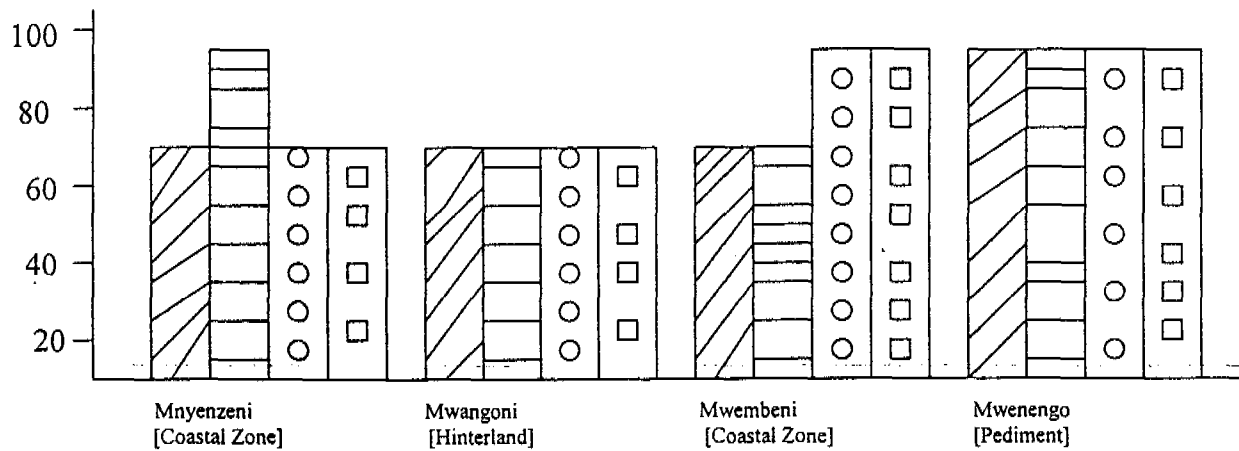
Time saved in fetching water and improved health were highly noted. Benefits derived and value worth of water for agricultural production [kitchen gardening] and constructions were less valued.

However, at Mwenengo the use of water for agriculture [trees and fruit tree seedlings production] was highly valued due to the financial benefits obtained from selling the seedlings.

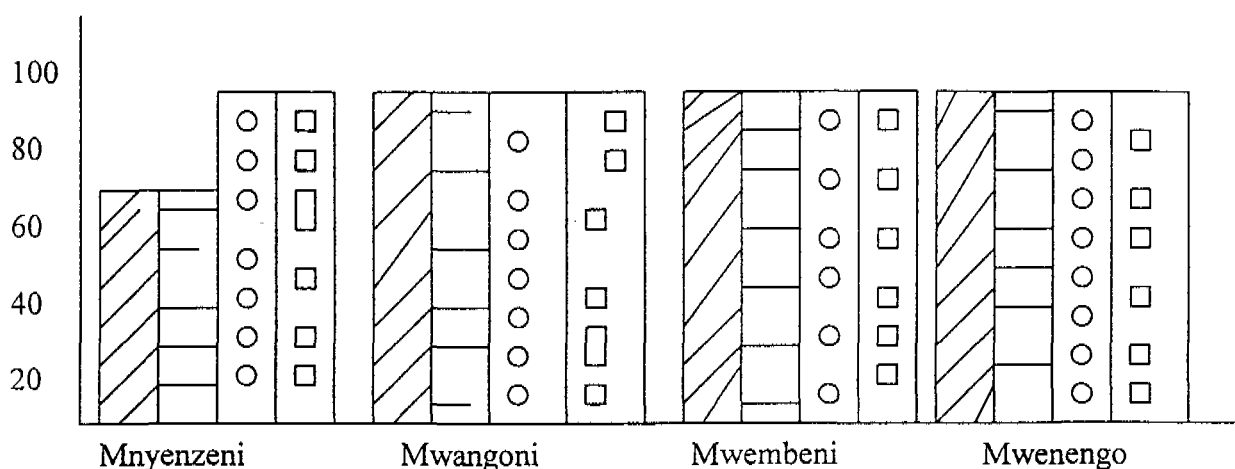
Although time saved was a benefit enjoyed by all the communities, children benefited more by having more time to spend on their schoolwork. The respondents in Mwangoni were proud of the fact that their children can learn during the dry season when other schools are forced to close. Time spent on travelling long distances to fetch water for their family use is drastically reduced.

