

**A SOCIO-ECONOMIC IMPACT OF LETABA WATER USERS ASSOCIATION
ON EMERGING BLACK FARMERS AT MOPANI DISTRICT MUNICIPALITY,
LIMPOPO PROVINCE**

BY

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Mini dissertation submitted in partial fulfillment of the requirements for the degree in Master of Development, in the Graduate School of Leadership, Faculty of Management Sciences and Law, University of Limpopo

NOVEMBER 2007

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DECLARATION

I, Ramabulana Munzhedzi Euphemia hereby declare that this dissertation submitted to the University of Limpopo for the degree of Master of Development, in the Graduate School of Leadership, Faculty of Management Sciences and Law has not previously been submitted by me for degree at this or other university. I further declare that this my work and all material contained therein has been duly acknowledged.

Signed: õ õ õ õ õ õ õ õ õ õ õ õ õ õ ..

Date: õ õ õ õ õ õ õ õ õ õ õ õ õ õ õ ..

ACKNOWLEDGEMENTS

I would like to acknowledge the following people who contributed to the completion of this dissertation:

- My sons Masana and Maduvha Mavhusha, their presence in my life gave me a whole new meaning and inspiration.
- My mother and father Gladys and Reckson Ramabulana, my brother Tshamaano, sister Lumbedzani, my nieces Dakalo and Katlego and my kidsnanny Tshifularo Mathobo, I truly cherish their utmost financial and emotional support that they have provided me throughout the years.
- My in-laws Arthur and Takalani Mavhusha, your support cannot go unmentioned.
- My friends Mavhungu Luruli and Musasi Mutshekwanani for their immeasurable emotional support.
- My colleagues: Israel Raphalalani and Konanani Khorommbi, I truly appreciate your support.
- Lastly, my supervisor Prof D.G. Kirov for guiding me throughout this dissertation.

DEDICATION

In memory of my late husband Martin Munzhedzi Mavhusha (1965 . 2003).

Good people die young. Your passing on was not expected. You have left the beautiful and inerasable footprints in our lives. You will always be in our thoughts and we will always cherish the memories.

You are truly missed . May your soul rest in peaceq

ACRONYMS

CMA - Catchment Management Agency
CMS - Catchment Management Strategy
DWA - Department of Water Affairs and Forestry
HDI - Human Development Index
HDR - Human Development Report
HIV/AIDS - Human Immunodeficiency Virus /Acquired Immune Deficiency Syndrome
IB . Irrigation Boards
IWRM . Integrated Water Resource Management
LED- Local Economic Development
LGDS . Limpopo Provincial Growth and Development Strategy
LWUA . Lebalelo Water Users Association
LWUA . Letaba Water Users Association
MDG . Millennium Development Goals
NEPAD . The New Partnership for Africa's Development
NGO - Non-Governmental Organization
NWA . National Water Act
NWRS . National Water Resource Strategy
OAU . Organization of African Unity
RDM . River Basin Management
SADC - Southern African Development Community
SA . South Africa
WAR . Water Allocation Reform
WMA . Water Management Areas
WMIO . Water Management Institutions Overview
WRC . Water Research Commission
WRM . Water Resource Management
WRPO . Water Resource Planning Organization
WSA . Water Services Authority

WSDP . Water Services Development Plan

WSP . Water Services Provision

WSSD . Water for Social and Sustainable Development

WUA . Water Users Association

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ABSTRACT

Water is a basic need and everybody has a right to have access to it, be it for consumption or irrigation. The principle of rights is applicable in every sphere of life even in the utilization of water resources.

South Africa is faced with a problem of water scarcity and deterioration of water resources. The country is in a process of transforming water resource management and has developed different policies and strategies aimed at achieving effective and sustainable utilization of water resources. On the other hand the government has an obligation to meet set national and international targets. The latter can never be achieved without water which is at the center of both economic and social development.

The integrated water resource management has been initiated and different institutions have been established i.e. Catchments Management Agencies and Water Users associations. The WUAs are aimed at managing water resources at local level and have been established to replace whites-only Irrigation boards. The National Water Act 36 of 1998 aims at addressing past imbalances provides for WUAs to control, maintain and operate water resources and to ensure equal distribution of water to all users. The act also provides for complete involvement of historically disadvantaged individuals in water resource management processes.

The emerging black farmers have been given an opportunity to participate in the WUA activities. The farmers can now utilize water resources equally like other users which has given emerging black farmers an opportunity to engage in farming activities and contribute in the economic growth of the country. Emerging black farmers can farm products which are sold at local, national and international markets.

Emerging black farmers can now earn a living and improve their standard of living. The farming activities have made it possible for farmers to provide for their families, pay through their children's education, health services, provide shelter and food security. Farming has created jobs for community members.

This research is aimed at assessing the socio-economic impact of LWUA on emerging black farmers of Mariveni and Mavunda farming schemes under Mopani district Municipality in the Limpopo Province. The inclusion of emerging black farmers in LWUA activities has made it possible for them to get water allocation which has made it possible for them to engage themselves in farming activities. The farming activities that the farmers are engaged in have made it possible for the farmers to contribute towards the economy of the country and provide for their families by paying through their children's education, health services, food and shelter.

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CHAPTER 1

BACKGROUND AND ORIENTATION

1.1. BACKGROUND

Water is a vital resource for human survival and the economic development. As populations and economies grow, water demand also increases while the availability of the water resource remains constant. Shortages engender water use conflicts, both in terms of quantity and quality (Integrated Water Resource Management Report, 1996: 1).

On the other hand, About South Africa Report- Department of Water Affairs and Forestry (2004: 1) states that "South Africa is a water stressed country and water planners and managers are being faced with increasingly complex issues. The country is largely semi-arid and prone to erratic, unpredictable extremes in the form of droughts and floods. Many large storage dams have been constructed to regulate the natural variable flow, of rivers and facilitate water transfers between catchments. Rivers are the main source of water in South Africa."

South Africa is in the process of addressing legacies of the past regime. The latter has affected all fields of development including Water Resource Management. The country was divided into Bantustans or homelands and provinces which were dominated by whites. The white minority received first priority in the delivery of services such as roads, education, water supply, agriculture and the use of water resources. Irrigation boards were responsible for water resource management at the local level and membership was only granted to whites.

South Africa is at a point where, after the complete revision of its water and sanitation policies that accompanied the democratic transformation, more

attention is being given to implementation. The new policies and associated legislation are not the only about ensuring adequate quality and quantity of water for human need but they are also about protecting the resources available for current and future use so that the national slogan of ~~some~~ some for all, forever can be realized (WRM 1998: 1).

The new government has developed various policies and strategies geared at addressing past imbalances and skewed distribution of services. In terms of Water resources management the government has developed the National Water Act (Act 36 of 1998), which also provides the principles for water resource management. The objective of this policy is to manage water resources in an integrated manner that will ensure a healthy and stable water resource base to meet the current and future needs of South Africa.

The National Water Act Act (Act 36 of 1998) deals with all water resources including rivers, streams, dams and groundwater. It contains rules about how water resources such as ground or surface should be used. The Act also provides for the establishment of different water resource management institutions like the Catchment Management Agency (CMA) and the Water Users Associations (WUAs). The whole of South Africa has been divided into 19 Water Management Areas. The Act provides for the establishment of Catchment Management Agencies, which would be managed by the WMA. Water Users Associations are currently being established at local level to replace irrigation boards and would operate under CMAs. The Department of Water Affairs and Forestry has also established WUAs in areas where there were no structures for water resource management.

This study seeks to assess the socio- economic impact of Letaba Water Users Association on emerging black farmers. The Letaba WUA is situated in the Limpopo Province, in the vicinity of the town of Tzaneen. This WUA manages the irrigation water use from the Ebenezer, Nondweni and Tzaneen dams as well as

the Greater Letaba River near Tzaneen up to the border with the Kruger National Park. Commercial farmers pump water either from the Great Letaba River or from one of the five canals. An area of 12,500 hectares is irrigated in the river valley, mainly for fruit tree farming such as citrus, mangos and litchis. The emerging black farmers are formally involved in the WUA and sit on the management committee (Faysse, 2005: 32). The Letaba Water Users Association is part of the Levubu . Letaba Water Management Area which is WMA no: 2. (See Appendix A and B).



Plate 1: The Ebenezer Dam

1. 2. STATEMENT OF THE PROBLEM

Water Users Associations have been established under the National Water Act Act (Act 36 of 1998) to replace Irrigation boards, which were established under the previous Water Act (Act 54 of 1956). The Irrigation boards only focused on

irrigation developments and benefited few people mostly whites. The Water Users Associations have been established in order to benefit all water users.

Pegram and Mazibuko (2003: 6) state that in terms of the principles of redress, the needs of community subsistence agriculture and emerging farmers require particular attention.

The government of South Africa (SA) has embarked on the process of restructuring the water resource management of the country. This was done after it was realized that SA is a water scarce country and an integrated approach into water resource management needs to be implemented in order to conserve and protect water resources at the same time ensuring that the little water that is available in the country is shared equally. The government developed policies and strategies aligned with the vision of transforming water resource management. Different institutions are being established such as Catchment management agencies and water users associations.

1. 3. MOTIVATION OF THE STUDY

The researcher is motivated by the experience she has gained in the Department of Water Affairs and Forestry where she is employed since 2001 as a Community Development Officer. Part of the researcher's duties within the department has been to establish Water Users Associations within Vhembe District.

Professional curiosity also led the researcher in undertaking this study since water users associations are new and unique institutions. Water Users Associations were established with the aim of redressing past imbalances, improving people's lives, combating poverty while ensuring effective management of water resources. The researcher would like to determine the level of social and economic impact of Letaba WUA on emerging black farmers.

1. 4. AIM AND OBJECTIVES

The study aims to assess the socio- economic impact of the Letaba Water Users Association on emerging black farmers.

In order to reach the above-mentioned aim the following objectives need to be realized:

- To determine the role and functions of Letaba Water Users Association.
- To assess the effect that Letaba WUA's roles and functions have had in improving the social and economic status of emerging black farmers within its area of jurisdiction.
- To determine as to whether the Letaba Water Users Association has been able to meet its objective as directed by the National Water Act.
- To investigate whether the Letaba WUA has improved the standard of living of emerging black farmers for sustainable livelihoods.

1. 5. DEFINITION OF CONCEPTS

Emerging farmers: are previously disadvantaged farmers who are aiming to make a transition to commercially based agriculture (<http://www.csiro.au/science/ps2n2.html>).

Socio- economic assessment: is a tool used to predict the future effects of policy decisions upon people and can be used to assist people in dealing with change. It provides a better understanding of the scale and the distribution of costs and benefits of change; it seeks to maximize positive effects and minimize negative effects resulting from this change (Socio-economic assessment: Guidelines for River, Groundwater and Water Management Committees, 1998: 2).

Water Users Association: is a co-operative association of individual water users who wish to undertake water related activities for their mutual benefit. A WUA is a statutory body established by the minister under the National Water Act, and operates at a local level (Water and Sanitation Business, 2001: 13).

Water Resource Management: is the decision-making and manipulative process by which water is allocated or developed (www.apsu.edu/wet/whatis.html).

Water Resources Management: is the integrating concept for a number of water sub-sectors such as hydropower, water supply and sanitation, irrigation and drainage, and environment. An integrated water resources perspective ensures that social, economic, environmental and technical dimensions are taken into account in the management and development of water resources (<http://web.worldbank.org/WBSITE/EXTERNAL/TOPICS/EXTWRM/0,.html>).

Catchment: A land area from which rainfall drain into the watercourse, through surface flow (for example a river) to a common point (Guide to the National Water Act, 1998: 15).

Catchment Management Area: the area managed by a catchment management agency, which is a statutory body established in terms of the National Water Act and manages water resources under its water management area (Water Management Institutions Overview, 1998: 10).

Integrated Water Resource Management: is simultaneously a philosophy, a process and implementation strategy to achieve equitable access to, and the sustainable use of, water resources by all stakeholders at catchment, regional, national, and international levels, while maintaining the characteristics and integrity of water resources at the catchment scale, within agreed limits (<http://www.mvula.co.za/page/521>).

1. 6. RESEARCH QUESTIONS

This study aims to provide answers to the following questions:

- How has Letaba Water Users Association addressed the social needs of emerging black farmers and their immediate families?
- Has there been economic growth within the agricultural sector of communities under study as a result of agricultural activities?
- To what extent has the Letaba Water Users Association created business opportunities for sustainable livelihoods?
- Has the Letaba Water Users Association changed the quality of life of emerging black farmers and community members within Letaba WUA,s area of jurisdiction?
- Has the LWUA effectively met its aims and objectives as a Water Users Association?

1. 7. SIGNIFICANCE OF THE STUDY

The study could provide information to the Department of Water affairs and Forestry and the Water Sector with information on the socio-economic impact of Water Users Associations on their beneficiaries with more emphasis on emerging black farmers. The research will also assist water sector stakeholders in identifying gaps and remedies.

Since there is not much research and literature available on this subject, this research will contribute to the knowledge and information on such institutions, which can be utilized by the department and other practitioners in policy

development. This study can also serve as a basis for more research on Water Users Associations.