The use of open water holes posed a threat to the safety of children in the villages. Provision of the protected wells and boreholes has minimized the potential danger of drowning and other hazards. This was notable in Mwembeni and Mnyenzi.

Potential Demands Met



Benefits Worth of Costs



SANITATION

5.1.6 Functioning of System [Sanitation]

Sanitation component of the whole project was found to be weaker than the water component. The few latrines which were constructed during the project are found in institutions. Many of the toilets in these institutions have collapsed. However, two toilets at Mwangoni are functional. It was observed that private toilets in individual homes that were built with the support of the project have all collapsed. This could have discouraged the community members from replicating the systems.

5.1.7 Effective Financing [Sanitation]

The village members who wanted toilet facilities had to dig holes in anticipation of project assistance to construct the toilets. However, the members remarked that the service agency did not get to deliver the services. The school facilities were fully financed by the service agency with parents contributing unskilled labour and locally available materials such as water, sand, stones and wood. There are no levies on the use of these facilities.

5.1.8 Effective Management

The only project latrines that were observed at Mwangoni are in good condition because they are used by the teachers. The school is responsible for all the management aspects of the facilities.

Schools have provided alternative ordinary latrines, which are fairly well managed. Further, urinals are provided within the school for both boys and girls.

It was noted that it is only the well off households in Mnyenzi and Mwangoni that have toilet facilities, which are fairly well maintained. In Mwenengo, 90% of the households have ordinary toilets, whereas in Mwembeni, 25% of the households have toilets.

5.1.9 Effective Participation

The community members' involvement at the initiation of the project started at the public barazas except for Mwembeni. During these meetings, the community members were made aware of the benefits of having latrines in their homes.

The village members dug holes as required and were to be provided with slabs, vent pipe and instructions on construction. However, in most cases these were not provided by the service agency.

In the schools, except for Mwembeni village, community members contributed unskilled labour and locally available materials. The service agency demanded that the facilities be located in institutions. The service agency was also promoting only one type of technology, VIP latrines.

5.1.10 Effective Use

The Mwembeni and Mwenengo communities have ordinary toilets in schools while only Mwangoni village has VIP latrines in the school. Mwembeni village has no demonstration VIP latrines.

Where ordinary household latrines are available, the community members use them except in Mwangoni where those who have latrines occasionally use the bush. In all the communities where latrines were not adequate, sharing the facilities is generally accepted.

Accessibility to latrine facilities in Mnyenzi and Mwangoni is about 34% and less than 25% respectively for households. In Mwenengo accessibility is over 90% of the households. Accessibility to excreta disposal facilities is about 30% for all the four communities put together.

5.2 GENDER AND PARTICIPATION

5.2.1 The Context of Gender Participation

Gender participation refers to active involvement of men, women and children in development projects. It recognizes and promotes the respective roles of each group as partners in development. It attempts to identify positive aspects of gender roles and to promote them.

It therefore strongly advocates for gender policy for countries in order to maximize development efforts for men, women and children. This in turn enhances sustainability of development projects.

In the case of the Kwale Water and Sanitation Project [KWASP], gender was not considered as the focus. Rather the emphasis was on the role of women in water and sanitation. This was because women were the ones who were burdened with problems of fetching water. In the light of this, the analysis of gender and participation must be based on the objectives of the KWASP to reduce diseases such as cholera, bilhazia and a number of diarrhea diseases.

Hence the sanitation was built into the water project. Whenever a community was involved in the developing a new water source, it had also to be involved in improving their sanitation facilities and the environment generally. While the water element was under the field extension team, the sanitation element had its own sanitation extension and facilities targeting institutions such as schools and health centres while some centres had slab casting activities for distribution to the community. These activities were under the control of the public health technicians.

5.2.2 Roles and Responsibilities Between Men and Women, Rich and Poor

The KWASP worked on the premise that Muslim women were disadvantaged and had no voice in development. Specifically in water and sanitation project although women were the primary users of water, they had no say. It was therefore clearly stated initially that the water of KWASP was to give women chance to take leadership.

The project identified the following roles and responsibilities for the water groups.

- Borehole siting
- Securing land agreement with land owner
- Provision of construction materials
- Provision of unskilled labour
- Formation and registering of water committee by Ministry of Culture and Social Services
- Opening and operation of bank accounts
- User fee determination and collection
- Training on operation and maintenance voluntarily by users
- Cleaning site
- Repairs
- Maintaining hygiene practices at the water point and home
- Security of the water source
- Management training organization by project
- Training other members in operation and maintenance and organization and management
- Hold regular meetings
- Keep records
- Start income generating activities e.g. kitchen gardens for future sustainability
- Exchange knowledge among groups
- Prepare for taking over water facility from the project management

5.2.3 Roles and Responsibilities of Water Groups

Data for this section is derived from information collected in the history of participation, card scoring and Ladders II, which dealt with decision making, community contribution and tasks performance by different members of the community, that is men and women, rich and poor.

a) **Decision Making**

Attempt was made to establish who was responsible for the following decisions:

- Project initiation
- Choice of technology
- Site/location
- Management system
- Users fees/size
- Maintenance system

For each of these decisions the community was asked to vote on who made the decision. Overall, the results show that:

- In Mnyenzi, the project made decisions on project initiation, choice of technology, while the community village committee took decisions on siting and the water committee took decisions on management system and user fees.
- In Mwangoni the project agency made decisions on siting, choice of technology and project initiation. While the water committee made decisions on management system and user fees.
- Mwembeni residents reported that the community only made decisions on siting of the borehole. All the other five decisions were made by the project agency.
- Responsibility for decision making was less clear at Mwenengo. All were agreed that the community decided on siting and initiation. Some felt the management system was the decision of the community, yet others felt the water committee decided on initiation and siting. And all felt that the management system, maintenance and user fees were decisions of the water committee. Nobody mentioned the project agency.

The results show that the community had very little decision-making powers. Most of the decisions were taken by the project, which was in line with the initial focus of the project which was neither gender sensitive nor participatory, but focused mainly on women in development issues.

b) **Tasks Carried out by Men and Women**

The main tasks listed by the different communities were:

- Meetings
- Selling of water
- Repairs
- Purchasing of materials and spares
- Keeping records
- Cleaning the source area
- Security of the source
- Paying and collecting user fees

- Unskilled labour

Most of these tasks are common to all the communities. However, all communities were not training members in management. Although most of them said they kept records, their records were not up to date.

The following tasks were done by men:

- Unskilled labour and major repairs
- Security at night – in some community such as Mnyenzi
- Repairs in Mwangoni
- Buying of spare parts [Mwangoni, Mwembeni]
- Collection of user fees [Mwangoni]
- Record keeping [Mwangoni, Mwembeni]

The tasks done by women alone were:

- Cleaning of water source area
- Clean spring box in Mwenengo
- Minor repairs [Mnyenzi, Mwenengo, Mwembeni]
- Security [Mwembeni]
- Paying user fees [Mwembeni]

Tasks done by both men and women were:

- Repair and maintenance
- Cleaning of sites [Mnyenzi]
- User fee collection [Mnyenzi, Mwembeni]
- Meetings [Mnyenzi, Mwembeni]
- Buying spares [Mwenengo, Mwembeni, Mnyenzi]
- Repairs [Mwembeni]
- User fee determination [Mnyenzi]

The assessment revealed frequency and duration of tasks are follows:

c) **Repair and Maintenance**

Frequency ranged from when necessary to twice a month and twice a year. Repairs lasted from a few hours to three months.

d) **Unskilled Labour by Men**

Frequency ranged from when need arose and lasted a maximum of two days. Security at night was done every day for one hour and is done by only one member. Cleaning of water source area was done at Mwenengo and Mwembeni every day for about fifteen minutes and at Mwangoni cleaning was done weekly for ten minutes. A review of frequency and time taken on each task shows that the tasks are not heavy or time consuming for any group.