CHAPTER 2

LITERATURE REVIEW

2.1. INTRODUCTION

This chapter will review the literature related to the socio-economic impact of Water Users Associations with more emphasis on emerging black farmers and will also focus on the different institutions that are responsible for water resource management. Secondary data information shall be gathered from official documents, books, journals, internet sources, published and unpublished reports.

2.2. WATER AS A SOCIAL AND ECONOMIC GOOD

In the South African context, water is first and foremost treated as a (social) common good. Water is recognized as being essential for sustaining life and is a commodity to which people and the aquatic environment have a protected legal right. However water is also recognized as an economic good, the use of which has a major impact on the creation of wealth and the well-being of people (Water Research Commission: Knowledge Review, 2004/05: 261).

Water resources are used in various ways including direct consumption, agricultural irrigation, fisheries, hydropower, industrial production, recreation, navigation, environmental protection, the disposal and treatment of sewage, and industrial effluents. Water has sources and supplies, economic, social, and political characteristics which make it a unique and challenging natural resource to manage (http://www.eoearth.org/article/Water_resources). To affirm the latter (<http://www.fao.org/docrep/007/y5582e/y5582e04.htm#>), states that water provides goods (e.g. drinking-water, irrigation water) and services (e.g. hydroelectricity generation, recreation and amenity) that are utilized by agriculture, industry and households.

However, the social value of agriculture warrants special consideration when deciding on the competitive allocation of water among sectors. Food security and job creation greatly enhance human dignity and contribute to the reduction of social ills such as crime and poverty. Schreiner and Van Koppen, as cited by Levite, Fayse and Ardorino (2002: 59) supported the notion that water should become an instrument of progress and social development.

The International Conference on Water and Environment, held in Dublin, Ireland in January 1992, concluded, among other things, that water has an economic value in all its competing uses and should be recognized as an economic good+ (http://www.eoearth.org/article/Water_resources/).

2.3. THE VALUE OF WATER TO DIFFERENT SECTORS OF THE ECONOMY

Water is central in the social and economic development of the country as well as the growth of the economy. Various sectors rely on water in order to operate.

2.3.1. Agriculture

The Agriculture sector accounts for about 62% of water utilization in South Africa. It supports a significant portion of the South African economy and contributes to rural development. In addition to supplying the local market with staple foods, such as wheat, maize, potato, vegetables and various fruits, much agricultural produce is exported. Besides assuring food security for the country, the Agriculture sector contributes to employment and job creation throughout the food production chain. Secondary industries such as transport, preservation and packaging are also supported by the Agriculture sector. The social value of the Agriculture sector should thus be emphasized because of its major contribution to food security and job creation (DWAF: Water Conservation and Demand Management Strategy for the Agriculture Sector, 2004: 6).

2.3.2. Mining and other industries

The Mining industry contributes greatly to an economy of South Africa and the world. The industry utilizes a lot of raw and potable water for processing. Mining companies extract raw water from water resources such as rivers and lakes.

The establishment of Lebalelo Waters Users Association for instance was prompted by the need for the establishment of a water scheme that is going to supply water to the platinum mines around the area (Pregram et al, 2003: 58).

In terms of other industries, Hale and Lachowicz (1998: 293) argue that water is used in the industry for cooling, transportation and washing, and as a solvent. In some industrial processes, water enters the composition of the finished product. The principal water users are in thermal power production, chemical and petroleum plants, ferrous and non-ferrous metallurgy, wood pulp and paper industryq

2.3.3. Tourism and recreation

Most recreational activities and tourism as an industry rely on water, more specifically natural water resources. As indicated by Hale et al (1998:23) that tourism is the biggest industry in the world. It depends on the environment for its continued existence and success, and has a responsibility to the economies, cultures and the environment globally.

Hale et al (1998: 294) argue the value of water for recreation depends upon a number of factors such as the location, accessibility, scenic setting, and water quality.

2.4. WATER AS A BASIC NEED

Todaro (2003: 21) argues that all people have certain basic needs without which life would be impossible. These life-sustaining basic human needs include food, shelter, health, and protection. When any of these is absent or in critical short supply, a condition of absolute underdevelopment exists.

Prasad (2003: 251) indicated that water is a basic need and is used as follows:

- Water for People (Drinking and Sanitation),
- Water for Food (Agriculture),
- Water for Nature (flora and fauna), and
- Water for Industries and other uses (power generation, industry and others; other uses shall consider water uses for cultural and religious uses as required in some countries).

2.5. THE ROLE OF WATER AND AGRICULTURE IN SOCIAL AND ECONOMIC DEVELOPMENT

Water deprivation is intrinsic to poverty. Lack of access to safe and nearby drinking water and proneness to water-borne diseases are widely recognized as poverty dimensions per se. While water is essential for crop cultivation, livestock, fisheries, small industries, and other components of rural people's diversified livelihood strategies, poor people often lack the assets and technologies to harness water to these ends. Even though the scale of their enterprises is typically small, the poor even lack access to the small quantities of water that could considerably increase enterprise productivity and reduce their vulnerability to droughts and climatic changes (Svendson, 2004: 176).

Water is a primary input into agriculture; it has an important role in the sector because without water irrigation will not take place and any efforts therefore will prove fruitless. Even though fertilizers and seeds are available for farming

without water, there will not be any products. Therefore the sector will not be able to create jobs; food security will be less and people will be prone to diseases and malnutrition.

Agriculture is the largest user of water in all regions of the world except Europe and North America. In 2000, agriculture accounted for 70 percent of water withdrawals and 93 percent of water consumption worldwide, where consumption refers to withdrawals net of returns flows and evaporation. This is in contrast to industry, which accounted for 20 percent of withdrawals and 4 percent of consumption worldwide in 2000, and household use, which accounted for 10 percent of withdrawals and 3 percent of consumption. The water requirements of agriculture are large relative to water requirements for other human needs (<http://www.fao.org/docrep/007/y5582e/y5582e04.htm#>).

Brenos (2006:79) indicated that agriculture is essential for the alleviation of poverty, generating income and employment, bringing about food security and sustaining a buoyant domestic market for industry and services. In addition Hossain (2001: 4) stated that food is a major component of the consumer basket of poor households and their entitlement to food depends not only on nominal incomes but also on the level of food prices. The growth in agricultural productivity is the base on which rural non-farm sectors develop. It is a necessary condition for the accumulation of capital and the development of markets for non-farm goods and services. Low, stable food prices are also necessary for the competitiveness of industries, the accumulation of industrial capital, socio-economic stability, and political stability. Herein lays the role of agriculture in alleviating poverty.

Agricultural development makes a critical contribution to overall economic growth in many developing countries. As farmers' incomes rise, so does their demand both for farm inputs and services, and for non-farm goods. Increased agricultural

production also leads to increased demand for processing facilities (http://www.unep.org/PDF/OurPlanet/OurPlanet_WorldBank_web_en.pdf).

2.6. INTERNATIONAL GOALS RELATING TO WATER RESOURCE MANAGEMENT

2.6.1. Millennium Development Goals

The eight Millennium Development Goals (MDGs) . which range from halving extreme poverty to halting the spread of HIV/AIDS and providing universal primary education, all by the target date of 2015 . form a blueprint agreed to by all the world's countries and the entire world's leading development institutions. They have galvanized unprecedented efforts to meet the needs of the world's poorest (<http://www.un.org/millenniumgoals/>).

The global challenges of hunger, poverty and disease have led to an increasing focus within the global initiatives- policies and strategies - on conditions and developments in rural areas in the South, where three quarters of the world poor population live. In 2005 such initiatives included the Millennium Development Plan, the G8 Africa initiative and the establishment of global donor platforms for agriculture and rural development aimed at the achievement of the Millennium Development Goals (Sida Studies, 2006: 11).

The Human Development Report (2006:22) states that The Millennium Development Goals are the world's time-bound targets for overcoming extreme poverty and extending human freedom. Representing something more than a set of quantitative benchmarks to be attained by 2010, they encapsulate a broad vision of shared development priorities. That vision is rooted in the simple idea that extreme poverty and gross disparities of opportunity are not inescapable features of the human conditions but a curable affliction whose continuation diminishes us all and threatens our security and prosperity.

Millennium Development Goals

Goal 1: Eradicate extreme poverty and hunger

Goal 2: Achieve universal primary education

Goal 3: Promote gender equality and empower women

Goal 4: Reduce child mortality

Goal 5: Improve maternal health

Goal 6: Combat HIV/AIDS, malaria and other diseases

Goal 7: Ensure environmental sustainability

Goal 8: Develop a global partnership for development
(<http://www.un.org/millenniumgoals/>).

The above-mentioned goals are in a way cross cutting within all dimensions of development, whether it is basic water provision, health, education, infrastructure, and/or sanitation. Water is a basic need and is central in an achievement of all the above-mentioned set targets. For the world's poor to have food there should be sustainable water provision for irrigation. The food produced from agricultural activities will assist in combating diseases, improving maternal health, reduce child mortality and malnutrition and alleviate poverty because people will be able to get jobs and provide for their families.

2.6.2. New Partnership for Africa's Development (NEPAD)

According to the NEPAD Framework Document (2001: 59) the objective of the New Partnership for Africa's Development is to consolidate democracy and sound economic management on the continent. Through the Programme, African leaders are making a commitment to the African people and the world to work together in rebuilding the continent. It is a pledge to promote peace and stability, democracy, sound economic management and people-centered development, and to hold each other accountable in terms of the agreements outlined in the Programme.

The NEPAD Framework Document (2001: 60) concludes by stating that NEPAD has identified sectoral priorities in order to bridge the infrastructure gap. Water and Agriculture are amongst the identified infrastructure priorities.

The following are objectives for water and sanitation, namely;

- To plan and manage water resources to become a basis for national and regional cooperation and development;
- To cooperate on shared rivers among member states;
- To effectively address the threat of climate change;
- To ensure enhanced irrigation and rain fed agriculture to improve agricultural production and food security.

The latter confirms that South Africa as a member of NEPAD has an obligation to implement the above mentioned objectives. This could be realized if the country has developed policies, regulations and institutions which are effective and efficient management of water resource. The establishment of institutions like catchment agencies and water users association contributes to meeting the set NEPAD objectives. Effective management of water resources results in equal distribution of water to different users which make it possible for them to achieve their social and economic goals.

Consequently, governments have to support the provision of irrigation equipment and develop arable lands when private agents are unwilling to do so (NEPAD Framework Document, 2001: 35).

2.6.3. The Accelerated and Shared Growth Initiative for South Africa - (ASGISA)

The objectives for AsgiSA are as follows:

- ~ Reduce the unemployment rate from 30% to 15% by 2014.
- ~ Reduce poverty from one-third to one-sixth of the population by 2014.

“ Increase the annual GDP growth rate from the then average of 3% to 4,5% per year for the period 2005 to 2009 and to 6% for the period 2010 to 2014. This target should create a sustainable annual growth rate of 6% (<http://www.info.gov.za/otherdocs/2007/jipsarep.pdf>).

South Africa is faced with a problem of high unemployment and poverty rate. Both water and agriculture contribute towards an economic growth of South Africa and can therefore have a positive impact on the lives of the poor by providing jobs and sustainable livelihoods. The two are imperative in the realization of ASGISA's objectives. Poor resourced farmers should be given an opportunity and resources to participate in farming activities of which in the end will also contribute to the local, regional and global economy. Establishment of effective water resource management institutions will result in the latter

2.7. POVERTY, WATER AND DEVELOPMENT

2.7.1. Definition of poverty

Brenos (2006: 75) indicated that poverty according to the Human Development Report, 1997, is the denial of opportunities to lead a long, healthy, creative life and to enjoy a decent standard of living, freedom, dignity, self-respect and the respect of others. In addition Twirlwall (2006: 36) stated that poverty is the inability of people to attain a minimum standard of living.

In their paper Koppen et al (2003:3) argue that as a legacy of the apartheid regime, poverty is widespread and inequities are huge in South Africa. Almost 50% of South Africa's population is income poor, spending less than 353 Rand (US \$60) per adult equivalent per month. The linkages between water and poverty are multiple. Poverty is defined as a state and process of multi-dimensional deprivation, affecting economic, health-related, psychological, socio-cultural, legal, and political facets of wellbeing.

Poverty can be seen at three levels, i.e. the individual or family level, the community level, and the social level. At the individual and family level, to be out of poverty, a person must be able to earn or arrange for at least two wholesome and nutritious meals a day. At the community level, people do not have a sense of deprivation if drinking water, electricity, roads, health and educational facilities etc. are provided for everyone's use. At the social level, people are better off if they get the social respect that has been denied to some classes of people by the society for a long time (Koppen et al, 2003:3).

On the other hand Ahmad (2003: 264) mentioned that poverty is in reality a multi-dimensional phenomenon. It has physical, economic, human, social and psychological dimensions which include lack of access to land and other assets; poor housing facilities; lack of access to agricultural inputs such as water, seeds and fertilizers; unemployment and underemployment; lack of access to the financial resources; food security; lack of access to safe water and sanitation; illiteracy, lack of skills and lack of educational and training opportunities; vulnerability to illness; social exclusion or lack of participation; lack of freedom of choice; cultural backwardness; vulnerability and exploitation under the ongoing socio-economic and political processes.