In all the communities, there is no discrimination against any socio-economic group. Both the rich and the poor perform tasks. Regarding remuneration for the tasks: in Mwenengo, there is no payment for any tasks; in Mwembeni there is token payment for repairs usually at Ksh.40 per repair when funds are available; Mnyenzi, the member who sells water is paid Ksh.10 per day and in Mwangoni during dry season Ksh.30 is paid per day for selling water.

Also in Mnyenzi pump caretakers are paid Ksh.300 for each repair for each team of caretakers. But if caretakers work with outside technicians on the pump the caretakers are paid Ksh.10 only. In two communities all members are expected to play a role in operation and maintenance of the water source. In Mwembeni those who do not pay are barred from using the borehole. Also when the source area is dirty, the borehole is closed. Similarly in Mwenengo those who do not carry out tasks without good reason are fined Ksh.50 and those with justifiable excuse are fined Ksh.20.

e) Community Contributions

This assessment looked at both contributions for establishing the water service and for operation and maintenance. The following contributions during initiation and implementation were listed by the communities:

- Clearing of bush
- Drawing water
- Hardcore sand and murrum
- Cash for feeding builders
- Cooking for artisans
- Assisting in construction

Most of the contributions were common to all the four communities. However, cash was only paid by men in Mnyenzi for food to feed the builders and in Mwangoni the very poor were exempted. In Mwembeni, even though very few contributed they did not find the contribution a big burden.

In Mwembeni and Mnyenzi bush clearing was done by men only, both rich and poor. In Mwenengo and Mwangoni bush clearing was done by both men and women, both rich and poor. Similarly in all the communities, materials were carried by both men and women, both rich and poor.

In Mnyenzi water was provided by both men and women although the men's role was small. This was also the case in Mwenengo. In Mwembeni only women provided water for construction.

Regarding provision of food, women cooked food in all communities except Mwangoni where food was cooked in a Public eating place hotel. Men contributed cash in Mwangoni to buy food while in Mwenengo men gave food. In Mwembeni only the rich women cooked food but in Mnyenzi and Mwenengo both poor and rich women cooked food.

Overall men did the heavy tasks related to traditional gender roles of men. Women also performed their traditional contributions of cooking and fetching water. But women also contributed to traditional men's roles like bush clearing and carrying stones. In addition women still had to carry out their home duties. It can therefore be concluded that women both rich and poor contributed more to the water source than men.

5.2.4 Needs of Men/Women/Rich/Poor

Before the project each of the communities had certain felt needs for water. Some of the needs were common to all the communities. These included clean soft and safe water, adequate for all, accessible all the time, and protected from contaminating agents. For some communities these needs cut across both men and women and all socio-economic groups. For others women had specific needs from men. For example in Mwembeni women could not send children to draw water from open wells and the pond/river for fear of them ^{drawing} drawing or catching bilhazia and other water borne diseases. In Mnyenzi the standpipe was too far for certain groups. In Mwenengo crabs used to bite women drawing water from the unprotected springs.

In Mwangoni women had to travel a distance of 20 km during dry season to get water and men had to assist their wives to do this. Men's needs both rich and poor included availability of sufficient water for construction and more accessible water. Regarding the rich and the poor, the results of this assessment show that the needs cut across all socio-economic groups.

In all the four communities, the level of satisfaction with water services was very high. In Mwenengo and Mnyenzi all were fully satisfied. In Mwembeni more than 75% were satisfied and in Mwangoni the level of satisfaction was about 50%. There were no cases of dissatisfaction.

The low level of satisfaction in Mwangoni is probably due to the fact that the borehole being on the school compound made no provision for a cattle trough. As a result water for cows has to be drawn from the borehole draw point competing with other uses. This creates congestion at the draw point. Additionally it is a hard task to pump enough water for livestock.

In all the four communities different benefits were mentioned. The common benefits to all the four communities were safe and clean water and timesaving. Safe water benefit was expected because of the identified needs before the project. This was also the case with time saving, which relates to both accessibility and adequacy of water. Both of these were identified needs in all the four communities.

Another benefit which was common to three communities was water for watering plants. In Mwenengo this referred to a tree nursery project funded by the Green Belt Movement which

benefited directly from the protected spring. Both Mnyenzi and Mwangoni used water for watering flowers and kitchen gardens respectively.

A number of benefits were specific to particular communities. For example in Mwangoni, the effect of water on school time was significant. Before the project the school had to close during the dry season. With water, the school remained open throughout the term. In Mwembeni safety of children drawing water was considered one of the main benefits and was in fact one of the two rated highest [90%].

The main reason was danger of children drawing water from a 19.5 m deep open well and a deep river/pond which were also bilharzia infested. The overall rating of water benefits is shown the table below. The data indicate that women rated water value lower than men. But all groups rated water over 70%.

Table Overall Rating of Water Benefits

Community	Male		Female	
	Rich %	Poor %	Rich %	Poor %
Mwembeni	100.00	100.00	80.00	93.00
Mwenengo	90.00	83.00	77.00	88.00
Mnyenzi	68.00	76.00	80.00	68.00
Mwangoni	60.00	60.00	53.00	53.00
Mean	79.50	79.75	72.50	75.50

Worth of Benefits

Table Overall Rating of Worth of Benefits

Community	Male		Female	
	Rich %	Poor %	Rich %	Poor %
Mwembeni	97.00	100.00	90.00	93.00
Mwenengo	100.00	100.00	73.30	93.33
Mnyenzi	96.00	80.00	72.00	72.00
Mwangoni	60.00	60.00	53.00	53.00
Mean	88.25	85.00	72.00	77.80

5.2.5 Sanitation Benefits

In three of the four communities the sanitation project was based at the neighbouring villages. Except in Mwangoni no demonstration was done within the communities. Nor did any member of the community in the assessment areas receive support for latrine construction. In Mwembeni the community received only sanitation awareness. It is possible that two of the residents who had constructed VIP latrines learnt from the project. The third VIP latrine belonged to a retired civil

servant who was definite that he did not learn from the project. It is therefore clear that the project was of very little benefit to Mwembeni. In the other three communities, there was no awareness education. The benefits in Mwenengo were derived from latrines built from experience before the project. It is most likely that the Akamba residents of Mwenengo brought with them the latrine use practice from their original homes in Eastern Province.

5.2.6 Perceptions

All communities saw the water as a gift because none of them was involved in the initiation and choice of technology. But the project stressed the need for the community to participate fully and take complete control of subsequent management, operation and maintenance. As a result in all the communities, most members seem to have accepted the new water source as their own. The communities contributed significantly to the construction of their water facility in terms of construction materials, labour, and feeding the builders.

Similarly, in all the communities effective management structures were set up and the water systems regularly repaired. At the time of the assessment two years after the project ended three out of the four systems were operational, and serving the communities effectively. Only the pump in Mwangoni had broken down but was quickly repaired within a day during the assessment.

However, in all the communities there were a few members who had not fully accepted the water system as their own to sustain. Examples of these are as follows:

- **Mwembeni:** seven families had refused to pay for water as required on the ground that the borehole was a government project whose responsibility it was to maintain.
- **Mwenengo:** 2 families did not make the required monthly contribution of Ksh.5 because the spring water was a gift from God. To them the question of maintenance did not seem to arise even after protection of the spring.
- **Mnyenzi:** although the community decided to sell water to raise funds for operation and maintenance and from time to time raised the water charge per pot to ensure adequate income, the funds generated were never adequate when repairs had to be done. Members had to contribute from their pockets. This suggested that there was a problem in the management of income from water sales.
- **Mwangoni:** experienced similar problem as Mnyenzi.

In addition other perception problem included the following.

- It seemed that some communities still saw their water source as a gift which could be replaced by the same donor when the need arose, an indication that the community did not need to worry about the future of their resources.
- In other communities there was a feeling that they should have got something better [a borehole instead of a protected spring] or that the package they received was not complete [a bathroom for the spring area]. This resulted from the feeling that other communities got more.

All communities perceived the sanitation element as a separate activity by the health workers. They did not think it had anything to do with their water resource. The fact that the sanitation was based at schools and health centres tended to reinforce this perception.

The Mwembeni community, which seemed to have been more aware of the sanitation project than all the others, waited to be assisted to dig pits that would not collapse as promised by the project. They saw failure in meeting this obligation on the part of the project as a big let down.