Van der Berg and Louw (2004) cited by Meyer (2007:73) have tried to estimate the overall poverty levels in South Africa from 1970 to 2000 using the available data. When using a poverty line of R3000 per capita (2000 rand values), they have found poverty values to have been relatively stable. According to their optimistic estimates, the overall poverty headcount ratio in 2000 was 36.4 per cent, implying that 16 262 294 people could be classified as poor. In absolute numbers poverty has increased only because of a growing population.

2.7.2. Types of poverty

2.7.2.1. Absolute/ Subsistence poverty

According to Meyer (2007:72) absolute or subsistence poverty involves identifying poverty in terms of those basic needs essential to life . items such as adequate clothing, food (including water) and shelter. By defining poverty in absolute terms we assume that all individuals have similar minimum requirements, and that those people whose meal falls below the required minimum are poor.

Todaro et al (2003:787) again argues that absolute poverty is a situation where a population or section of a population is, at most, able to meet only its bare subsistence essentials of food, clothing, and shelter to maintain minimum levels of living.

2.7.2.2. Relative poverty

In contrast relative poverty is a far more flexible concept. It is defined on the basis of the judgments of each particular society as to what is considered a reasonable and acceptable standard of living, according to conventions of the day. Hence, an individual who is unable to attain this reasonable and acceptable standard is considered poor. For instance if TV sets, videos, DVDs, fridges and motor cars are considered part of ~~the~~ civilized existence, then without them a person is considered poor (Meyer, 2007:73).

2.7. 3. Poverty and development in rural areas

Wiggins and Proctor (2001:427) indicated that rural areas are clearly recognizable. They constitute a space where human settlement and infrastructure occupy only small patches of the landscape most of which is

dominated by fields and pastures, woods, and forest, water, mountain and desert. A stylized fact that describes the countryside is poverty of so many inhabitants.q

Poverty is predominantly a rural phenomenon; urban poverty is only a spill over of the rural poor who migrate to urban areas in search of some source of livelihood. The emphasis has been on removing rural poverty through a three-pronged approach:

- Agricultural development
- Promote rural self-employment by helping the beneficiary to own some productive asset through a mixture of subsidized bank credit and outright subsidy.
- Provide direct wage employment to the unemployed/under employed by utilizing the labour to create and maintain community assets like irrigation tanks, roads, and so on (Brenos, 2006:79).

Todaro et al (2003:15) argue that ~~in~~ strictly economic terms, development has traditionally meant the capacity of a national economy, whose initial economic condition has been more or less static for a long time, to generate and sustain an annual increase in its gross national product (GNP) at rates of perhaps 5% to 7% or more. They further add that (2006:22) development has three objectives which are as follows:

- To increase the availability and widen the distribution of basic life-sustaining goods such as food, shelter, health, and protection.
- To raise levels of living, including, in addition to higher incomes, the provision of more jobs, better education, and greater attention to cultural and human values, all of which will serve not only to enhance material well-being but also to generate greater individual and national self-esteem.
- To expand the range of economic and social choices available to individuals and nations by freeing them from servitude and dependence

not only in relation to other people and nation-states but also to the forces of ignorance and human misery.

Poverty is always very high in rural areas and results people always migrate to urban areas in seek of better life. Each and every country is faced with this challenge since the migration only adds to over population in urban areas. Agriculture is one sector that could assist in alleviating poverty by creation of self-employment and jobs for other community members.

Gilpin (2000:90) stated that development involves the application of human, physical, natural and financial resources to meet the prospective market demands and other human needs. The breadth of the concept is not always appreciated as it applies not only to industrial, commercial and financial institutions but to the provision of infrastructure, sanitation, educational facilities, hospitals and public health services, housing, roads, national parks, and tourist recreational facilities.

Therefore the provision of all the above facilities or infrastructure can bring about upliftment of the standard of living for the people. Water is a most critical need and is central in the provision of all the above mentioned facilities. For effective and efficient public health service delivery there should water, construction of houses need water et cetera.

Csaki (2001:565) indicated that the World Bank's agricultural strategy highlighted that the solutions in rural development must be based on community participation and empowerment, must strengthen rural governance. The World Bank's vision of a developing world is one in which rural communities offer equitable economic opportunities for all their residents regardless of income, status and gender; that rural communities adapt to on-going economic, social, cultural, environmental and technological change. The vision includes an

agricultural sector that makes a full contribution to national and global food needs, consistent with economic efficiency and environmental sustainability.q

The involvement of all beneficiaries and stakeholders is imperative in any development initiative to promote full participation and ownership of the initiative. Effective participation should be ensured from the initiation stage throughout the whole process to ensure sustainable development. In terms of water resource management, all water users should be involved through different structure or institutions like WUA so that decisions taken are informed by all affected.

2.8. POLICY AND LEGISLATION RELATING TO WATER RESOURCE MANAGEMENT IN SOUTH AFRICA

2.8.1. The National Water Act No.36 of 1998

According to Svendson (2004:152) the introduction of a democratic government in 1994 demanded changes in the skewed distribution of access of water for both basic and productive purposes. It offered a rare opportunity for comprehensive review of all water related legislation to develop a modern water policy appropriate to a water scarce region. This was done in a very deliberate and conscientious way under the farsighted Minister of Water Affairs and Forestry, Professor Kader Asmal and resulted in the new National Water act of 1998 that is widely regarded as a model piece of legislation.q

The National Water Act (Act No 36 of 1998:18) states that the purpose of this act is to ensure that the nation's water resources are protected, used, developed, conserved, managed and controlled in ways which take into account amongst other factors -

- Meeting the basic needs of present and future generations
- Promoting equitable access to water
- Redressing the results of past racial and gender discrimination

- Promoting the efficient, sustainable and beneficial use of water in the public interest
- Facilitating social and economic development
- Providing for growing demand of water use
- Reducing and preventing pollution and degradation of water resources
- Meeting international obligations
- And for achieving this purpose, to establish suitable institutions and to ensure that they have appropriate community, racial and gender representation.

In addition the National Water Resource Strategy (2004:11) states that "The National Water Act, (Act no 36 of 1998) derives directly from the Fundamental Principles and Objectives for a New South African Water Law for managing water resources. The Act is the principal legal instrument relating to water resource management in South Africa and contains comprehensive provisions for the protection, use, development, conservation, management and control of South Africa's resources."

The National Water Act provides for the establishment of four different types of water management institutions:

- Catchment Management Agency
- Water Users Association
- A body responsible for international water management
- Any person who fulfills the functions of a water management institution in terms of the Act (DWAF: Water and Sanitation Business, 2001:12).

2.8.2. The National Water Resource Strategy

The NWA requires DWAF to develop a National Water Resource Strategy (NWRS) to create CMAs in the 19 Water Management Areas and to delegate catchment-based water resources management functions to these CMAs.

The National Water Act (Act no 36 of 1998: 20) also states that the National Water Resource Strategy provides the framework for the protection, use, development, conservation, management and control of water resources for the country as a whole. It also provides the framework within which water will be managed at regional or catchment level, in defined water management areas. The national water resource strategy, which must be reviewed from time to time, is binding on all authorities and institutions exercising powers or performing duties under the Act.

The National Water Resource Strategy (2004:11) must provide information about the ways in which water resources will be managed and the institutions to be established. It must also provide quantitative information about the present and future availability of and requirements for water in each of 19 water management areas and propose interventions by which these may be reconciled.

2.8.3. Water Allocation Reform (WAR)

While South Africa's National Water Act and National Water Policy provide the legislative and policy framework for water allocations, they do not provide detailed strategies and approaches to promote equity, sustainability and efficiency in water use, or a process to roll this out across the country. Moreover, the process of water allocation to realize equity is likely to be both technically demanding and contentious (DWAF: Water Allocation Reform Draft Strategy, 2005: 03).

The water allocation process must support Government's poverty eradication and economic development strategic objectives. The Department of Water Affairs and Forestry and other Water Management Institutions should, therefore, work towards providing the water required to meet these objectives. Water allocation must promote the beneficial use of water in the public interest. This includes a commitment to the fair and equitable allocation of water to all South Africans,

which promotes social stability and investor confidence. However, while supporting the provision of water for uplifting the poor, the process should not fall into a poverty trap of only providing water to sustain basic livelihoods. The water allocation process should therefore also support and facilitate Broad-based Black Economic Empowerment (BBBEE) by promoting larger-scale productive commercial uses of water (<http://www.info.gov.za/gazette/otherdocs/2005/waterallocation.pdf>).

2.9. INTEGRATED WATER RESOURCE MANAGEMENT IN SOUTH AFRICA

2.9.1. The importance of water resource management

Csaki (2001: 568) argues that Natural resources provide fundamental support to the life and economic process in rural areas. Soils are the fountains of agriculture, forests help to protect water resources and provide income for more than 1, 6 billion people and water is essential for human life and agriculture. Inappropriate use of natural resources threatens rural livelihoods and creates formidable new challenges, such as global warming. The degradation of natural resources base affects the poor more than the others, as they tend to rely on fragile natural resources for their livelihoodsq

There are a number of terms used to describe an integrated process of assessing and managing water resources at the basin level. Most are variations on the terms integrated water resource management or river basin management (RBM). Integrated water resource management (IWRM) is a newer term and is defined by the Global Water partnerships in the following way: IWRM is a process which promotes the coordinated development and management of water, land and related resources, in order to maximize the resultant economic and social welfare in an equitable manner without compromising the sustainability of vital ecosystems (Svendson, 2004: 2).

According to Prasad (2003: 380) until recently water resource management focused almost exclusively on redistributing water to when and where people want it for their use. This is a supply-side (engineering) approach. But there are many signs that water is running out . or at least getting a lot less plentiful in more places as population and per capita water use grow . and damaging ecosystems from which it is withdrawn. So we need to look at what water is used for and to manage these competing claims in an integrated framework.

Water resource development and management in South Africa have, over the years, continuously evolved to meet the needs of the growing population and the vibrant economy, within the constraints imposed by nature. Sufficient water resources have been developed and are available to ensure that all current requirements for water can reasonably be met, without impairing the socio-economic development of the country (About South Africa: Department of Water Affairs and Forestry, 2006: 635).

Prasad (2003:38) indicated that planning water resource is certainly very complicated, since multiplicities of agents are implicated at the level of the consumption, or, rather, the utilization of water. Their goals, motivations and dynamics are diverse, and the degree of environmental inclusion varied. From agriculture, industry, household distribution and consumption, to the production of the hydro-electric power and the maintenance of recreational areas, the activities and bodies that intervene directly in the use of the water resources available are many. An integrated management is thus required, to minimize the natural conflicts and establish rules and priorities among the users.

Successful water resource management will therefore depend on all spheres of government, and the active involvement of water users and other organizations and stakeholders (National Water Resource Strategy, 2004: 11).

Protection and effective use of natural resources more especially water resources can be achieved by means of integrated water resource management which ensures that water usage is controlled and monitored. Water can be distributed equally to the users at the same time protecting the resources for future use. Distributed water can be used by users for agriculture which result in farmers being able to improve their quality of lives through provision of jobs and earning of income.

2.9.2. Restructuring of water resource management in South Africa

The department is in the process of a substantial restructuring, which commenced in 1999 and is expected to be complete in eight to 10 years time.

The restructuring process includes:

- Establishing catchment management agencies (CMAs) to perform water resource management functions currently performed by the department's regional offices
- Transferring the management of commercial plantations and indigenous forests to appropriate agencies and institutions
- Transferring water-services delivery and operations to water-services authorities (WSAs) (About South Africa: DWAF, 2006: 636).

The creation of new water management institutions and the transformation of existing ones will enable the Department to move towards its eventual role of policy development, regulation, monitoring and providing institutional support, and away from day-to-day management and operational activities. Activities in this regard include:

- Establishing the National Water Resource Infrastructure Agency, including transferring the responsibility for operating, maintaining and further developing national infrastructure;
- Establishing catchment management agencies

- Establishing water user association and transforming existing irrigation boards into water user association, including the transfer of the responsibility for scheme operation and maintenance to water user association where appropriate (DWAF- Strategic Plan, 2006/07: 20).

2.9.3. Transformation of Irrigation Boards into Water Users Association

All irrigation boards and subterranean water control boards that existed prior to the commencement of the Act must be transformed into WUAs. Certain water boards established in terms of the former Water Act for stock watering purpose will also be transformed into WUAs. In essence transformation of irrigation boards means that they should reform their operational area and management structure to be more representative of the demographics of the area, in terms of race and gender. South Africa has a history of inequitable access to resources. Transformation is one of the mechanisms to achieve equity. The Minister has issued guidelines concerning the composition of the management committee of a transformed irrigation board (DWAF . WMIO, 2005: 32).

Svendson (2004: 164) states that Law and Water rights have been separated by law, and there are some black water users that must be accommodated in the transformation of irrigation boards to WUAs. Small-scale irrigation farmers are getting organized into WUAs, albeit not rapidly.

2.10. Institutional framework for water resource management in South Africa

The National Water Act provides for the framework for water resource management. It outlines the different water management institutions as well as the specific functions of the different institutions.