Perceptions of men and women on the water project were by and large influenced by the focus of the KWASP. Both men and women accepted that the water project was a gift to benefit women and as required by the project management committees were dominated by women. In Mwembeni the men showed openly that they had very little to do with water issues. Overall perceptions of men were not different from those of women. Nor did the rich have different perceptions from the poor.

5.3 IMPACT

5.3.1 Access and Effective Use

Each of the water sources in this assessment focused on a particular target group. In Mwembeni 30 households, in Mnyenzi 35 households, in Mwenengo ten households and in Mwangoni 470 households. The results of this assessment show that water is accessible to all the target groups in each community. In Mwembeni the water is now used by 52 households and in Mwenengo the number of households has increased to twelve.

However, in Mwembeni seven families who do not pay for water have been barred from use. Similarly when the borehole is not cleaned water is closed by the village chairman. In Mwenengo water is accessible to everybody all the time being a spring.

In addition in Mnyenzi water is accessible to non-members who wish to buy water. In Mwangoni water is accessible to everybody during dry season.

Regarding reliability of water the assessment revealed that water is reliable all the time in Mwembeni, Mnyenzi and Mwangoni but in Mwenengo, the water was not reliable throughout the year. The yield dropped drastically from December to March during the dry season.

The main problem in Mwangoni is the influx of outside users during the dry season leading to long queues thus inconveniencing members. The assessment also revealed that water was used very effectively for domestic uses, for construction, livestock and in Mwenengo for an income generating tree nursery. In addition in both Mnyenzi and Mwangoni the rich use water for kitchen gardening and sell to outsiders for income generation.

5.3.2 Behavioural Change

Behavioural change was assessed by looking at water uses and sources before, during and after the project. Before the project, Mwembeni and Mwenengo communities used open water systems [open well in Mwenengo] for drinking, cooking and washing utensils. But after the project these communities used protected sources for these purposes.

In Mnyenzi before the project only the rich men, rich women and poor women used the stand pipe for drinking, cooking and washing utensils. The poor men used a shallow well for drinking and cooking and the swamp for washing utensils. After the project all groups used the borehole for drinking, cooking and washing utensils as well all other uses. This shows that for the poor men a major behavioural change had taken place.

Regarding sanitation in Mwangoni, before the project the rich used ordinary latrines while the poor used the bush. After the project all groups used the bush, despite the fact that a few homes for the rich had latrines.

The group admitted that everybody used the bush mainly due to their socio-economic activities e.g. grazing. The school had a demonstration VIP latrine but it was only used by the teachers. Pupils used the bush since their toilets had collapsed.

In Mwembeni, before the project there were four traditional latrines, one hole and makuti walls and the rest of the households used the bush. After the project there were only thirteen latrines for fifty-two households. Out of these, three were VIP latrines all constructed after the project. The impact of the project was on providing information rather than demonstration or supporting households to improve their latrines in all the four communities.

Hand washing practices after the projects were as follows: In Mwangoni there was no hand washing after defecation while Mnyenzi there was. The poor men washed sometimes with sand but mostly with soap and water. The other three groups all washed with soap and water. In Mwembeni two poor men washed with water only while three poor men used soap and water. In Mwenengo all washed after defecation using soap and water.

5.4 SUSTAINABILITY

5.4.1 The context of Sustainability

Sustainability refers to the ability of a system to continue functioning after initiation. A sustainable system is one, which is

- Functional – it serves the purpose for which it was designed
- Functions effectively – it is efficient
- Has effective management – it is well managed in terms of deployment and utilization of resources.

Requirements for Sustainability Functional System

The main requirements are:

- Relevant objectives
- Active involvement of target groups in design and implementation
- Design and implementation must relate to objectives
- It must be feasible.

Effective Functioning

The requirements include:

- Meets set targets
- Not wasteful
- Provides adequate water for target group
- Is in good state of repair
- Repairs are timely

Effective Management

This implies

- Proper allocation of resources
- Continued monitoring and evaluation
- Preparation for future needs e.g. expansion, replacements.

5.4.2 Field realities Functionality

The objectives of the KWASP were relevant because they focused on community needs at the time in terms of water availability, accessibility and quality. However, the project was designed without active participation of the target group. As a result, the communities did not understand what the pump-testing project was about. Many felt that it was a gift from somewhere. In all cases the community was informed of what the project required of them in terms of time, materials and how to manage and maintain the system. It was made clear to them that the system was theirs.