2.10.1. The Minister and the Department of Water Affairs and Forestry

The 1996 constitution established water as a national competency vesting responsibility for water resources and services in the DWAF. The character of the Department was fundamentally transformed in terms of its functions and staff profile to respond to its mandate. DWAF embarked on an aggressive programme to speed up basic water and sanitation service delivery to the marginalized areas and changed the resources management paradigm from a supply-driven to the demand-driven approach (Svendson, 2004: 153).

The Minister of Water Affairs and Forestry is the custodian of water resources and has the ultimate responsibility to ensure that:

- Water resources are protected, used, developed, conserved, managed and controlled in a sustainable and equitable manner, for the benefit of all persons; and
- Water is located equitably and used beneficially in the public interest, while promoting environmental values.
- The Department of Water Affairs and Forestry is responsible for administering all aspects of the National Water Act delegated to it by the Minister or the Director-General. As the various water resource management institutions are established and the responsibility and authority for water resource management is delegated or assigned to them, the Department's role will change. It will increasingly focus on national policy, a regulatory framework for water resource management, and ensuring that other institutions are effectively fulfilling their roles and responsibilities (DWAF . WMIO, 2005; 7).

The DWAF's NWRS (2004: 85) also states that the Minister of Water Affairs and Forestry, as the public trustee of water resources on behalf of the national government, has overall responsibility for all aspects of water resources management in South Africa. All water management institutions are subject to

the Minister's authority. The Department is responsible for administering all aspects of the Act on behalf of the Minister. The Department is responsible for the development and implementation of strategies and internal policies, plans and procedures, and regulatory instruments relating to the Act. It is responsible for planning, developing, operating and maintaining state owned water resources management infrastructure, and for overseeing the activities of all water management institutions.

2.10.2. Water Resource Management Institutions

2.10.2.1. Water Management Areas

After a countrywide process of public consultation, 19 water management areas covering the entire country were established in October 1999. The boundaries of the water management areas (that is, those boundaries that are not defined by international boundaries or South Africa's coastline) lie mostly along the divides between surface water catchments. The number of water management areas and the location of their boundaries were determined by considering factors such as .

- “ The institutional efficiency of creating a large number of catchment management agencies, each managing a relatively small area, compared with a small number of agencies, each managing a larger area;
- “ The potential for a catchment management agency to become financially self-sufficient from water use charges;
- “ The location of centers of economic activity;
- “ Social development patterns;
- “ The location of centers of water-related expertise from which the agency may source assistance; and
- “ The distribution of water resources infrastructure (NWRS, 2004: 87)

2.10.2.2. Catchment Management Agencies

Catchment management agencies (CMAs) represent the second tier of the water resource management framework. A CMA will be established in each of the 19 water management areas. Each CMA is responsible for the progressive development and the broad implementation of a catchment management strategy. The catchment management strategy must be consistent with the National water resource strategy, within its water management area (DWAF . WMIO, 2005: 8)

Catchment management agencies will have jurisdiction in defined water management areas, and will manage water resources and co-ordinate the water-related activities of water users and other water management institutions within their areas of jurisdiction. An agency begins to be functional once a governing board has been appointed by the Minister (see also Advisory Committees below) and is then responsible for the initial functions described in section 80 of the Act [4], as well as any other functions delegated or assigned to it. The governing board must represent all relevant interests in the water management area and must have appropriate community, racial and gender representation. The initial functions of the agencies include (NWRS, 2004: 87).

According to Svendson (2004: 163), CMAs are intended to be more participatory and sensitive vehicles for managing basin water resources. They incorporate a mix of public and private characteristics but are still a work in progress and the exact mix of characteristics that will emerge remains uncertain. On the one hand, CMAs are intended to be self-financing and semi autonomous. On the other hand, they are expected to represent the broader public interests in protecting water resources and the natural environment.

According to <http://www.mvula.co.za/page/521> the CMAs will be responsible for planning, implementing and managing water resources. CMAs will also coordinate the water-related activities of other water management institutions and water users, and ensure public participation in WRM decisions. After establishment, CMAs will fulfill a set of initial functions. The Minister of Water Affairs and Forestry will delegate additional functions as the capacities of CMAs grow.

- Plan and implement Integrated Water Resources Management (IWRM) within a WMA;
- Investigate and advise interested persons on the protection, use, management, conservation and control of water resources;
- Develop and give effect to the Catchment Management Strategy (CMS);
- Promote coordination of the CMS and Water Services Development Plans (WSDPs);
- Promote stakeholder input, cooperation and agreement based on coordination of activities, cooperative governance, sustainable water use, and ensuring community participation in WRM.
- Additional functions that may be delegated to CMAs include general management of water resources in the WMA, developing policy and strategy, supporting other institutions, regulating water use, implementing water resources infrastructure, managing information, and auditing WRM. Some of these functions may be delegated over time depending on the size and capacity of the CMA, and other functions may be delegated or outsourced to the other water management institutions in the WMA. The type of CMA to be established will depend on factors such as water resource challenges and priorities, demographics, types of water use and water-related capacity (<http://www.mvula.co.za/page/521/>).

2.10.2.3. Water Users Associations

WUAs are associations of individual water users that undertake water-related activities for their mutual benefit. Water management activities may be devolved to WUAs in which case they become the third tier of water management institutions (DWAF . WMIO, 2005: 8)

Svendson (2004: 156) stated that "The 1956 Water Act provided for the establishment of membership based organizations called irrigation boards through which groups of farmers could join forces to develop infrastructure and jointly manage your water supply . essentially a type of WUA. These irrigation boards were eligible for one third capital subsidy on shared water supply infrastructure, but membership was legally restricted to people who had title to the land receiving services from the irrigation board. This effectively excluded black membership in white irrigation boards since blacks were excluded from land ownership in white areasq but there was also no similar institution available to groups of black farmers with similar needs.

2.10.2.4. Advisory Committees

The National Water Act (36 of 1998) empowers the Minister to establish advisory committees with different purposes and functions. Although primarily advisory in nature, such committees may also exercise any powers the Minister delegates to them. Advisory committees are responsible to the Minister, who may make regulations concerning their terms of reference, membership, powers, duties and operation. The National Water Advisory Council, the Advisory Committee on Safety of Dams and any advisory committee established under section 68(1) of the 1956 Water Act are regarded as advisory committees in terms of the Act. Although in most cases the establishment of an advisory committee is at the Minister's discretion, the NWA obliges the Minister to establish an advisory committee to make recommendations on the composition of the governing board

of a catchment management agency. The advisory committee must consult widely in the water management area to ensure that its nominations represent all relevant interests. The Minister must have good reason not to appoint the members nominated by the advisory committee, but the Minister may appoint additional members to ensure both full representation and the availability of sufficient expertise on the board for it to carry out its duties (NWRS, 2004: 91).

2.10.2.5. Forums

There is no specific provision in the National Water Policy or the NWA for creating forums for water resource management purposes. However, in the Department's experience such voluntary bodies have proved to be of great value in initiatives leading to the creation of catchment management agencies, and in addressing local water management issues. They have provided a focus for public consultation and for integrating the water-related activities of other non-governmental and community-based organizations. There is, however, a need to establish co-ordination mechanisms in each water management area to ensure that there is clarity of functions among the various forums and those issues of local concern are effectively and coherently communicated to the catchment management agency. Meaningful local participation in water matters must also be facilitated. In the past, forums have also made significant contributions to water resources management at a local level by, among other things, providing essential local knowledge, expertise and information (NWRS, 2004: 91).

2.11. Institutions for International Water Management

In addition to CMAs and WUAs, the NWA also provides for the following types of water management institution:

- Bodies responsible for international water management
- Any other person or bodies that fulfill the functions of a water management institution in terms of the Act (DWAFF . WMIO, 2005: 8).

South Africa's new water law reserves committed outflows to neighboring countries. South Africa is a signatory to a SADC Protocol on Shared Watercourse Systems based on the Helsinki Rules, the Dublin principles and the Agenda 21 of the Rio Earth Summit. The SADC protocol strives to maintain a balance between developmental needs of the member countries and the need for environmental protection and conservation. Signatories to the protocol commit themselves to seeking peaceful solutions to disputes. The protocol provides for the formation of basin wide commissions, such as those for the Okavango and the Limpopo (Svendson, 2004: 152).

Internationally shared river basins comprise about 60 per cent of South Africa's land surface. The Act, together with the Revised Protocol on Shared Watercourses in the Southern African Development Community, commits South Africa to sharing water in international river basins with neighboring countries in an equitable and reasonable manner. Accordingly, the Minister may, in consultation with the Cabinet, establish institutions to implement international agreements in respect of the development and management of shared water resources and to pursue regional co-operation in water matters (NWRS, 2004: 93).

The unequal distribution of water resource among the 15 member states of the EU, the impacts specific to the level of development, the diversity of the local and national institutions created to deal with the problems inherent to each country, are seriously complicating the question of water and making its management difficult. The policy of subsidiarity has been imposed, because the institutional consolidation of the water culture of each nation has led to the adoption of a wide variety socio-legal measures and technique (Prasad, 2004: 37).

2.12. WATER USERS ASSOCIATIONS

2.12.1. What is a Water Users Association?

A Water Users Association is a co-operative association of water users who wish to undertake water related activities for their mutual benefit. A WUA is a statutory body established by the minister under the National Water Act, and operates at a local level (Water and Sanitation Business, 2001: 13).

Water users associations are also defined in the Act as water management institutions, but the scope of their objectives and their geographical extent are more restricted than those of catchment management agencies. They are in effect co-operative associations of individual water users who wish to undertake water-related activities at a local level for their mutual benefit, and they operate in terms of a formal constitution as set out in guidelines prepared by the Department. The associations are expected to be financially self-supporting from income derived from water use charges determined and made in terms of the pricing strategy and payable by members. A water users association falls under the authority of the catchment management agency in whose area of jurisdiction it operates to the extent that the agency has received delegated powers from the Minister to direct the association's activities. An association may receive delegated powers and duties from, or be contracted by, the catchment management agency to undertake activities that are within its capacity to perform. The scope of the association's constitution must, if necessary, be amended to reflect the delegated or contracted activities (NWRS, 2004: 90).

A WUA is a statutory body established by the minister under the National Water Act. A WUA is a cooperative association of individual water users who wish to undertake water-related activities for their mutual benefit. A management committee governs a WUA (DWAF . WMIO, 2005: 27).

2.12.2. Different types of Water Users Associations

The Act provides for the establishment of WUAs for any form of water use as described in the act. However, there are two distinct types of WUAs that may be established, namely, a sectoral WUA and a multi- sectoral WUA (DWAF . WMIO, 2005: 27).

Pegram et al (2003:15) indicated that there are a wide range of possibly institutional scenarios within which a WUA can operate, depending upon the users, the local conditions (including infrastructure) and the local institutional capacity in the water sector. The scenarios are as follows:

- **Single Sector WUA**

The WUA represents a group of users from a single sector in a localized area, but not domestic and industrial water users provided with water services by local authority. Pegram et al (2003:15) In addition a Water User Association can either be Sector based or Multi-sector based. A sector based WUA acts in the interests and on behalf of a group of similar users. For example a group of emerging irrigation farmers could form a sector based Water Users Association, or a group with an interest in controlling recreational use and so on (Water and Sanitation Business, 2001:13).

- **Multi –User/Sector Group WUA**

A multi-sector based Water User Association acts in the interests of and on behalf of a combination of different water users, such as conversation, forestry, mining, and irrigation collectively (Water and Sanitation Business, 2001:13).

This scenario represents a situation where users from different sectors or user groups establish a WUA to perform activities for their mutual benefit, excluding Water Services related activities for domestic or industrial users. Pegram et al (2003:16)

- **WUA providing bulk water services**

This scenario introduces the possibility of a single or multi-sector WUA performing bulk water services activities (as part of its water resources management activities) for a local authority. This scenario is most likely in rural catchments, where municipal domestic and industrial use is relatively small compared to the other agricultural and industrial use and the WUA represents the major water sector management capacity within the area (Pegram et al, 2003:17).

- **WUA acting as Water Services Provider**

According to Pegram et al (2003: 18) the WUA takes the water services function of a single or multi-sector WUA to its extreme, with the WUA actually providing water services to the customers. This situation should be avoided where possible, as a WUA is not designed to be a WSP and it may complicate the ability of the WUA to perform its functions effectively. The only probable exception is for rural communities where there is weak local government and no effective local capacity for water services.

- **WUA on international trans-boundary catchments**

An international WUA is established on a trans- boundary water resource. Although this is not likely to be a common situation, it is most likely to be for a controlling irrigation on a river that two countries and riparian to or on a shared aquifer (Pegram et al, 2003: 18)

2.12.3. Purpose of a Water Users Association

The purpose of a Water Users Association is to enable people within a specific area to pool their resources, such as money, human resources and expertise, to carry out water-related activities more effectively. Through a WUA, members can benefit by addressing their water related needs and priorities. Water Users Associations operate at a restricted localized level. They provide a mechanism

through which the catchment management strategy can be implemented at local level. WUAs also have an important role to play in addressing poverty through food security (Water and Sanitation Business, 2001:13).

The purpose of a WUA is to enable people within a community to pool their resources (money, human resources and expertise) to more effectively carry out water related activities. Through a WUA members can benefit from addressing their local needs and priorities. WUAs operate at a restricted localized level. WUAs can provide a mechanism through which the catchment management agency strategy can be implemented at local level. WUAs also have an important role to play in terms of poverty eradication and providing food security (DWA . WMIO, 2005:27).

2.12.4. Functions of Letaba Water Users Association

According to the LWUA's constitution the association was established based on the provisions of the National Water Act 1998 (Act 36 of 1998). The objectives of the association are stated as follows:

- Operate and maintain the storage dams known as the Ebenezer, Nondweni and Tzaneen dams; the weir in the Great Letaba river known as , Yamorna, Junction, Jasi, Prieska and Nondweni in accordance to the agreement with the Department of Water Affairs and Forestry
- By means of waterworks under control of the Association, make water available to persons entitled to the use thereof in terms of section (1) of the Act
- In general see to it that persons abstract and use water in accordance with water use authorizations as provided for in section 22(1) of the Act

The association as indicated in the Constitution performs the following principal functions:

- To prevent water from any other water resource being wasted;

- To protect water resources and waterworks;
- To prevent any unlawful water use;
- To remove or arrange to remove any obstruction unlawfully placed in a water course or water use;
- To prevent any unlawful act likely to reduce the quality of water in any water course;
- To exercise general supervision over water resources and waterworks;
- To regulate the flow of any watercourse or waterworks ;
- To supervise and regulate the distribution and use of water from the watercourse according to the relevant water use entitlements by erecting and maintaining devices or requiring members to erect and maintain such devices at their own expenses;
- To suspend or reduce the distribution of water from a waterwork and or water resource under the control in so far as it is needed for the execution of any of the functions required for the proper operations and protection of the waterwork of resource;
- Providing management services, training and other support services to; water services institutions and rural communities.

2.12.5. Legal status of a Water Users Association

A WUA is a body cooperate and has the powers of a natural person of full capacity, except those powers, which can only attach to natural persons or are inconsistent with the National Water Act. This means that a WUA can do all the things an individual may do, such as open a bank account, and enter into contracts for supplies and borrowing money. A WUA can sue or be sued by another party. The National Water Act and the constitution of a WUA regulate its management and institutional functioning (DWAF . WMIO, 2005:27).

2.12.6. Benefits of a Water Users Association

The benefits of a WUA will depend upon its own reasons of establishment and the functions it will fulfill. The benefits may include the following:

- Users are able to jointly manage waterworks for their own benefit
- Users are able to pool their resources to achieve economies of scale. The development of individual small-scale works for emerging farmers for example is normally not financially viable.
- Users interests can be coordinated through a single body, and this: strengthens their participation and the negotiating power with the relevant CMA, and balances the interests of different users to avoid conflict
- A WUA provides statutory and legal status for groups of users, which increase their ability to access loans, grants and subsidies
- When a group wants to establish a WUA for a particular water use, they must first establish whether the WUA will bring about sufficient advantages to its members. Membership of a WUA is voluntary, so if the WUA does not provide the necessary benefits, it will not be able to keep its members (DWAF: Water Users Associations Guideline, 2005:7).

2.13. CONCLUSIONS

The following conclusions are based on the literature review conducted by the researcher for the purpose of this study:

- Water is a basic need and is necessary for social and economic development. Different commitments have been made internationally like the Millennium Development Goals. Nationally, the government has initiated the ASGISA to accelerate economic growth and to create jobs. Water is the most important catalyst for the achievement of the latter.
- To achieve effective water resources management in South Africa, different institutions should be established at different levels of the water sector. The government has developed policies and strategies and is

currently restructuring the sector to conserve and protect water resources. Equal distribution of water to all users is also imperative and can be achieved if there are institutions which manage water resources. The department is in the process of establishing Catchment management agencies and water users associations have already being established to achieve the above.

- Water Users Associations have been established to manage water resources at local level and to replace the former irrigation boards. This has been done in order to address past imbalances of water resource usage and distribution of water.
- Agriculture and water are necessary for the development of the country. The agricultural sector is dependent on water. Both water and farming have a positive impact on the standard of living of the people. The provision of water by WUA to emerging black farmers does have a positive impact on their social and economic status. Water and agriculture are necessary for the poverty alleviation at rural communities.

CHAPTER 3

RESEARCH METHODOLOGY

3.1. INTRODUCTION

This chapter will highlight a research methodology which includes the following: research design, area of study, the population and sampling methods and procedures, data collection methods and procedures and data analysis methods.

3.2. RESEARCH DESIGN

McGivern (2006:78) argues that 'Research design is about the logic of the research, its framework or structure. It is at this level, given what we know about the problem to be researched and the sort of enquiry (exploratory, descriptive or explanatory), which that demands, that we make decisions about the structure of the research. The structure may comprise a cross-sectional, a longitudinal or an experimental design or a case study. The purpose of the research design is to structure the research so that it delivers the evidence necessary to answer the research problem as accurately, clearly and unequivocally as possible. q

On the other hand Bless et al (2000:63) argue that research design relates directly to the testing of hypothesis. It is a specification of the most adequate operations to be performed in order to test a specific hypothesis under the given conditions.

Bless et al (2000:37), indicated that in cases where very little is known about the research topic one speaks of explanatory research. Where the researcher is merely interested in describing a phenomenon the research is called descriptive research. When the research question requires an understanding of relationships between variables, the research is called co-relational research. Finally, when

the research question demands that the researcher explains the relationship between variables and demonstrates that change in one variable causes change in another variable, the research is called explanatory.

Based on the latter, this research is an explanatory because research is explanatory because aims to analyze and explain the multidimensional relationship between the functioning of LWUA and the socioeconomic changes of the lives of emerging black farmers as beneficiaries.

This research shall be conducted through both the qualitative and quantitative research approach. Assessing socio-economic impacts requires both quantitative and qualitative measurements of the impact of a proposed development. For example, a proposed development may increase employment in the community and create demand for more affordable housing. Both effects are easily quantifiable. Also of importance, however, are the perceptions of community members about whether the proposed development is consistent with a commitment to preserving the rural character of the community. Assessing community perceptions about development requires the use of methods capable of revealing often complex and unpredictable community values.

3.3. AREA OF STUDY

The studies will focus on Letaba Water Users Association with reference to the Mavunda and Mariveni water schemes. The LWUA forms part of the Levubu Letaba Water Management Area which is also referred to as WMA 02 and covers parts of Greater Tzaneen and Baphalaborwa Local municipalities under Mopani district municipality. (See Maps: Appendix A and B).

3.4. POPULATION OF THE STUDY

Population refers to individuals in the universe those possess specific characteristics. Population can again be defined as a set of entities of which all the measurements of interests to the practitioner or researcher are presented. The entities may be people, such as all the clients comprising a particular work. Also a population can be defined as a total set from which the individuals or units of the study are chosen or the sets of elements that the research focuses on and to which the obtained results should be generalized (De Vos et al, 2002: 198).

McGivern (2006: 274) argues that in research context population refers to the universe of inquiry or, put another way, to the people, organization, events or items that are relevant to the research problem. The way in which a population is defined depends on the issues the research aims to address

Moser and Kalton (1971) as cited by McGivern (2006: 275) make the distinction between the target population and the survey population. The target population is the population from which the results are inquired; the survey population is the population actually covered by the research.

The population of this study is 56 emerging black farmers who are found within the schemes under study, which are Mavunda and Mariveni. A sample of 20 farmers with 10 farmers from each scheme has been drawn from the population of emerging black farmers.

3.4.1. Sampling methods and procedures

McGivern (2006: 277) indicated that there are two categories of sampling techniques namely random or probability sampling and purposive or non-probability sampling. Random or probability sampling is where each element of the population is drawn at random and has a known (and non-zero) chance of

being selected. The person choosing the sample should ensure to some extent that the sample is representative of the population. In non-probability sampling there is no random selection process, and we do not know what probability each element has of being selected because the person choosing the sample may consciously or unconsciously favour or select particular elements.

A probability sampling has been used as a research instrument or technique for selecting a sample for this study. There are different types of probability sampling and a stratified random sampling technique has been considered for this study because the population consists of women and men of different ages who are from different backgrounds.

De Vos (2002:205) argues that stratified random sampling is suitable for heterogeneous populations because the inclusion of small subgroups percentage wise can be ensured.

The researcher opted for stratified random sampling method in order to give the farmers a fair chance of being chosen. The researcher took into consideration the fact that some of the farmers are women. Women are the most affected people by poverty since they are responsible for domestic chores and offspring upbringing. Ten (10) of the respondent are women.

3.5. DATA COLLECTION METHODS AND PROCEDURES

Bless et al (2004: 104) indicated that there are many possible ways of gathering information directly from participants if such information cannot be obtained from observation. The first of these methods is the interview. An interview involves direct personal contact with the participant who is asked to answer questions relating to the research problem. One method is of getting people to express their views in the non-scheduled interview, which consists of asking respondents to on broadly defined issues.

The researcher conducted interviews and has made use of a questionnaire in collecting data from the respondents.

Interviews were also conducted even after hours to give working respondents a chance to take part in the study. Secondary data information has been gathered from articles, government policies and websites.

3.6. METHODS OF DATA ANALYSIS

According to De Vos et al (2002: 339) data analysis is the process of bringing order, structure and meaning to the mass of collected data. It is a messy, ambiguous, time . consuming, creative and fascinating process. Qualitative data analysis is a search for general statement about relationships among categories of data it builds grounded theory.

The process of data analysis takes many different forms depending upon the nature of the research question and the design, and the nature of the data itself. Quantitative data is often analyzed using a range of descriptive and inferential statistical procedures. Qualitative data is analyzed with techniques especially designed for this form of data. Very often qualitative and quantitative methods of data analysis play complementary roles in the data analysis processes (Bless et al, 2004: 137).

Since this research is both quantitative and qualitative in nature statistical methods and findings have been presented in the form of tables which are easier for the reader to interpret and can easily indicate data relationships which could be difficult to interpret in words. The researcher has also made use of graphs and diagrams.

3.7. ETHICAL CONSIDERATIONS

In conducting this study the researcher did not in any way harm the respondents of the study whether emotionally or physically. The researcher informed the respondents about the possibility of any harm before hand. The researcher also informed the respondents about the content of the study so that the respondent could make an informed decision about whether or not to continue with the study.

The researcher did not deceive the respondent by not disclosing relevant information about the study. The researcher did not violate the respondents' privacy, anonymity and confidentiality and has conducted the research with competence.

The researcher sought approval from the Department of Water Affairs, Agriculture, and the District Municipality, farmers associations, local traditional leaders and the Letaba Water Users Association before conducting the study and complied with the rules provided by all the above-mentioned institutions.

3.8. LIMITATIONS OF THE STUDY

The study was limited to Mavunda and Mariveni schemes. The LWUA forms part of the Levubu Letaba Water Management Area also referred to as WMA 02. The findings from the research represent and reflect generalization of the larger populations which is the emerging black farmers of LWUA. The researcher consolidated literature reviewed with research findings.

3.9. CONCLUSIONS

This study was conducted through both qualitative and quantitative research approaches. The area of study was Mavunda and Mariveni Farmers schemes which consist of emerging black farmers. The population was 56 farmers and a

sample of 20 farmers has been drawn with the use of a stratified random sample method and half of the respondents are women.

The researcher used interviews and questionnaires to collect data from respondents and a scheduled structure interviews to get required information. The interviews were personally administered by the researcher. Relationships among categories of data will be analyzed through qualitative data analysis methods whereas quantitative data analysis method will be used for data that takes many different forms. Data was collected from both primary and secondary sources.

CHAPTER 4

DATA PRESENTATION, ANALYSIS AND INTERPRETATION

4.1. INTRODUCTION

The purpose of this chapter is to present, analyze and interpret data collected from respondents through questionnaires. Since this research is both quantitative and qualitative in nature statistical methods and findings have been presented in the form of tables, graphs and statistics and it shall be easier for the reader to interpret and indicate data relationships which could be difficult to interpret in words.

The researcher aims to assess the socio-economic impact of LWUA on emerging black farmers. The researcher has sought to answer questions on whether the LWUA has managed to deliver its functions and objectives as stated in its constitution and the National Water Act of 1998.

4. 2. DATA REQUIRED

According to Nueman as cited by Musitha (2003: 81) states that data are the raw material with which researchers pursue their research. The quality and quantity of data determines the relevance of research results. Two main types of sources of data used by researchers are published or archival material and observations.

The researcher consulted with various sources of information including interviews with respondents, the associations business plan and the constitution in order to collect data. The type of information needed is as follows:

4.2.1. Personal profile of respondents

The researcher required information on personal information of respondents. The information required included respondents gender, membership and duration of membership to the LWUA and the name of the scheme under which the respondents is a member.

4.2.2. Objectives of the Water Users Association

The researcher investigated and required documents which are the LWUA business plan and constitution highlighting the objectives, functions and duties of the association. The documents clearly indicated the objectives as well as the functions and duties of the association. The documents further highlight membership of the association as well as the water allocation to respective water users.

The researcher also requested general information about the LWUA from the respondents, in order to determine as to whether the respondents are informed about the WUA.