5.4.3 Effective Functioning

In the four communities in this assessment, effective functioning level was varied. In Mwembeni the borehole was well protected, but the draw point platform was beginning to wear out. The platform was well reinforced with two concrete skirting levels, but the concrete drainage channel was wearing out from the sides. The water was only tested at the time of pump installation.

In Mwenengo II, the spring was well protected but the maintenance was poor. The draw point base was worn out, the polythene membrane covering drainage channel back fill was damaged and required replacement. In Mwangoni the pump had broken down and was just repaired during the assessment. But the repairs were very minor.

It is clear from this analysis that though the four water systems was in working perfect physical condition, it was unclear how long they will continue functioning.

5.4.4 Effective Management

All the water systems had a management committee, which were reported to be meeting at least twice a year. However, none of the committees were effective. In one case the village chairman had taken over all the powers of the committee. In another case there was a male advisor who seemed to have control of all matters.

In a third project there was a power struggle for the position of treasurer and in the last community a group of men controlled the system.

In all cases income was generated from the water system either through user fees or sale of water. However, in all the four communities no proper record of accounts were kept. In one case member including officials did not know how much was in the bank. Utilization of income from water was also questionable. Despite the fact that one system raised considerable income from sales, there never was adequate balance for repairs, and members had to contribute for operation and maintenance.

There was no indication that members monitored their system closely for timely detection of weaknesses. Similarly there was no evidence that any of the systems had plans for necessary future expansion or replacement of a failing facility. For instance, members did not seem to be aware that boreholes had a limited life span.

When asked what they would do if the borehole life came to an end one leader said that matters are left to God, an indication that there was no fund for future needs and developments. It was also clear that none of the communities considered meeting increased demand for water as their responsibility. They all asked for more. Regarding sanitation, since very little had been attempted, the issue of sustainability may not arise.

CHAPTER SIX

6.0 POLICY FRAMEWORK

The UN water conference held in Argentina in 1977 recommended that quantitative targets be established by nations to ensure that all people have access to a safe water supply and sanitation facilities by 1990. The KWASP was planned as part of the follow up action plan by Kenya. The plan was formulated and coordinated at the national level by a steering committee.

A survey on the ground was carried out by a team of experts from the Ministry of water Development and Health with the support of UNDP and the World Bank. The coastal strip of Kwale district was chosen as an intervention area because of the then widespread and endemic prevalence of waterborne diseases such as diarrhea, bilharzia and cholera.

The goal of the project, like the UN IDWSSD objectives were to provide a reliable and safe water supply at reasonable distance [less than 500 m] and adequate sanitation to the residents of the project area. A secondary objective of the project was to test a variety of hand pump types in order to gather information of their sustainability. In the process, the Afridev hand pump was developed. The approach included an intensive community involvement and training programme which was instituted to ensure the sustainability of installed capacities.

The project was staffed and managed by local professionals from government departments and a non-governmental organization with limited support from the World Bank and UNDP. The vision was to deal with the issues of water supply and sanitation in an integrated manner and include community participatory approaches.

The project was later expanded to cover the whole of Kwale District as part of the Kenya – Sweden Rural Water Supply Programme. The expanded programme aimed to assist rural communities in Kwale District with the provision of appropriate water supply and sanitation facilities through community organization, health education and training. Improved step-by-step approaches were developed with strong focus on meaningful community/beneficiary involvement, appropriate technology, affordable solutions, joint cooperation and acceptance of responsibilities by the different stakeholders. The project was planned and implemented with three clear objectives.

- To contribute to the provision of sustainable water supply facilities to rural communities of the district.
- To contribute to increased coverage and use of household latrines [both traditional and improved pit latrines].
- To initiate the integration of project activities into government district structures.

The District Focus for Rural Development strategy adopted by the Kenya Government since 1983 was incorporated into the project planning and implementation. The strategy is based on the

principle of complementary relationship between Ministries with their sectoral approach to development and the districts with their integrated approach to addressing local needs.

The strategy involves a bottom – up approach to planning whereby the districts have autonomy in setting their own priorities. The decision to decentralize was made due to the realization of the shortcomings of a centralized planning which led to a situation where projects were designed without the local people's involvement.