4.2.3. The role of LWUA in Water Resource Management

The researcher sought information regarding the role that LWUA has played in the overall management of the water resources under its area of jurisdiction. The resources include Nondweni, Ebenezer and Tzaneen dams.

4.2.4. Participation of emerging black farmers in LWUA activities

The researcher also sought information on the level of participation of the emerging black farmers in the establishment process of the Letaba Water Users Association. Information was also sought on the current level of involvement of

farmers in planning and decision making process of the WUA. It will further give indication on whether the farmers are informed about activities that the WUA undertakes.

4.2.5. Attitude of emerging black farmers towards LWUA

The researcher required information on the attitude of emerging black farmers towards the WUA. The information will assist the researcher in measuring the interest and the perception of the emerging black farmers towards the WUA.

4.2.6. Economic activities

The researcher needed information on the economic activities that the farmers are engaged in. The researcher had to find out as to whether the provision of water by the WUA has in any way contributed to the economic achievement of emerging black farmers.

4.2.7. The improvement of the standard of living of emerging black farmers and their families

The researcher also required information on the standard of living of farmers. The information includes employment, the improvement in the social and economic well being. The information was necessary for comparing the farmers' standard of living before and after they joined the WUA.

4.3. CATEGORY OF QUESTIONS

The researcher compiled the following questions based on the type of data required:

- **Questions on personal profile of respondents**

The purposes for asking these questions were to be able to identify the number of women and men who took part in the study. The questions were also asked to determine as to whether the respondents are members of the LWUA and the duration of the membership.

- **Questions on the objectives and functions of the LWUA**

The purpose of asking these questions was to identify the functions, objectives and duties of the LWUA and to further find out as to whether the WUA has been able to implement them or not.

- **Questions on emerging farmers' participation in WUA activities**

The purpose of asking questions relating to the participation of emerging black farmers in an establishment and decision making process within the LWUA was to make it possible for the researcher to measure the perception and the level of information that the farmers have about the LWUA.

- **Questions on economic status and achievement**

The questions were asked in order to identify the different products that the farmers are farming in their farms and to find out more about their target markets. The researcher asked these questions in order to get information on the farmers' economic status before and after they have joined the WUA.

- **Questions on employment**

These questions were asked to get the number of jobs created for people who are from the communities.

- **Questions on social status**

The researcher asked questions on the social status of emerging black farmers before and after joining the WUA. The questions were asked in order to identify if the health and education status of emerging black farmers and their immediate

families have changed for the better. The questions were also asked to find out as to whether emerging black farmers have always being able to afford food and provide shelter for themselves.

4.4. SOURCES OF INFORMATION

The data was obtained from the following groups of respondents:

- **Emerging black farmers of LWUA**

The emerging black farmers are the primary source of information for this research since they are also beneficiaries of the Water Users Association. The farmers joined the association after the former Greater Letaba Irrigation Board was disestablished in 1998. The new association was officially declared a WUA in 2001 by the then Minister of Water Affairs and Forestry Mr Ronnie Kasrils. The association has new membership, mandate, objectives and functions. The Irrigation Board only catered for the white minority group within the Letaba River catchment area.

- **The Letaba Water Users Association**

The researcher also requested information from the office of Letaba Water Users Association. The LWUA is responsible for distribution, rationing, monitoring of water use abstracted for agricultural purposes from the Ebenezer, Tzaneen and Nondweni dams which is distributed to as far as the Kruger National Park.

- **Sector departments**

The information was also requested from the following Department of Water Affairs and Forestry (National, Provincial and District levels). The Department of Water Affairs and Forestry is the custodian and regulator of water resources.

4.5. DATA PRESENTATION AND DISCUSSION OF THE EMPIRICAL FINDINGS

- **Profile of participants**

A sample of 20 (100%) respondents was drawn from a population of 56 farmers, 10(50%) of the respondents were women and 10(50%) were men. All the respondents indicated that they have been affiliated members of the LWUA since 2001 when it was established. Ten (50%) of the respondents were from Mariveni and another ten (50%) were from Mavunda scheme.

- **Membership fee to the LWUA**

All 20 (100%) respondents indicated that they contribute R100, 00 per year each as membership fee to the LWUA.

- **Objectives, Functions and Duties of the LWUA**

All the 20 (100%) emerging black farmers indicated that the WUA has managed to provide them with water for irrigation at their farms without failure. The WUA , farmers, DWAF and DoA indicated that canals have been constructed and the association has managed to provide its water users with water with the utilization of water works and canals and in the case of Mariveni and Mavunda the WUA supplies water with the use of the N&N and Masalaal canals. The above mentioned respondents indicated that the WUA has also managed to deliver as mandated by the DWAF, the operation and maintenance of the storage dams known as the Ebenezer, Nondweni and Tzaneen dams; the weir in the Great Letaba river known as , Yamorna, Junction, Jasi, Prieska and Nondweni.

According to the business plan and the constitution of the LWUA, the association has also provided the following services to emerging black farmers besides allocating water:

- The Nondweni dam has been constructed at the lower end of the Great Letaba river to cater for farmers at the lower part of the catchment and most of those beneficiaries are emerging black farmers;
 - Supplying pumps and other equipments to the Mavunda scheme worth R175 000,00;
 - The LWU has also upgraded a storage dam of Mariveni scheme;
 - The WUA also supplies raw water to Letsitele, Gravelotte and Nkowankowa communities.
- **Participation of emerging black farmers in the establishment of LWUA**

Table 1: Participation of emerging black farmers in LWUA establishment

RESPONDENTS	NUMBER	PERCENTAGE (%)
Respondents who participated in the establishment of LWUA	20	100
Respondents who did not participate in the establishment of LWUA	0	0
Total	20	100

Table 2: Sufficient provision of services by LWUA to farmers

RESPONDENTS	NUMBER	PERCENTAGE (%)
Respondents receiving sufficient service from LWUA	20	100
Respondents who are not satisfied with the provision of services by LWUA	0	0
Total	20	100

Table 3: Sufficient flow of information to emerging black farmers

RESPONDENTS	NUMBER	PERCENTAGE (%)
Respondents receiving sufficient information from LWUA	20	100
Respondents who do not receive sufficient information from LWUA	0	0
Total	20	100

The data presented above indicates that the all 20 (100%) of emerging black farmers were well involved in an establishment of the Letaba Water Users Association as well as the current planning and decision making processes. During an establishment of an association, each of the 5 districts that constitute an association was requested to elect a member who had to form part of the executive committee. Currently, each district has a representative in an executive committee who then reports back to fellow farmers within the districts. The farmers have a positive attitude towards an association and they are well informed about decisions that are taken by the overall committee members.

- **Water allocations and land available for farming**

All 20 (100%) emerging black farmers at Mariveni and Mavunda indicated that they have established Cooperatives. The Letaba Water Users Association provides a bulk water allocation to Mariveni and Mavunda schemes. The Mariveni and Mavunda scheme are allocated +/-400 000l/month and +/-380 000l/month respectively. The allocations are not stable and fluctuates based on water availability at the sources. The WUA applies restrictions during dry seasons or when there is drought. The farmers at Mavunda scheme have 360 hectares of land. Farming is currently being undertaken on 224 hectares. The Mariveni scheme has a total of 295 hectare of land and is currently farming on

162, 98 hectares. The farmers have financial constraints and have opted to farm on the mentioned hectares and shall expand to the extra land in the near future.

- **Economic activities and achievements of emerging black farmers within the LWUA**

Water is imperative for agricultural production and with an allocation of water from the water sources; farmers under Mariveni and Mavunda schemes are able to farm different products.

Table 4: Economic activities and achievements

Name of Cooperative	Products	Products in volume	Income
Mariveni	Citrus	2100 tons	R 800 000,00
	Bananas	2000 tons	R 750 00,00
Mavunda	Citrus	3000 tons	R1 200 000,00
	Mangoes	1000 tons	R 300 000,00
Total		8100 tons	R 3 050 000,00

The farmers target markets are International, National and Local markets. Both co-operatives export their products to Canada, United Kingdom, Italy, Iran, China and Japan. Nationally the farmers supply companies like African Sun with citrus, bananas and mangoes for atchaar and juice. Hawkers and fruit shops also get their products from the farms which in turn boosts local economy.



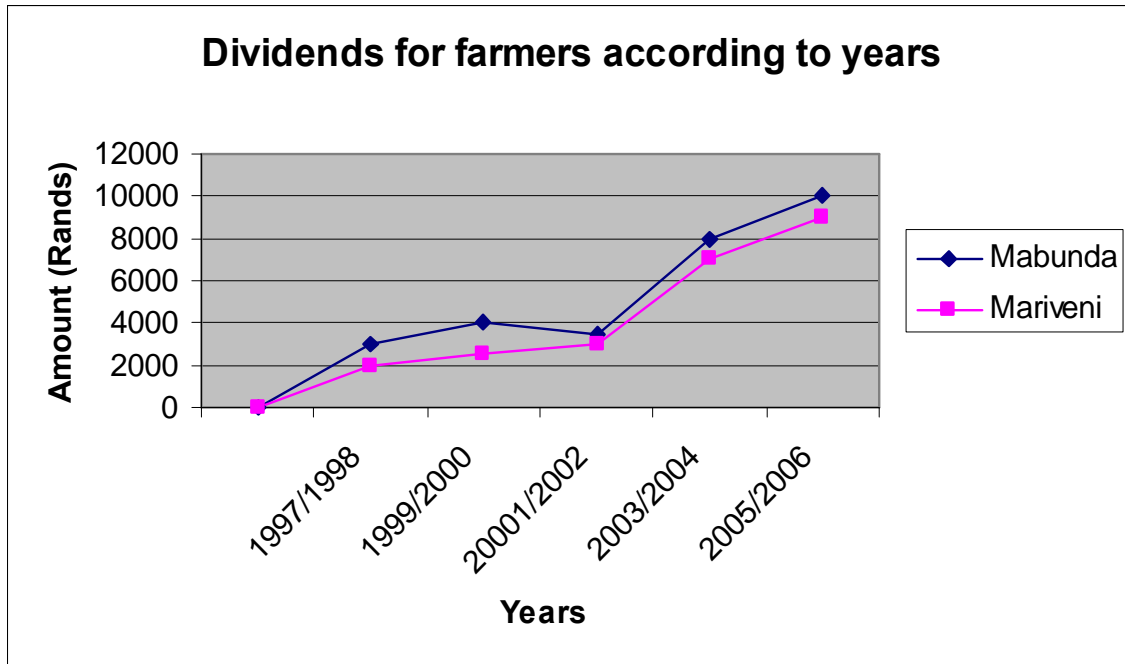
Plate 2: Citrus fruits farmed by Letaba farmers

- **Profit made by Farmers since joining the WUA**

Table 5: Dividends of farmers over the years

Year		1997/1998	1999/2000	20001/2002	2003/2004	2005/2006
Mavunda	0	3000	4000	3500	8000	10000
Mariveni	0	2000	2500	3000	7000	9000

Figure 1: Dividends for farmers according to years



The above graph illustrates the amount that the farmers have been getting as dividends at the end of each year. There has been steady growth though before the profit is divided amongst them the other money is used for paying out the loans that the farmers have taken as a co-operative to utilize in the farm.

- **Job creation/ Employment**

Table 6: Job Creation of community members

Name of Cooperative	No of jobs of created
Mariveni	34
Mavunda	108
Total	142

Table 7: Job creation for farmers

RESPONDENTS	NUMBER	PERCENTAGE (%)
Respondents unemployed before starting farming	8	40
Respondents employed before starting farming	12	60
Total	20	100

The Mariveni and Mavunda schemes have created 142 jobs. Apart from the jobs that have been created for community members, 60% of farmers indicated that they were unemployed before they started farming and 40% were employed elsewhere and were earning less than what they are earning currently at their respective farms.

Farmers' Income per month

Both farmers at Mariveni and Mavunda have established Co-operatives and earn salaries per month. The profit that they make in a year, they divide it amongst themselves at the end of each year depending on a land that each farmer has contributed towards the co-operative. The farmers also earn different salaries based on the latter.

Table 8: Farmers' income per month

Current Income	R1300	R1500	R2000	R3000	R4000
No of respondents	5	4	5	3	3
Respondents (%)	25	20	25	15	15

- **Change of social status of Farmers**

The tables below will present the data collected from emerging black farmers indicating the change in their social status before and after they joined the Letaba Water Users Association. The data is focused on the following, namely education, health, food and shelter.