The strategy also encouraged all the beneficiaries of government programmes and services to make contributions through a cost-sharing system. Such contributions can be in the form of materials and labour. In some areas of Kwale district gender relationships were sensitive. With this regard, every opportunity was made for meaningful involvement of women without alienating the potential support of other groups.

6.1 Key Findings

- The PLA methodology though appropriate for cross checking information was found too tedious.
- The four days spent in each community facilitated confidence building and group interaction but the period limited the sample size to only four communities making it difficult to generate adequate statistical data which can be extrapolated for generalization.
- The water supply systems were found to be functioning and reliable.
- Communities were able to meet O & M costs but had no provisions for replacement.
- Payment for water services was timely where user charges were instant but not timely where charges were periodic.
- Management of water supplies systems was controlled by a few influential individuals.
- Record keeping was found to be poor.
- Except for the hinterland water coverage in other communities studied was over 90%.
- Although communities were involved in implementation the choice of technology was decided by the service agency.
- Gender was not a factor in the design of the project. The project initially focused on the role of women in water and sanitation projects.
- Traditional roles of men and women were evident during implementation.
- Both women's and men's roles are gradually changing.
- The rich and poor performed the same roles, but in crisis the rich contributed more especially in cash.
- The water needs of both the rich and poor were met by the project.
- Although most people embraced the project as their own, a few still saw it as somebody else's property and had expectations of further external aid.
- Most communities now used improved water sources for domestic purposes.
- School terms in the hinterland were more consistent and attendance had improved with water availability.
- More time was saved for more productive activities as a result of access to clean water.

- Project objectives were relevant to the needs of the people, project implementation strategy was participatory and people centred, and flexible.
- Institutional arrangements of KWASP which promoted collaboration of several stakeholders during implementation was minimal after the completion of the project.
- Awareness on sanitation was carried out at household level but the pit latrines promoted were too expensive for replication.
- Few people who had latrines did not use them at all times.
- Expectations on sanitation were not met by the project and communities saw sanitation as a separate component from water.
- Hygiene practices have improved.

6.2 Conclusions

- The PLA method enhances group interaction and confidence.
- Quantitative data generated was inadequate for generalization.
- PLA methodology was a learning experience for both the assessors and members of communities.
- The water technologies promoted were appropriate but only O & M costs were affordable.
- Management committees were weak.
- Communities can run the water facilities on a commercial basis as an economic/social good.
- Management skills and knowledge from earlier trainings are not being applied.
- The water technologies promoted are relatively expensive compared to community members' economic status.
- Communities have not planned for replacement or replication of their water systems.
- Water coverage is lower in the hinterland than in the Coastal and pediment zones.
- Project design favoured institutional sanitation, but did not address household needs.
- The project should have promoted use of basic latrines before introducing the VIP latrines.
- Involvement of both men and women greatly contributed to the success of the project.
- Water and sanitation components were not well integrated.
- There was change in behaviour of water uses.
- Project contributed to human resource development within communities especially for O & M but currently they lack technical support and coordination.
- Lessons learnt in the project have contributed to the development of the water sector policy.

6.3 Recommendations

- The PLA method should be adapted to suit different conditions.
- Efforts should be made to collect additional quantitative data from a larger sample for statistical extrapolation.
- The water management committees should be revitalized.
- The issue of poor quality of spares should be addressed.
- Additional water sources should be developed for the hinterland.
- The sanitation component in the District should be revisited.
- Women and men should be encouraged to participate in non-traditional roles.

- There should be greater integration of water and sanitation components in projects.
- Technical advice and regular follow up [monitoring] by parent Ministries should be enhanced.

REFERENCE

Republic of Kenya. The study on the National water master plan 1992.

Republic of Kenya, District Focus for Rural Development Revised February 1995.

Kwale District Water Supply and Sanitation Project – various reports.

Republic of Kenya National Development Plan 1998 – 2001

UNDP/World Bank Water and Sanitation Program. Clean Water and Better Sanitation Volume I
1997.

Republic of Kenya – Kwale District Development Plan 1997-2001.

ANNEX 1

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 Project Staff.