Table 9: Change of Social status – Health

Respondents who could afford to pay for Health services before joining WUA			Respondents who can afford to pay for Health services after joining WUA	
Response	No of respondents	No of respondents (%)	No of respondents	No of respondents (%)
Yes	5	25	20	100
No	15	75	0	0
Total	20	100	20	100

Table 10: Education

Respondents who could afford to pay for Education before joining WUA			Respondents who can afford to pay for Education after joining WUA	
Response	No of respondents	No of respondents (%)	No of respondents	No of respondents (%)
Yes	4	20	20	100
No	16	80	0	0
Total	20	100	20	100

Table 11: Shelter

Respondents who could afford to construct a shelter for their families before joining WUA			Respondents who can afford to construct a shelter for their families after joining WUA	
Response	No of respondents	No of respondents (%)	No of respondents	No of respondents (%)
Yes	2	10	20	100
No	18	90	0	0
Total	20	100	20	100

Table 12: Food

Respondents who could afford to pay for food for families before joining WUA			Respondents who can afford to pay for food for families after joining WUA	
Response	No of respondents	No of respondents (%)	No of respondents	No of respondents (%)
Yes	17	85	20	100
No	3	15	0	0
Total	20	100	20	100

Figure 2: Change of social status

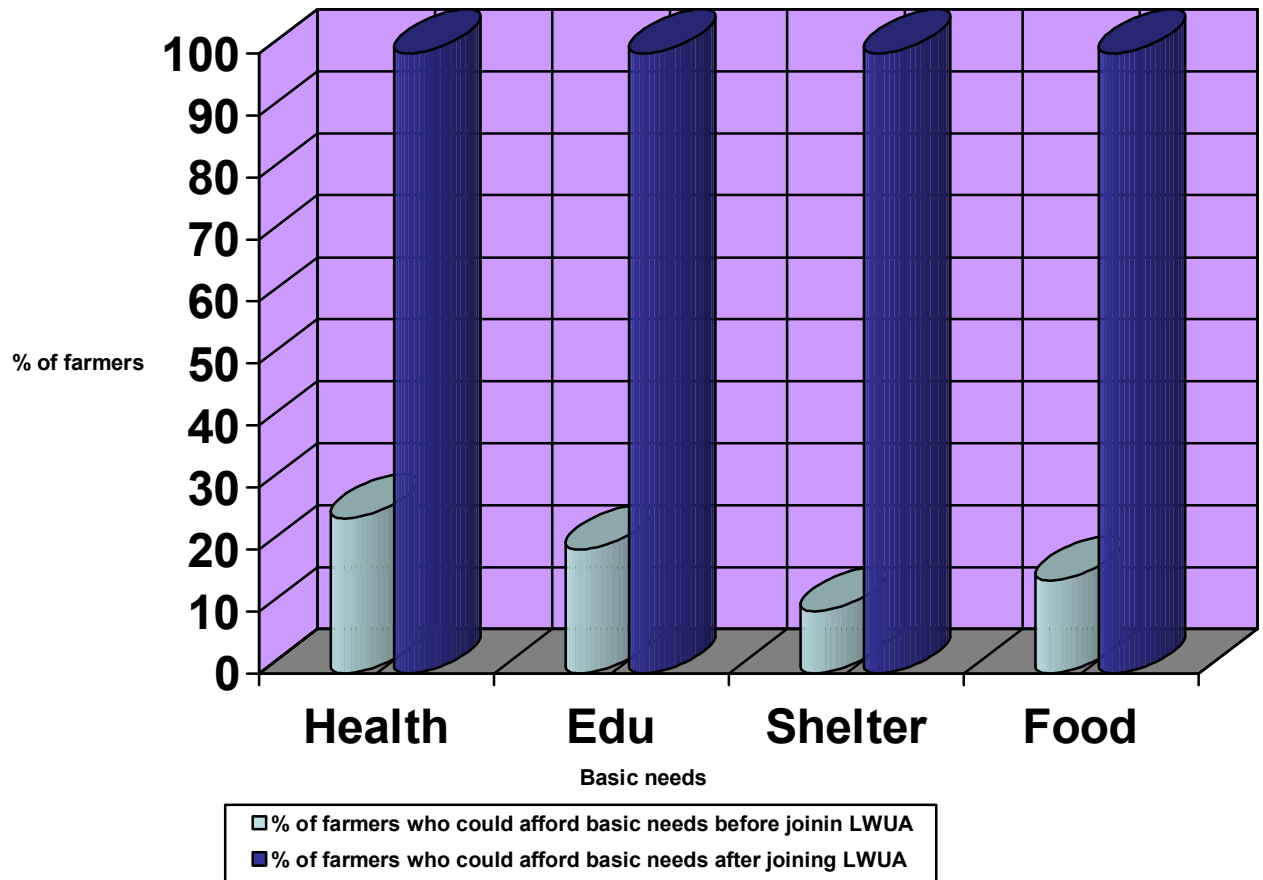


Table 13: Change of social status

Basic needs	% of farmers able to afford basic needs before joining WUA	% of farmers able to afford basic needs after joining WUA
Health	25%	100%
Education	20%	100%
Shelter	10%	100%
Food	15%	100%

The graph and table above shows the improvement in the ability of emerging black farmers in providing for their families and themselves with basic needs. The provisions for health, education, food and shelter before and after the farmers joined the Water Users Association have changed. Logically, the percentage of farmers who were able to afford for food before joining LWUA should have been higher than the percentage of farmers who were able to afford education, shelter and health services before joining the LWUA. Upon probing, the researcher realized that emerging farmers seemed to have been able to afford though in actual fact they were able to get them for free since they were identified by specific government departments as indigents who get basic services for free. Emerging black farmers (100%) can now cater for their basic needs as well as those of members of their families. The farming schemes also donate their produce to local primary schools and crèches.

- **Capacity building and training**

All 20 (100%) emerging black farmers indicated that an association has not managed to assist farmers with capacity building or training. The latter was provided by the Department of Agriculture which has extension officers who provide farming support to farmers ranging from advice on proper irrigation methods and chemicals that can be used for pesticides.

- **Financial assistance**

The 20 (100%) emerging black farmers under study indicated that they are currently experiencing financial constraints. The association does not provide financial assistance for any water nor farming activities.

4.6. CONCLUSIONS

The researcher collected data from a sample of 20 respondents which was drawn from a population of 56 emerging black farmers. The study has managed to identify the tasks that the LWUA has been mandated to undertake by the National Water Act.

The empirical findings have also shown that LWUA has made water available to all water users including emerging black farmers within its area of jurisdiction. The WUA allocates water, which makes it possible for farmers to farm different products which are sold to local, national and international markets. Through farming, farmers can now earn a living. They can now afford to pay for their children's education, provide their families with food and shelter and can as well afford to pay for medical expenses.

The farmers have not only provided themselves with self employment but have also created jobs for fellow community members who can also earn a living and provide for their families. The farm workers can also pay for their children's education and health services; they can now provide shelter and food. Some of the products from both two farming schemes are donated to local schools and crèches which also have an impact on the health of learners.

WUAs are an important level of water resource management which is at local level since they operate at the grassroots level.

CHAPTER 5

CONCLUSIONS AND RECOMMENDATIONS

5.1. INTRODUCTION

The study assessed the social and economic impact that the Letaba Water Users Association has had on emerging black farmers. The study assessed whether the LWUA has managed to implement its functions and objectives as mandated by the National Water Act and as indicated in the association's constitution.

The main focuses of the empirical findings are based on the Letaba Water Users Association. The researcher utilized questionnaires to collect data from the respondents. Data was collected from a sample of 20 emerging black farmers who are members of the Letaba Water Users Association, the Department of Water Affairs and Forestry and the LWUA.

5.2. CONCLUSIONS

This study has indicated an important role that the LWUA has played in the management of water resources at local level and the socio-economic impact it had on emerging black farmers.

5.2.1. Objectives, functions and duties of the LWUA

The objectives of LWUA as laid down in the National Water Act 36 of 1998 and its constitution have a main bearing on the control over the distribution, rationing, monitoring, and the use of agricultural water abstracted from the Ebenezer, Tzaneen and Nondweni dams including delivery of water to as far as the Kruger National Park. The WUA is also responsible for the administration including the management of finances.

The Letaba Water Users have managed to establish a water users association and have over the years coordinated and distributed water to all its members. The WUA has managed to control and ration water according to hectares and apply legal actions on non-complying users. In dry seasons or drought the association applies restrictions by allocating less water to users to ensure sustainable water sources. The association is faced with problems of vandalism; there are illegal abstractions of water done by non-members. The latter hinders the process of rationing amongst water users because water released from the sources is always measured according to water users needs or allocations.

5.2.2. Financial assistance for members

The association is a legal entity and is eligible to seek funds from donors, government and financing institutions like banks. The funds can be utilized for day to day running of the association and also to provide assistance to farmers. The association did not assist any emerging black farmers in acquiring loans or grants for farming purposes. Apart from the legal status that the WUA has, farmers have established co-operatives through which they can be able to seek financial assistance from any eligible financing institutions.

5.2.3. Capacity building and training

The association did not manage to assist farmers with capacity building or training. The latter was provided for by the Department of Agriculture which has extension officers who attend to day-to-day farming assistants of the farmers ranging from advice on proper irrigation methods and chemicals that can be used for pesticides.

5.2.4. The role of LWUA in Water Resource Management

The LWUA as the lowest and local level of the water resource management directly deals with emerging black farmers and other water users at local level. The LWUA has managed to coordinate water resource related activities of the Greater Letaba River catchment area.

The Letaba Water Users Association has managed to meet its obligation of water resource management by having achieved the following:

- Managed to operate and maintain the three storage dams which are Nondweni, Ebenezer and Tzaneen dams as it has been mandated by the Department of Water Affairs and Forestry.
- Managed to operate and maintain different Weirs along the Great Letaba River which are Jasi, Prieska, Junction, Yamorna and Nondweni.
- Seeing to it that all water users who abstract water from the source, do so according to their allocation and pay towards that
- Make water available to all water users and then transport the water by means of waterworks i.e. canals and pipes to as far as the Kruger National Park.

Integrated water resource management of the Greater Letaba River catchment: Levubu/Letaba Water Management Area has been achieved because water has been rationed and allocated equally to all users that assure sustainable water resources. The emerging black farmers are represented in the Executive committee of the association and are part of the integrated water resource management of the water resources.

5.2.5. Agriculture, water allocation and poverty alleviation

Agriculture is the major source of income in many households and contributes highly to the GDP of South Africa and the world, but on the other hand agriculture cannot take place without water availability. Water allocations by the LWUA have

made it possible for emerging black farmers to be able to farm their acquired land. In actual fact, agriculture contributes to the alleviation of poverty because community members are able to sell their products and contribute towards the economy of the country and can also earn an income. Farmers are able to provide their families with food using the same products that they have farmed and combat hunger and malnutrition.

The LWUA has managed to meet its obligation of allocating water equally to its members. The WUA allocates water to its members based on the size of land the farmer is farming. The Mariveni scheme is allocated +/- 3800 000l/month and the Mavunda scheme +/-400 000l/month.

The LWUA has installed meters for all its members and is able to monitor them. Water restrictions are imposed on those users who use more water than what they have been allocated. The WUA also imposes water restrictions during dry seasons or drought in order to achieve sustainable usage of water resources.

5.2.6. Farming activities and target markets

Both farmers under Mavunda and Mariveni schemes produce Citrus, Mangoes and Bananas. The farmers are able to export to Canada, Italy and United Kingdom and also within the country where they sell to factories that make juice and atchaar. The farmer also targets the local market where they also sell to local fruits and vegetables shops and hawkers. The farmers highly contribute to an economy of the country.

5.2.7. Socio-economic impact

The provision of water to emerging black farmers by the LWUA has resulted in the following:

- **Job Creation**

The provision of water to emerging black farmers by the WUA has made it possible for the farmers to earn a living while at the same time creating jobs for others. The Mariveni and Mavunda schemes have created 142 jobs for community members. The two schemes are not farming on all the hectares that they have for farming and they are both planning to extend towards the remaining land. The decision of farming on a few hectares was made after they realized that they do not have enough money. The expansion of farming to the remaining land will definitely create more jobs for community members.

- **Health/ Education/ Food and Shelter**

The farmers' ability to farm made it possible for them to earn a living. They get monthly salaries and dividends at the end of year. The farmers can now afford to take their children to school and even pay towards their tertiary education.

They can afford to pay towards private medical consultations, food and construction of shelter for their families. Through farming they are also able to contribute to food security of their families and the global community because their produce is sold at local, national and international markets.

The farmers' ability to farm and earn a living gives them recognition at community level. They can now identify with certain social classes within the community.

- **Local Economic Development**

The emerging black farmers of Mariveni and Mavunda have managed to work together in order to achieve sustainable economic growth. The establishment of the Letaba Water Users Association gave the farmers a platform to work together and achieve a common goal which is effective use of water resources for

sustainable farming. The farmers have also established farming cooperatives and have done so in order to can get financial assistance and to can trade with foreign markets together. The latter has improved their quality of lives and those of fellow residents within Mopani District Municipality.

- **Women participation**

The researcher has realized that the LWUA also considered women when establishing the association because of the 20 respondents who were drawn from a population of 56 emerging farmers for the purpose of the study, 50% were women. Women are care givers at home and are the ones most faced with realities of poverty.

5.3. RECOMMENDATIONS

The researcher presents the following recommendations:

5.3.1. Agriculture and poverty alleviation

The participation of emerging black farmers in Water Users Associations can assist the agriculture sector in contributing more towards the economic growth of the country. Now that the government is establishing Water Users Associations all over the country, emerging black farmers should be advised to get involved in the process and be part of the associations so that their water related needs could be taken into consideration during planning. The agricultural sector relies more on water and farmers should well be considered since the sector creates jobs and alleviates poverty.

5.3.2. The role of LWUA in Water Resource Management

The LWUA should continue to allocate water to all users equally so as to ensure the South African water sector motto which says "Some for all, not all for some". Water allocation should be imposed in order to save water resources from depletion. Effective and proper water resource management will ensure sustainable water resources.

The water users should be trained on effective and better ways of saving water. South Africa is a water stressed country, both the Water and the Agriculture sectors should initiate innovative ways for irrigation that saves water. Farmers should be advised to utilize irrigation methods that save water.

5.3.3. Assistance by LWUAs in securing loans and donor funding

The WUA is considered a legal entity and should therefore assist emerging black farmers to acquire loans for purchasing of water reticulation and farming equipments with the assistance of the Department of Water Affairs and Forestry, Agriculture and Land Affairs. The WUA should also request for funds from donor organizations.

5.3.4. Continuous awareness campaigns and an effective water monitoring system

The association is faced with a problem of vandalism and illegal abstraction of water from the sources by non-members. It is easy for the association to monitor its members because there are meters installed at every farm and if a member exceeds the allocation, the farmer is penalized by reducing the following month's water allocation. The association needs to put monitoring systems in place that would make it possible for them to measure and account for all the water that has been released from the source. The association has to conduct continuous

awareness campaigns at communities about illegal abstraction and connections and the disadvantages that the latter has on sustaining water resources. Community members should be invited to join the association to avoid conflicts and improper use of water. The WUA should introduce an effective water monitoring system to ensure water resource sustainability.

The WUA is a legal entity and can therefore be sued or sue. The LWUA should take legal action against any perpetrators.

5.3.5. Land allocation and encouragement of community members to start farming

It is advisable for the government to allocate more land and funds for farming and encourage more community members to get involved in farming. When land and funds have been allocated, the government should also establish water resource management institutions where there is none to ensure availability of water for farming activities. The government can also introduce a twinning method where an experienced farmer is twinned with an inexperienced farmer who can provide mentorship and share lessons. More support should be given to farmers in a form of capacity building and training.

5.3.6. Establishment of relevant and sufficient water resource management institutions

The government is still in the process of establishing different water resource management institutions. Most WUAs have been given the mandate to operate as interim CMAs. The government needs to speed up the process in order to get define and allocate clear roles and responsibilities to water resource management institutions.

The establishment of WUAs at local is necessary for proper management of water resources. Diverse water users with vast needs are at local level. The WUAs have the mandate to provide water users, including farming with water which makes it possible for previously disadvantaged farmers to get water allocations and participate in farming and the economic growth of the country.

5.3.7. Capacity building and training

The LWUA should in future allocate financial resources for capacity building and training. This could be provided by LWUA in association with DWAF and the DoA.

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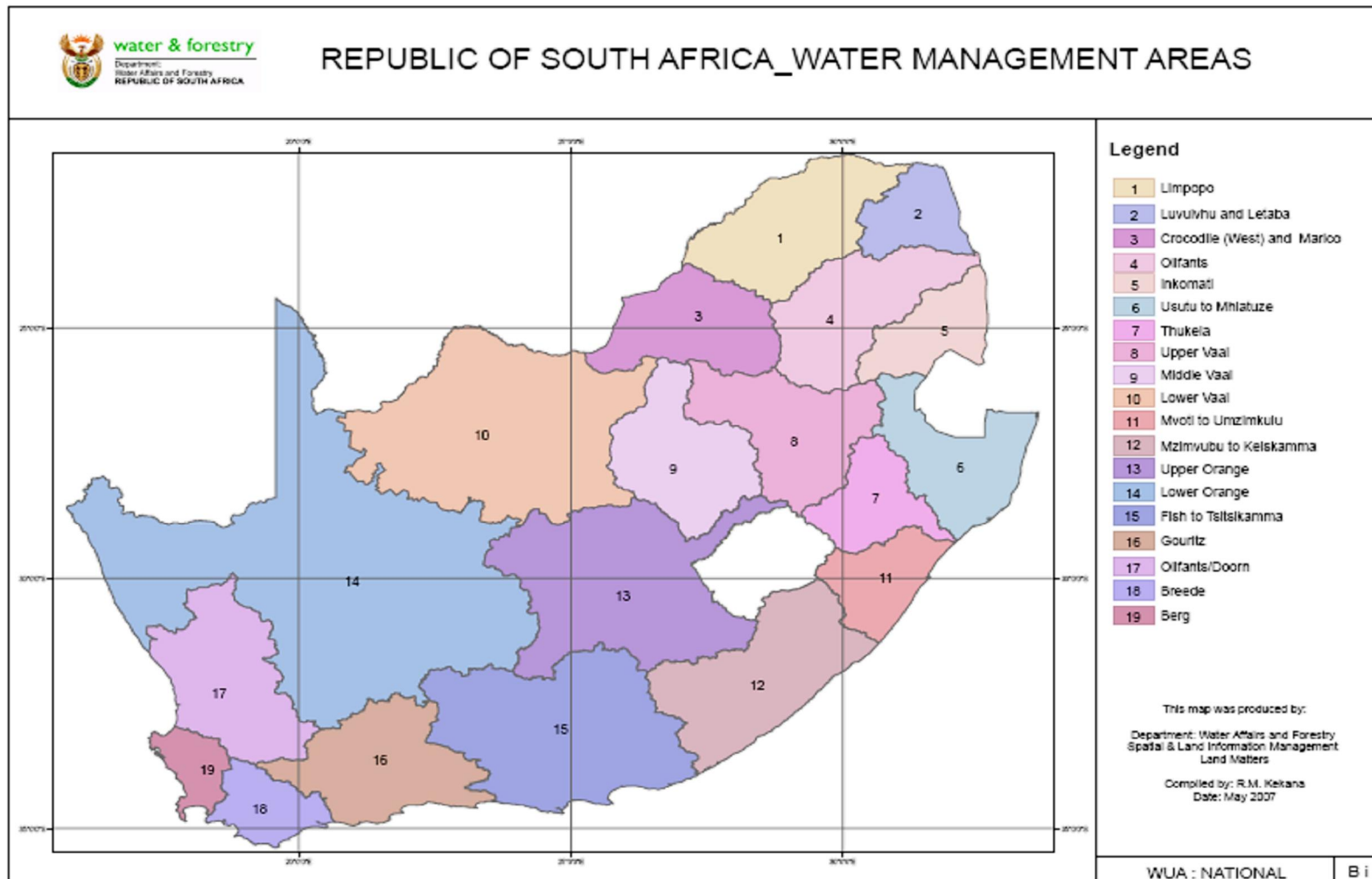
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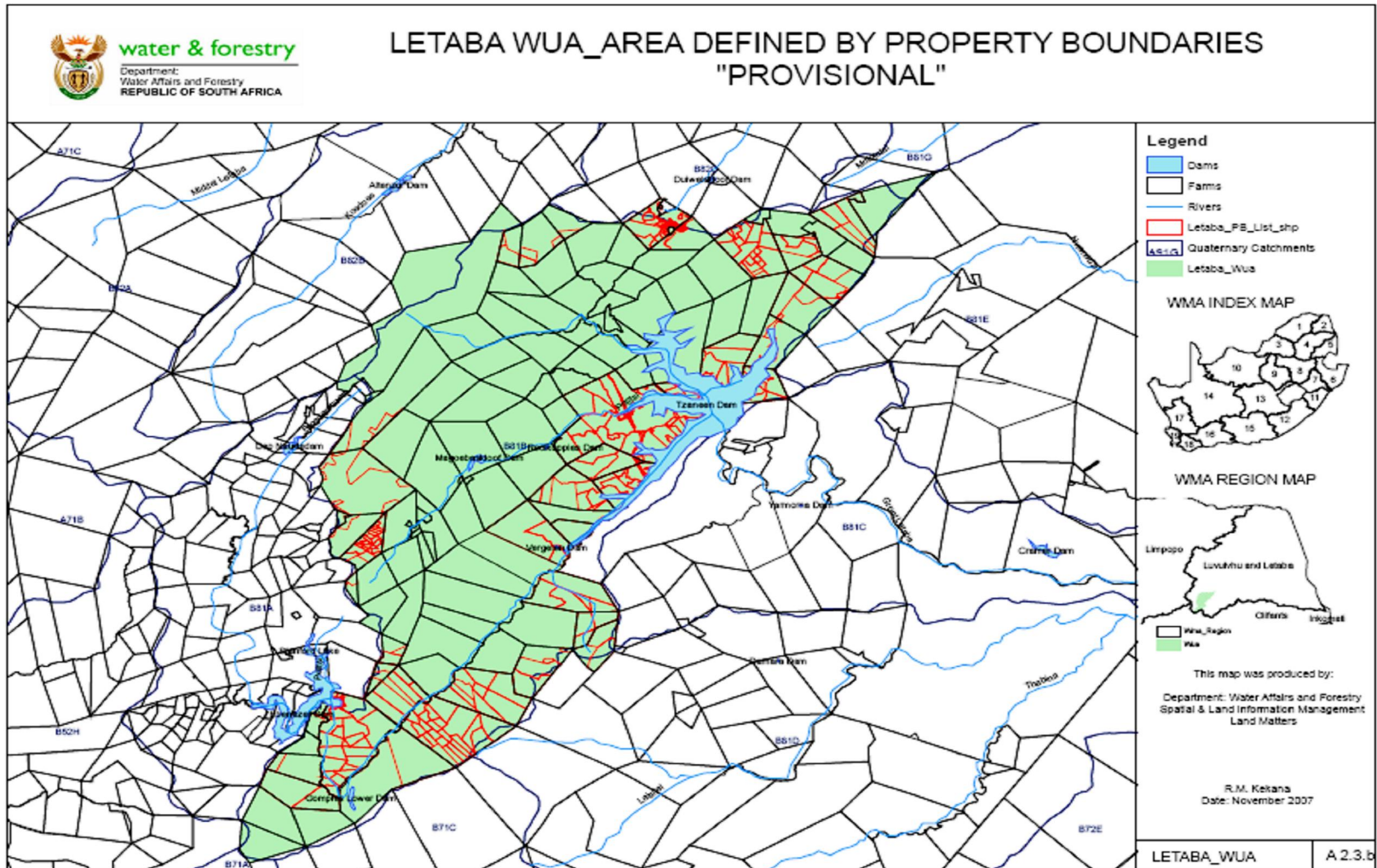
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Appendix A – REPUBLIC OF SOUTH AFRICA - WATER MANAGEMENT AREAS MAP



Appendix B: Letaba Water Users Association Map



APPENDIX C:

**RESEARCH TOPIC: A SOCIO-ECONOMIC IMPACT OF
LETABA WATER USERS ASSOCIATION ON EMERGING
BLACK FARMERS AT MOPANI DISTRICT
MUNICIPALITY, LIMPOPO PROVINCE**

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mavhusham@dwaf.gov.za**

Please return questionnaire on or before the 18th October 2007

The information that you are requested to provide is strictly going to be used for research purposes. This information will be treated as confidential.

Interview schedule: Emerging black farmers of LWUA

Section A: Profile of participant

1. Gender:

Male	
Female	

2. Member of LWUA

Yes	
No	

3. Duration of Membership 0 0 0 0 0 0 0 0 0 ..

4. Name of the scheme: 0 0 0 0 0 0 0 0 0 0 0

Section B: Information on participation on LWUA activities

1. When was the LWUA established? 0 0 0 0 0 0 0 0 0

2. Where you a member of the Letaba Irrigation Board before it was disestablished?

Yes	
No	

3. Do you know why the LWUA was established?

Yes	
No	

If yes, indicate why: 0 ...0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
0
0
0 0

4. How much do you contribute as membership fee to the LWUA?

0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0

5. Did you participate in the establishment of the LWUA?

Yes	
No	

If yes, how did you participate? õ õ õ õ õ õ õ õ õ õ õ õ õ õ õ õ
 õ .
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Section C: Information of Farming activities

1. What type of farming activities do you do?

Crop	
Livestock	

Indicate the Crops and/or animals you are farming at your farm.

- õ õ õ õ õ õ õ õ õ õ õ
- õ õ õ õ õ õ õ õ õ õ õ
- õ õ õ õ õ õ õ õ õ õ õ
- õ õ õ õ õ õ õ õ õ õ õ
- õ õ õ õ õ õ õ õ õ õ õ

2. When did you start farming? õ õ õ õ õ õ õ .

3. How many hectares are you farming on? õ õ õ õ õ õ õ õ õ õ õ õ õ õ

4. What has been the source of water since you started farming?

í í

5. How much water do you extract from the source for farming?

õ õ õ ..õ õ

6. Do you think the LWUA has managed to achieve its role of managing and allocating water within its area of jurisdiction?

Yes	
No	

12. Can you now afford the following now that you are farming?

- Health

Yes	
No	

- Education

Yes	
No	

- Shelter

Yes	
No	

- Food

Yes	
No	

THANK YOU!

APPENDIX D:

**RESEARCH TOPIC: A SOCIO-ECONOMIC IMPACT OF
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Please return questionnaire on or before the 16th October 2007

The information that you are requested to provide is strictly going to be used for research purposes. This information will be treated confidentially.

